2022 Regional Air Quality Strategy (RAQS)

San Diego County Air Pollution Control District

TABLE OF CONTENTS

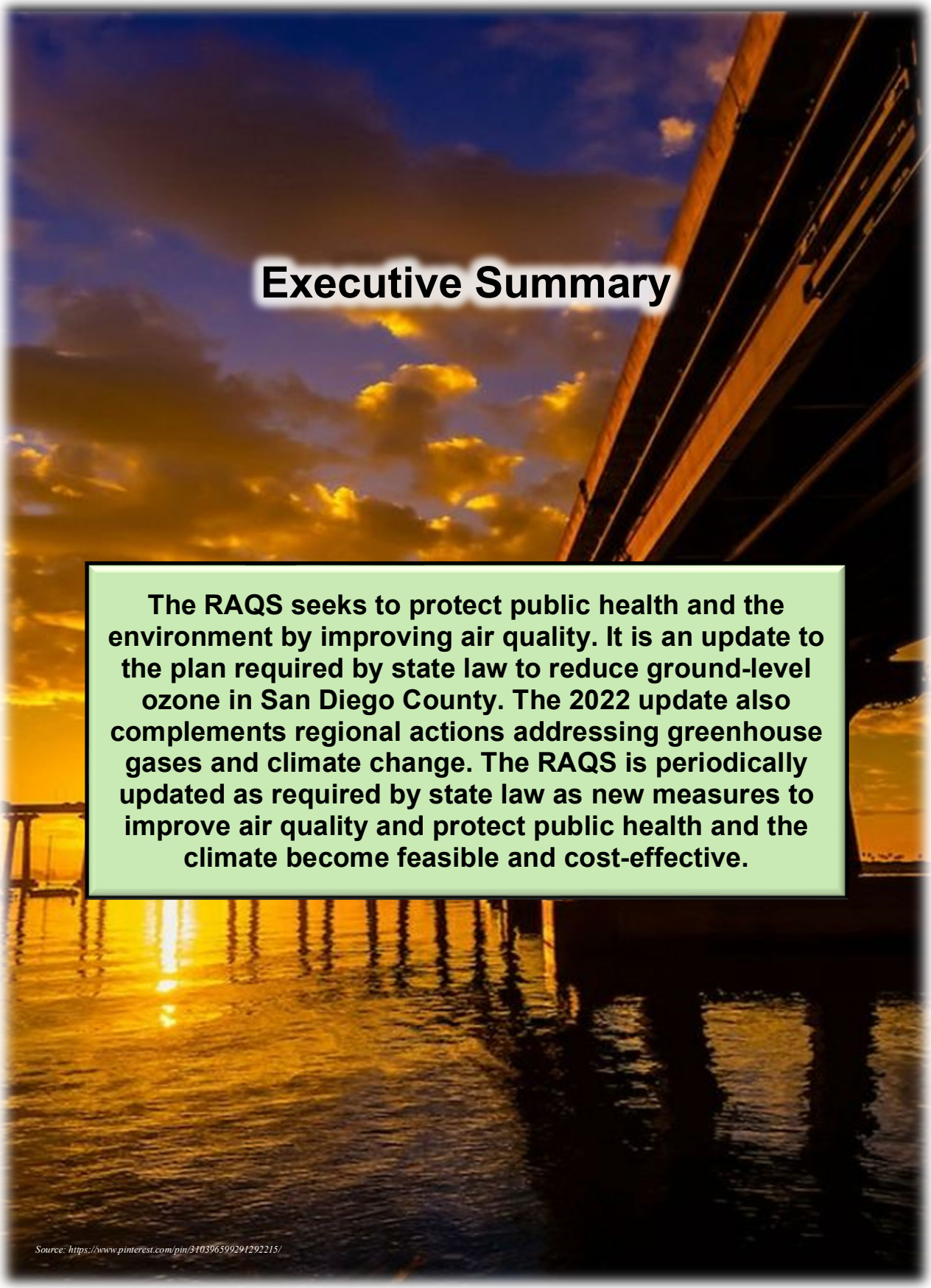
PAGE

EXECUTIVE SUMMARY EX-1
SECTION 1: PURPOSE AND VISION 1
SECTION 2: AIR POLLUTION AND ITS IMPACT ON PUBLIC HEALTH 9
SECTION 3: OZONE POLLUTION AND UNDER-RESOURCED COMMUNITIES 19
SECTION 4: OZONE POLLUTION, GREENHOUSE GASES, AND CLIMATE CHANGE 34
SECTION 5: OZONE POLLUTION AND MOBILE SOURCES 46
SECTION 6: OZONE POLLUTION CONTROL STRATEGY 59
SECTION 7: CONCLUSIONS 65

ATTACHMENTS

PAGE

Attachment A Statutory Requirements and Relationship between the RAQS and the Subsequent Rule Development Process A-1
Attachment B Ozone Pollution Trends and Emission Reduction Rates B-1
Attachment C Air Quality and Exposure Indicators C-1
Attachment D Expected Peak Day Concentration (EPDC) D-1
Attachment E Analytical Tools Used to Determine Attainment E-1
Attachment F San Diego County CalEnviroscreen 4.0 Scores and Ozone Percentiles by Census Tract F-1
Attachment G RAQS Implementation Progress Since 2016 ..... G-1
Attachment H Re-Evaluation of All Feasible Stationary Source Measures H-1
Attachment I Further Study Measures I-1
Attachment J Incentive Programs J-1
Attachment K Transportation Control Measures K-1
Attachment L Emission Offsets (No Net Increase (NNI) Demonstration) L-1
Attachment M Glossary of Terms M-1
Attachment N Endnotes N-1

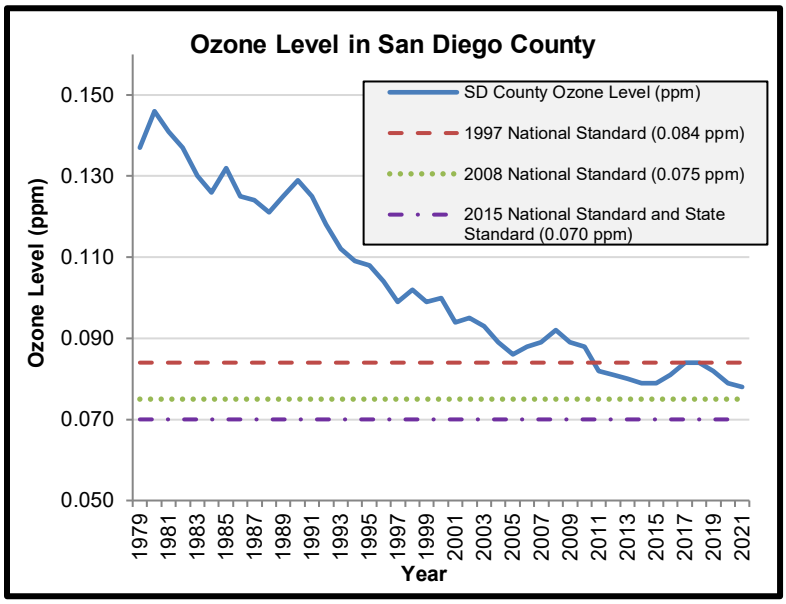


Executive Summary

The RAQS seeks to protect public health and the environment by improving air quality. It is an update to the plan required by state law to reduce ground-level ozone in San Diego County. The 2022 update also complements regional actions addressing greenhouse gases and climate change. The RAQS is periodically updated as required by state law as new measures to improve air quality and protect public health and the climate become feasible and cost-effective.

Source: https://www.pinterest.com/pin/310396599291292215/

Since its formation in 1955, the San Diego County Air Pollution Control District (District) has led the effort to reduce regional air pollution and protect public health. Over the past 67 years, the District has made extensive progress in improving air quality throughout San Diego County, while population, vehicle miles traveled (VMT), and economic output of the region have significantly increased. Exposure to ozone air pollution and associated risks to public health and welfare have also decreased.



However, further progress is needed. Scientific data continues to document the harmful impacts of air pollution, especially in vulnerable and under-resourced communities, which continue to be disproportionally impacted. Additionally, impacts of climate change threaten the region, which could potentially stagnate further progress for improving air quality. To further protect public health and stabilize the climate, the region must take aggressive actions to reduce ozone precursor and greenhouse gas emissions and decrease fossil fuel combustion to help meet state and federal air quality standards, as well as state and regional climate targets, such as countywide 'net zero' carbon emissions by 2045.

No single solution can result in clean air and solve the climate crisis on its own. However, it is critical that San Diego County residents, businesses, and institutions lead the way to provide new opportunities for the region, and to be a leader in the fight for clean air. Regionwide action can serve as an example that can be replicated throughout California, the United States, and beyond. The development and deployment of new technologies and ideas will help ensure our region remains prosperous and prepared against future impacts. Along with these efforts, the region can protect the environment and climate, drive economic change, improve the health of citizens, promote social equity, and ensure San Diego County remains a thriving place to live well into the 21st century.

To help accomplish this vision, the District has prepared a revision to the Regional Air Quality Strategy ("2022 RAQS"). The 2022 RAQS contains strategies to continue directly reducing emissions of ozone precursors in San Diego County, and assist in reducing particulate matter (PM) and Greenhouse Gases (GHGs) as a co-benefit. Consistent with the District's recent reorganization pursuant to Assembly Bill (AB) 423 (Gloria, 2019), the 2022 RAQS also proposes to expand the District's involvement as a regional agency within our regulatory authority, by including commitments to support research and

innovation opportunities, developing new partnerships with public and private entities, convening more opportunities for engagement and education with stakeholders, and integrating environmental justice and equity into all District actions.

The 2022 RAQS consists of the following sections listed below. More detailed and technical information is also found in Attachments to the 2022 RAQS:

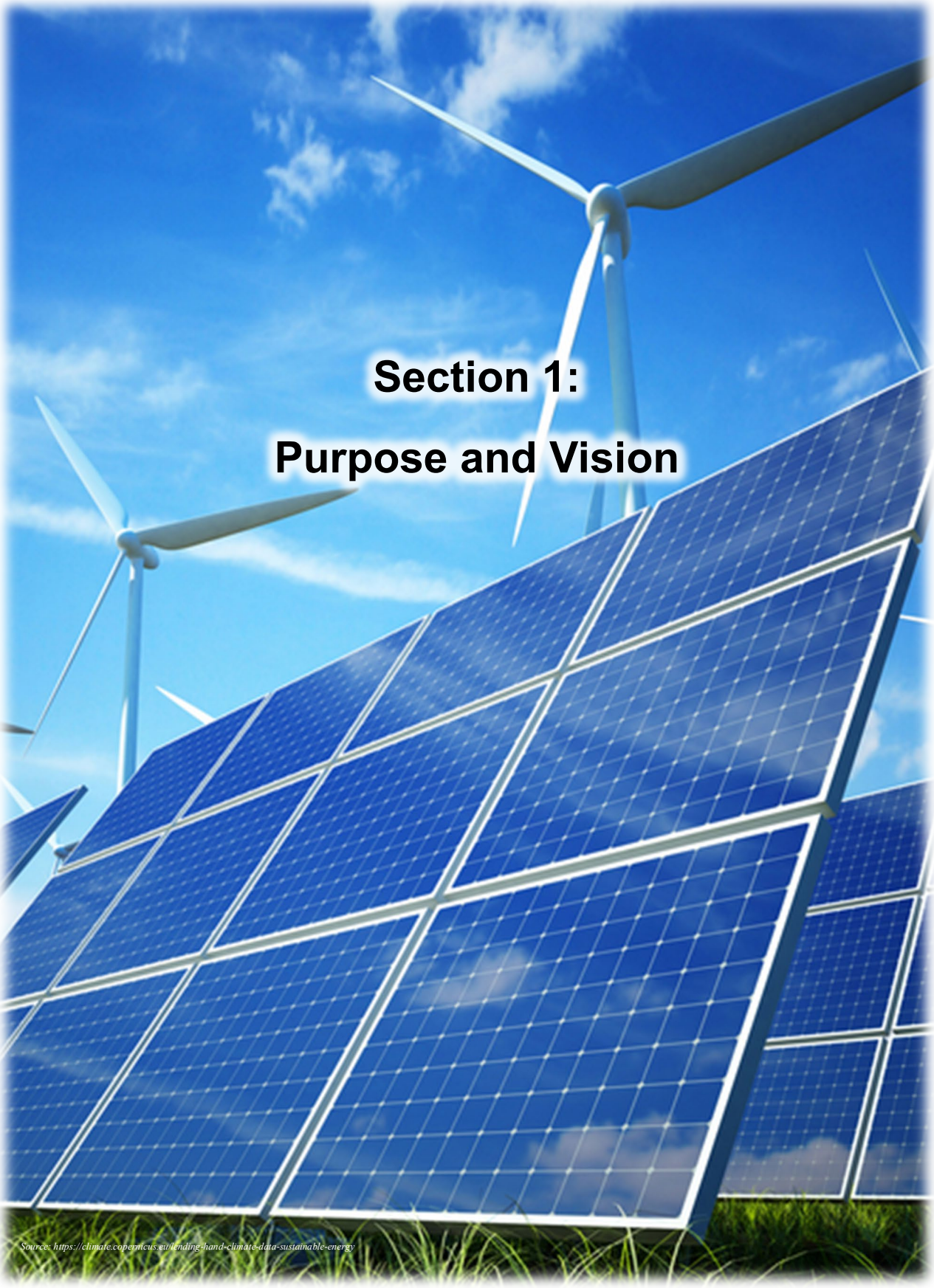
- The Purpose and Vision (Section 1)
- Air Pollution and its Impact on Public Health (Section 2)
- Ozone Pollution and its Impact on Under-Resourced Communities (Section 3)
- Ozone Pollution, Greenhouse Gases, and Climate Change (Section 4)
- Ozone Pollution and Mobile Sources (Section 5)
- Ozone Pollution Control Strategy (Section 6)
- Conclusions (Section 7)

Responding to Stakeholders

Changes made to the 2022 RAQS, in response to public and stakeholder feedback:

(1) More readable; less technical.
(2) More pictures and graphs.
(3) Added information on public health impacts.
(4) Added information about under-resourced communities.
(5) Added information about ozone's relationship with Greenhouse Gases and climate change.

The primary requirement associated with the 2022 RAQS is to ensure that a revised emission control strategy contained in each RAQS be at least as effective in improving air quality as the control strategy being replaced.[1] The proposed and scheduled measures included will provide additional direct emission reductions of ozone precursors (volatile organic compounds (VOC) and oxides of nitrogen (NOx)), as well as indirect reductions of GHG and PM emissions. The District has adopted/amended seven existing measures (Attachment G - RAQS Implementation Progress Since 2016), proposed and scheduled eight measures in the next three years (Attachment H - Re-Evaluation of All Feasible Stationary Source Measures), and proposed 14 additional measures for further study in the next three years. All proposed measures will further reduce air pollution beyond levels established in the 2016 RAQS. Together, the proposed control measures scheduled for consideration are estimated to reduce VOC emissions by approximately 0.04 tons per day and NOx emissions by 0.59 tons per day. The proposed measures are estimated to avoid as many as 67 cases of negative health endpoints[2] and 813 lost work or minor restricted activity days on an annual basis, which will contribute as much as $18.9 million to the economy annually from avoided health care costs and lost productivity.[3] Consequently, the 2022 RAQS will provide additional emission reductions relative to the 2016 RAQS and, therefore, is more effective in improving air quality and meets all state requirements.


Section 1:
Purpose and Vision
Source: https://climate.copernicus.eu/lending-hand-climate-data-sustainable-energy

HIGHLIGHTS

- High concentrations of ground-level ozone are unhealthy.
- Despite significant emission reductions amid considerable growth, ambient ozone levels in San Diego County do not meet state ozone standard levels.
- The California Clean Air Act (CCAA) requires areas that do not attain state ozone standards to prepare and implement state plans to attain standards by the "earliest practicable date."
- San Diego County's state ozone plan, the Regional Air Quality Strategy (RAQS) is periodically revised pursuant to state law as new measures become feasible and cost-effective, improve air quality, or further protect public health.
- Over 60% of regional air pollutants are emitted from mobile sources, such as passenger cars, heavy-duty trucks and buses, off-road equipment, locomotives, aircraft, and marine vessels. The District has limited regulatory authority over these sources of air pollution.
- State law requires the RAQS to include an expeditious schedule for adopting every feasible emission control measure under the District's purview.
- Proposed control measures identified in the RAQS are subject to a separate rule development process and Board consideration prior to implementation.

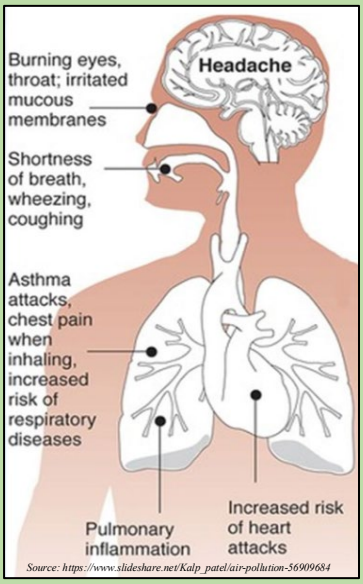
GOALS AND OBJECTIVES

The Regional Air Quality Strategy (RAQS), originally adopted by the San Diego County Air Pollution Control Board (Board) on June 30, 1992, has historically addressed state ozone standards as required by state law. It has been periodically updated as new measures become technologically feasible, improve air quality, or protect public health. Adopted measures have primarily reduced emissions of air pollutants, including VOC and NOx, that form ozone (also known as "precursors") from stationary sources such as industrial operations and manufacturing facilities. These measures have also indirectly (and in some cases, directly) reduced emissions of particulate matter (PM) and Greenhouse Gas (GHG) emissions. The measures included in each RAQS revision are evaluated and (if warranted) are then developed into proposed District rules or actions that are reviewed by the public and considered for adoption by the San Diego County Air Pollution Control District Governing Board (Governing Board). Once these measures are adopted, the District then assists affected facilities, stakeholders, and the public to help understand and comply with new requirements that may affect their operations.

The 2022 RAQS focuses on two complementary goals, as denoted on the following page. These goals are in line with statutory requirements associated with ozone, as well as voluntary actions associated with GHGs and climate change:

Protecting Public Health

Ozone is a harmful ground-level air pollutant that forms when other air pollutants react under the influence of sunlight and warm temperatures. It poses significant health risks to San Diego County residents. As such, reducing emissions of ozone precursors is required by state and federal law.



Ozone Effects on Health

The 2022 RAQS updates the region's air quality plan to maintain progress toward achieving state ozone standards as required by the California Health & Safety Code.[4] It is a comprehensive air pollution control strategy including all feasible measures to reduce emissions of VOC and NOx to be implemented over the next three years to further protect public health. The proposed measures (if adopted) included in the 2022 RAQS will directly reduce precursors of ozone (VOC and/or NOx). Some of these proposed measures will also indirectly reduce PM and GHGs as a co-benefit, and further protect public health regionwide and in under-resourced communities that are most impacted by air pollution. The green box below highlights how the District defines under-resourced communities. The 2022 RAQS will also ensure that San Diego County continues making expedient progress towards meeting health-protective state ozone standards.

How the District talks about Environmental Justice

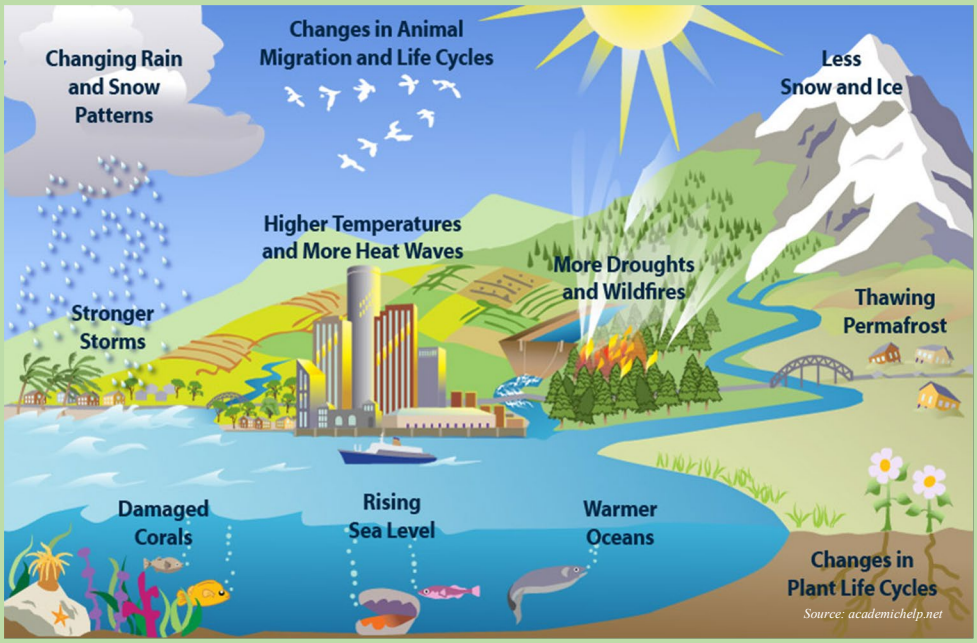
Several terms have been used to describe and recognize the effect of underinvestment and systemic discrimination on disproportionally burdened communities in California. These terms include Communities of Concern, Disadvantaged Communities, and Low-Income Communities. However, as times change, the terminology we use to describe these communities changes as well.

For the purposes of the 2022 RAQS and to align with the District's recently adopted Equity Statement, the District will use the term "under-resourced communities" or "disadvantaged communities" when discussing such areas.

Protecting The Climate

The proposed air pollution control strategies found within the 2022 RAQS will also assist in indirectly reducing GHG emissions as a co-benefit.[5] When sunlight strikes the earth's surface, some of it radiates back towards space as heat. GHGs absorb and trap the heat in the atmosphere, creating a greenhouse effect. This results in global warming and climate change. The proposed strategies and measures found

within the 2022 RAQS will indirectly reduce some GHGs (notably carbon dioxide and methane), as well as particulate matter (PM) and diesel particulate matter (DPM). These indirect reductions will aid other regional efforts to achieve a countywide goal of carbon neutrality by 2045,[6] and statewide GHG reduction and climate targets by 2050.[7] The 2022 RAQS now also offers a long-range vision of how San Diego County could look and function in a carbon neutral economy. These proposed actions will help lay the groundwork for future efforts to further reduce GHG emissions within the District's regulatory authority.



Impacts of Climate Change

POLLUTANTS DIRECTLY ADDRESSED IN THE 2022 RAQS

The 2022 RAQS describes a multi-pollutant strategy to directly reduce emissions and ambient concentrations of the following pollutants:

Ozone (O_3)

Ozone occurs both in the Earth's upper atmosphere and at ground-level. Ozone can be good or bad, depending on where it is found. Ozone found in the stratosphere, otherwise known as "good" ozone, occurs naturally in the upper atmosphere where it forms a protective layer that shields us from the sun's harmful ultraviolet rays. It is chemically equivalent to ground-level ozone, but instead forms naturally. This beneficial ozone has been partially

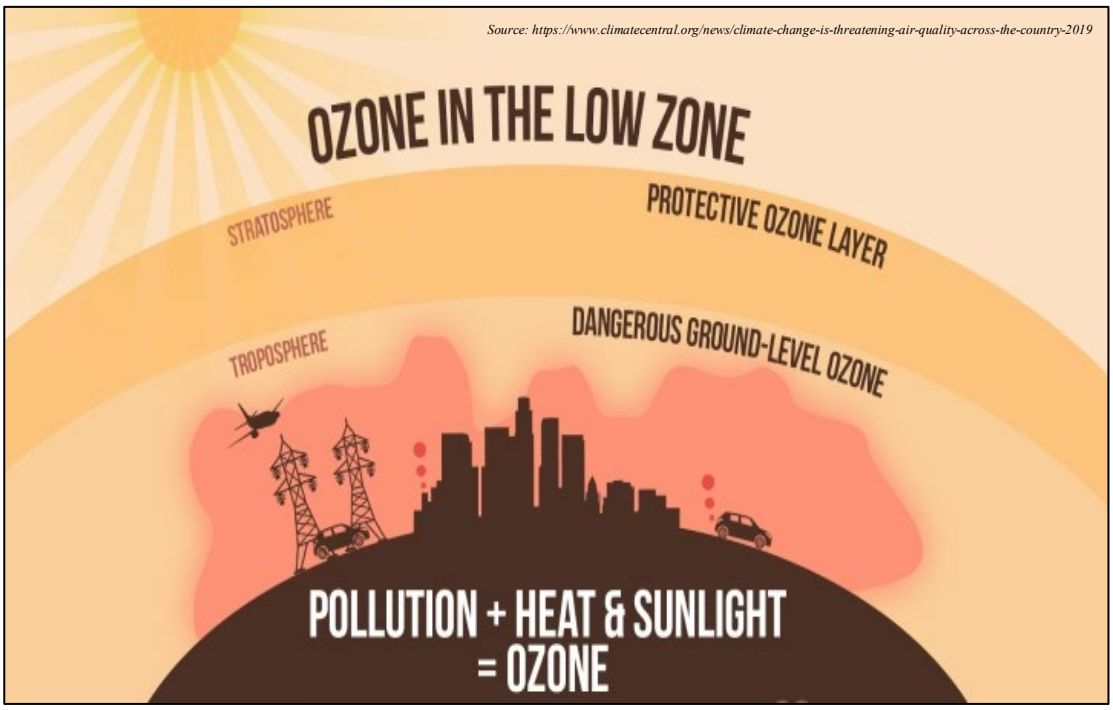
Ground-Level Ozone (i.e. Smog)

destroyed by manmade chemicals, causing what is sometimes referred to as the "hole in the ozone layer." Stratospheric ozone is not addressed within the 2022 RAQS.

Conversely, ground-level ozone, often called smog or "bad" ozone, is formed by photochemical reactions of precursor chemicals (VOC and NOx) in the presence of sunlight and heat. Found at ground level, as shown in Figure 1 (Types of Ozone in the Atmosphere), this type of ozone is a harmful air pollutant because of its effects on people and the environment. Ground-level ozone is addressed within the 2022 RAQS.

Exposure to ground-level ozone can damage the lungs and aggravate respiratory conditions such as asthma, bronchitis, and emphysema. Motor vehicles and industrial operations are the largest sources of ozone precursors in San Diego County. Emissions of ozone precursors have greatly declined in recent decades in San Diego County. As a result, countywide ozone levels and population exposure to harmful levels of smog have substantially decreased.

Figure 1
Types of Ozone in the Atmosphere



Despite this progress, San Diego County does not yet attain state and national ozone standards. This is primarily due to progressively more stringent standards being set by state and federal agencies. Warmer than normal temperatures in recent years have also resulted in increased ozone formation. To achieve state

ozone standards, further emission reductions of ozone precursors (VOC and NOx) are necessary.

POLLUTANTS INDIRECTLY ADDRESSED IN THE 2022 RAQS

The 2022 RAQS will also result in indirect emission reductions of the following air pollutants:

Greenhouse Gases (GHGs)

The principal GHGs that contribute to global warming and climate change include carbon dioxide, methane, nitrous oxide, black carbon, and fluorinated gases. In order to avoid the most hazardous forecasted climate change scenarios, the region must substantially reduce GHG emissions. It is especially important to reduce GHG emissions with very high global warming potential, such as methane, black carbon, and fluorinated gases, which the California Air Resources Board (CARB) refers to as "short-lived climate pollutants" (SLCPs).

GHGs

While some GHGs occur naturally, others are produced by human activities. Stratospheric (or "good") ozone, for example, is naturally found in the upper atmosphere and is technically considered a GHG. However, in the upper atmosphere, it is helpful in blocking ultraviolet (UV) light that is harmful to humans, animals, and plants, and thus its protective benefits far outweigh ozone's minimal contribution as a GHG.

Particulate Matter (PM)

PM (also known as $PM_{2.5}$ or PM_{10} depending on particle size) is a diverse mixture of suspended particles and liquid droplets (aerosols) that are harmful to the health of humans. Exposure to PM, on either a short-term or long-term basis, can cause a wide range of respiratory and cardiovascular health effects, including strokes, heart attacks, and premature deaths. Dust (e.g. roadway, building, and construction), residential and commercial fuel combustion activities (e.g. wood and natural gas), and commercial charbroiling are the primary sources of $PM_{2.5}$ in San Diego County.

PM

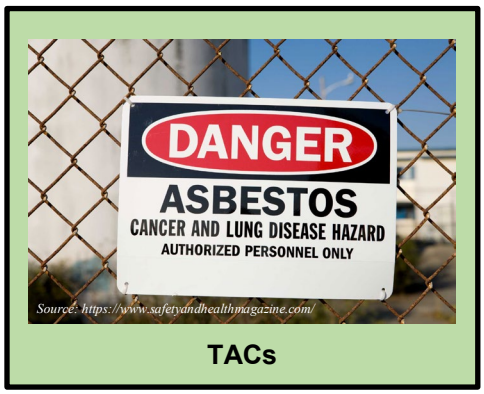
Emissions and ambient concentrations of PM have been greatly reduced in San Diego County, and now consistently show daily and annual average levels that

meet state standards.[8] Despite this progress, some communities within San Diego County are still impacted by localized concentrations of PM, primarily from diesel-fueled vehicles. Health studies also note negative health impacts associated with exposure to PM, even at levels below current standards. Consequently, the region must strive to continue reducing PM emissions as expeditiously as possible.

OTHER DISTRICT PLANS AND PROGRAMS

The District addresses other pollutants through separate District Plans and programs, as required by state or federal law. These pollutants include the following:

Toxic Air Contaminants (TACs)



TACs

TACs are a class of pollutants that include hundreds of chemicals hazardous to human health. Long-term exposure to TACs may cause more severe health effects such as neurological damage, hormone disruption, developmental defects, and cancer. Examples of TACs include, but are not limited to: diesel PM, Hexavalent Chromium, Ethylene Oxide, Dioxins, and Asbestos. Control over such substances is governed locally through implementation of District Regulation XII-series rules,[9] as well as the District's Air Toxic "Hot Spots" Program.[10] TAC emissions and exposure are highly localized, and are a key criterion that the District uses to identify communities that are disproportionally impacted by air pollution.

As a commitment to reducing risk from TACs, on November 4, 2021, the Governing Board adopted Rule 1210 (Toxic Air Contaminant Health Risks – Public Notification and Risk Reduction) which lowered the cancer risk reduction threshold countywide. Cancer risk, for the purposes of the District's rules, represents the highest risk calculated for an individual living, working, or attending a school near a facility that emits TACs. When calculated, the risk threshold estimates the probability that an individual will develop cancer as chances in one a million during their lifetime. Prior to 2021, the threshold was 100 in one million. However, revisions to District Rule 1210 made in 2021 reduced the risk threshold to 10 in one million, representing a reduction of 90%. As a result, up to 25 additional facilities countywide will need to reduce their cancer risk threshold within the next few years to the new cancer risk threshold level. By doing so, exposure to TACs should be significantly decreased.

The District will continue working to reduce TACs through implementation of District rules, as well as implementation of the longstanding "Hot Spots" program. Because these programs/pollutants are covered through other District processes,

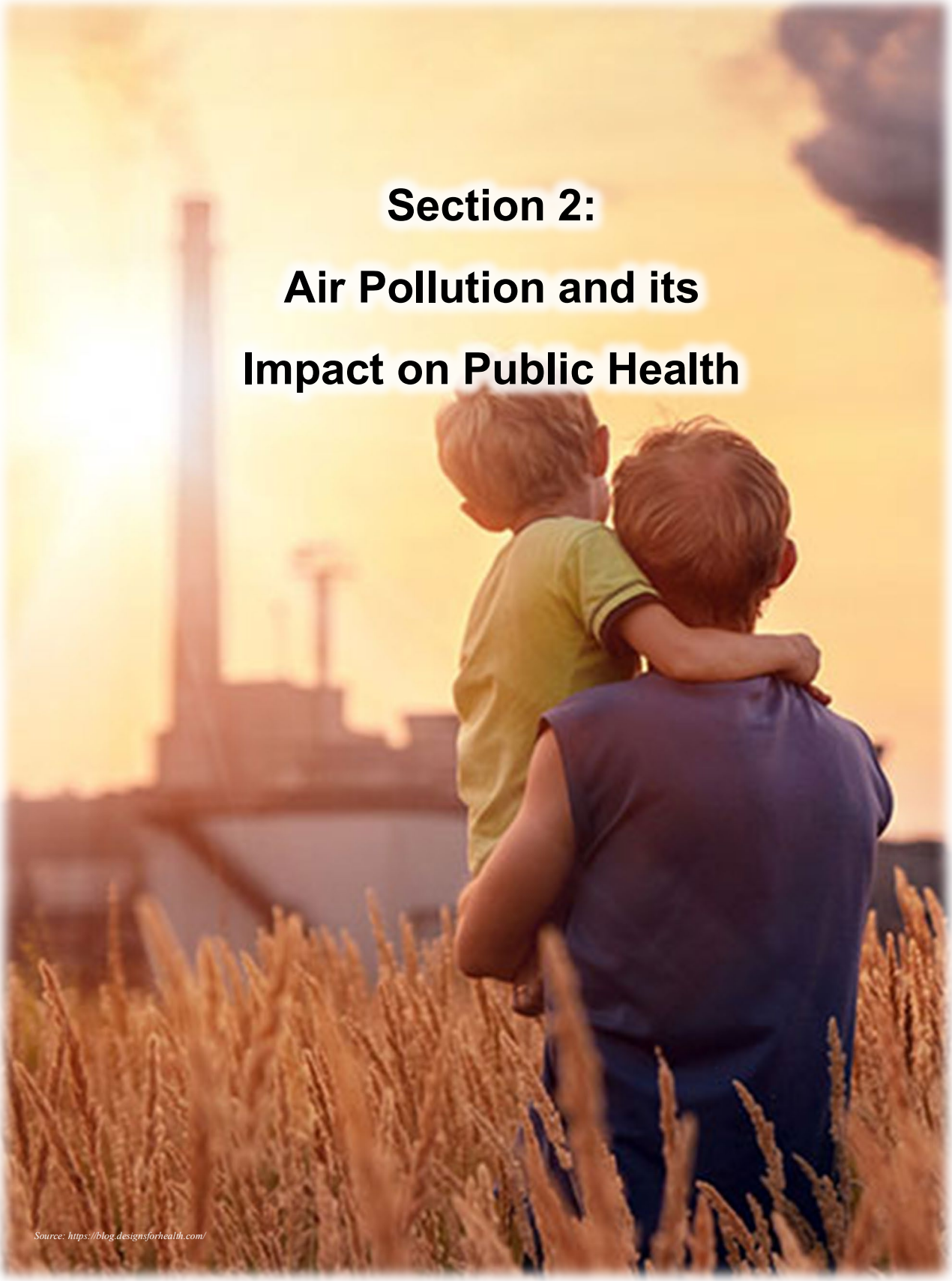
and generally do not have a direct nexus to ozone formation, TACs are not addressed within the 2022 RAQS.

ATTACHMENTS

- Attachment A contains statutory requirements associated with the 2022 RAQS, and a description of how they fit within the subsequent rule development process.
- Attachments, B, C, and D contain further statutory requirements required for the RAQS, including ozone pollution historical trends and projections, regional emission reduction rates, air quality and exposure indicators, and Expected Peak Day Concentration (EPDC) data for San Diego County.
- Attachment E describes analytical tools used by local air districts and CARB to determine attainment of state ozone standards.
- Attachment F contains ozone scores for each census tract in San Diego County (as determined by CalEnviroscreen).
- Attachment G describes ozone precursor rules that have been adopted/amended by the District since the previous 2016 RAQS Revision.
- Attachment H describes proposed measures that are scheduled for possible adoption/amendment by the District over the next three years.
- Attachment I describes proposed measures that require further evaluation by the District over the next three years, and which could potentially be scheduled for possible adoption in a future RAQS Revision.
- Attachment J contains information pertaining to the District's incentives program.
- Attachment K contains an update on implementation of regionwide Transportation Control Measures (TCMs).
- Attachment L contains the District's updated No Net Increase Demonstration.
- Attachment M contains a glossary of common air quality terms and acronyms.
- Attachment N contains all end notes found throughout the 2022 RAQS.

MOVING FORWARD

The 2022 RAQS provides a comprehensive strategy to improve air quality, protect public health, and assist in protecting the climate, utilizing tools and resources available to the District. It will reduce air pollutant and GHG emissions in the near term, investigate new opportunities in the long-term, and contribute to the region's long-term transformation to a carbon neutral future. As the region transitions to be 'net zero' (or carbon neutral) by 2045, as further described in the San Diego County Regional Decarbonization Framework,[11] the region overall can better discern the complementary policies, actions, and strategies organizations must take. To collaborate on the implementation of these strategies, the District will continue working and fostering relationships with government agencies, environmental and community groups, non-profits, the business sector, academic institutions, tribal nations, and San Diego County residents, to ensure successful implementation. These actions will ensure San Diego County remains a leader in technological innovation, improved public health, and social equity to transform our region.


Section 2:
Air Pollution and its
Impact on Public Health
Source: https://blog.designsforhealth.com/

HIGHLIGHTS

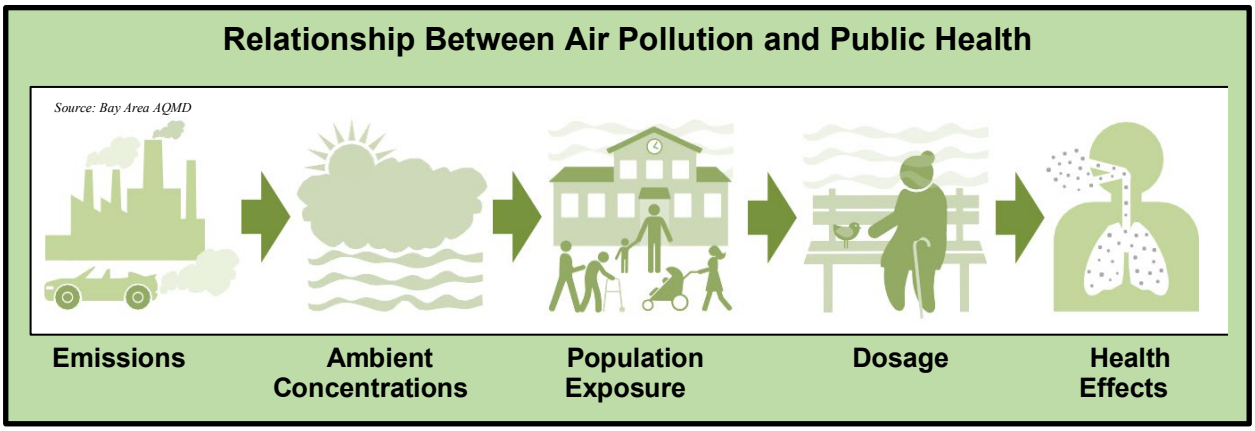
- Exposure to unhealthy levels of ozone and other air pollution can cause a variety of health effects. These include lung and airway inflammation, significant decreases in lung function and capacity, coughing and pain when taking a deep breath, asthma, bronchitis, and emphysema.
- Sensitivity to air pollution varies widely among individuals. However, children, pregnant women, seniors, people with pre-existing health conditions, and anyone working, exercising, or playing outdoors, are at greater risk from exposure.
- The amount of emissions, ambient concentrations, population exposure, dosage, and overall health of the individual, all play a significant role in health effects.
- CARB and the EPA set state and national standards for a number of air pollutants to protect public health in response to the latest science and technical studies.
- The District monitors the levels of these pollutants throughout San Diego County, and tracks such data to guide future work and ensure the region maintains progress in reducing air pollution and achieving state and national standards.

The District is committed to improving health by reducing regional and localized air pollution and human exposure to harmful pollutants, in particular within impacted under-resourced communities. As such, the 2022 RAQS is comprised of a multi-pollutant strategy to directly reduce emissions of ozone precursors (VOC and NOx), and as a co-benefit, indirectly reduce emissions of PM and GHGs. The following section describes how air pollution impacts public health. It also describes San Diego County's current status in relation to attaining state and national standards to protect public health, and profiles each pollutant and their primary health effects. Attachments B, C, and D further describe the major sources of ozone precursor emissions, progress made in achieving ozone standards in recent decades, as well as trends in ozone emissions and regional concentrations. Climate pollutants, such as GHGs, and the interplay between climate change and air quality, is further discussed in Section 4.

HOW AIR POLLUTION IMPACTS YOUR HEALTH

Research has concluded that exposure to unhealthy levels of ozone and other air pollution can cause a variety of health effects. These include lung and airway inflammation, significant decreases in lung function and capacity, coughing and pain when taking a deep breath, asthma, bronchitis, and emphysema. As with any health issues, some people are more sensitive than others. With respect to effects from ozone, children, pregnant women, seniors, people with pre-existing disease, and anyone working, exercising, or playing outdoors are at greater risk.[12] That said, significant improvements in air quality have been achieved over the past decades in San Diego County, and as a result, public health has greatly benefitted.

The relationship between air pollution and public health is comprised of five major components, as summarized below:



Emissions

Emissions represent the amount of a pollutant released into the atmosphere from a specific source and time interval. A variety of sources emit air pollutants that react in the atmosphere to form ozone. Emission sources include: (1) Stationary sources such as factories, power plants, chemical plants, landfills, gas stations, dry cleaners, coating operations, stationary engines, and industrial-sized boilers and furnaces, (2) Mobile sources such as cars, trucks, aircraft, locomotives, marine vessels, and most farm/construction/military equipment, and (3) Areawide sources such as consumer products, fireplaces, and residential-sized water heaters and furnaces. Identification of these emission sources is the first step to developing strategies to reduce emissions from such sources. Consequently, local air districts, CARB, and the U.S. Environmental Protection Agency (EPA), develop emission inventories to quantify the emissions of key air pollutants by source category.[13]

Ambient Concentrations

Ambient concentration refers to the level of pollutants (or emissions) that are measured in the air. It is a term generally used to express values of air quality that can be compared to limits set by regulation. The relationship between emissions and ambient concentrations of ozone is complex and depends on many factors, which include: (1) meteorological conditions, such as temperature, wind speed and direction, (2) the ratio of VOC to NOX in the atmosphere, and (3) regional topography. Ambient concentrations of ozone are regional in scale, while concentrations for PM and TACs can vary greatly within a small geographic area. Consequently, the District, CARB, and EPA maintain an extensive air monitoring network to measure ambient

concentrations of air pollutants throughout San Diego County. The District also uses scientific modeling to improve the region's understanding of existing and future emissions and ambient concentrations.

Population Exposure

This term refers to the amount of air pollution that an individual or population is exposed to, and the frequency and duration of that exposure. Individual exposure to air pollution widely varies, being dependent on where people live, work, and play. Total population exposure, however, is greater in urban areas due to higher population densities. More information about human exposure to ozone can be found in Attachment C (Air Quality and Exposure Indicators).

Dosage

This term refers to the actual amount of pollution an individual takes into the body. The dosage from a given level of exposure will vary by individual depending on their age, activity, and metabolic rate. For example, people that exercise (especially children) can receive higher dosages from an exposure because they are breathing deeper and faster. Activity patterns, frequency of time outside, or time spent driving on congested roadways, also play a factor and will vary from person to person. Dosage occurs primarily through breathing but can also occur through eating or by absorption through the skin.

Health Effects

Air pollution can cause or contribute to a wide range of health effects and illnesses, depending on the individual exposure and tolerance to air pollution. Just as individual exposure differs, so does the ability of the body to tolerate exposure to air pollutants. Though the District is concerned about the health of all residents in San Diego County, there is particular concern for reducing population exposure for the most vulnerable to air pollution, including children, pregnant women, seniors, and people with existing cardiovascular or respiratory conditions. As summarized in Table 1 (Air Pollutant Health Impacts), exposure to air pollution can cause a wide range of short-term (acute) and long-term (chronic) health effects.

Table 1
Air Pollutant Health Impacts

Pollutant	Constituents/ Precursors	Main Sources	Scale	Peak Levels	Health Impacts	Other Impacts
Ozone	VOC	• Mobile Sources • Evaporation of petroleum and solvents • Consumer products	Regional	Summer	• Aggravated asthma • Acute bronchitis • Chronic bronchitis • Respiratory symptoms • Decreased lung function • Heart attacks • Premature mortality	• Property damage: Tires, paints, building surfaces • Damage to crops • Nitrogen deposition to land and waterways
	NOx	• Mobile sources • Other combustion				
$PM_{2.5}$	Direct emissions from combustion	• Wood burning • Diesel engines • Gasoline engines • Burning natural gas • Commercial cooking	Local and Regional	Winter	• Aggravated asthma • Respiratory symptoms • Increased blood pressure • Decreased lung function • Heart disease • Stroke • Premature mortality	• Regional haze • Acid deposition • Water pollution
	VOC	See VOC above				
	NOx	See NOx above				
	Ammonia (NH_3)	• Landfills • Livestock • Wastewater treatment • Refineries				
	SO_2	• Petroleum refining • Ships				
Toxic Air Contaminants (TACs)	Diesel PM Benzene 1,3 Butadiene Formaldehyde Acetaldehyde	• Diesel engines • Gasoline engines • Construction equipment • Ships and boats	Local	Year-round	• Acute non-cancer • Chronic non-cancer • Lung cancer • Leukemia • Premature mortality	• Water pollution
Greenhouse Gases (GHGs)	Carbon Dioxide (CO_2) Methane (CH_4) Nitrous Oxide (N_2O) Hydrofluorocarbon Perfluorocarbon Sulfur Hexafluoride Black Carbon	• Fossil fuel combustion • Production of fossil fuels (e.g., oil refining) • Mobile sources • Electricity generation	Global	Year-round	• Potentially increased ozone levels • Disease vectors • Effects from prolonged heat waves	• Climate change • Rising sea levels • Acidification of oceans • Species extinction • Drought • Wildfires

DEFINING AMBIENT CONCENTRATIONS AND STANDARDS

Criteria air pollutant standards are generally defined in terms of ambient concentration of a pollutant in the atmosphere. Ozone standards are expressed either in a parts per million (ppm) or parts per billion (ppb) ratio, while PM standards are usually expressed in a mass per volume basis (micrograms per cubic meter, or $\mu g/m^3$). Standards may also be established for different time intervals, ranging from hourly to annual averages. Determining whether the region attains a given state or national standard requires comparing measured ambient concentrations against the given standard, called a "design value". A region's "design value" is calculated based on how the standard is defined. For ozone, a region attains the standard when the region's "three-year average" of the "annual fourth highest daily maximum" eight-hour average ozone concentration (i.e., design value) is less than the standard. Descriptions and examples of pollutants for which there are state or national standards in place are shown in Figure 2 (Ambient Air Quality Standard Pollutants and Descriptions).

1. Monitor A has three years of complete data:

Eight-Hour Ozone	2013	2014	2015
Maximum Peak	87	85	86
2nd Highest Peak	85	83	80
3rd Highest Peak	70	78	75
4th Highest Peak	69	73	72

2. Mean of the 4th highest peak from each year

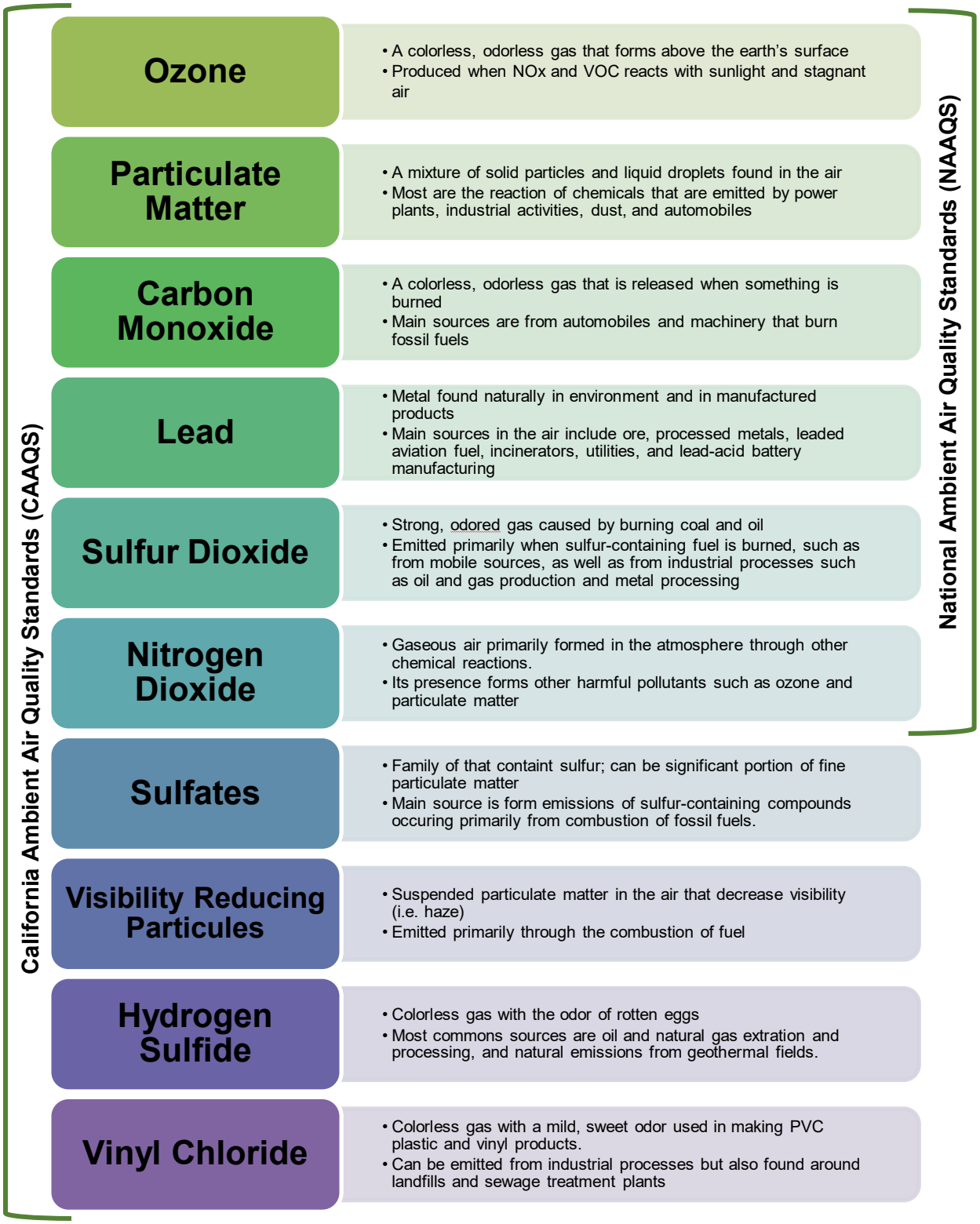
$$\frac{69 + 73 + 72}{3} = 71.334$$

3. Now truncate the average $71.\cancel{334} = \mathbf{71\ ppb}$

Source: https://slideplayer.com/slide/8821003/

An example of how to calculate a region's ozone design value calculation for 2015.

Figure 2
Ambient Air Quality Standard Pollutants and Descriptions

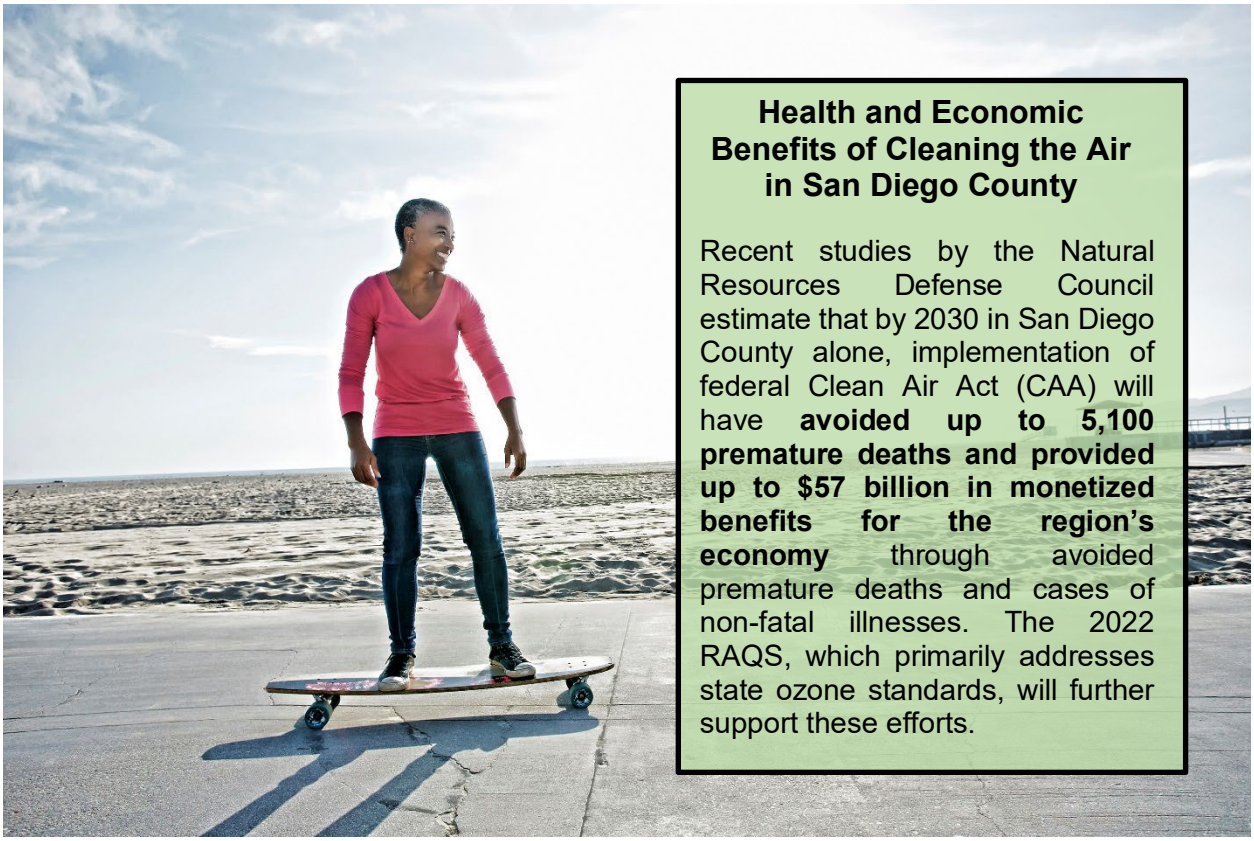


National Ambient Air Quality Standards

Pursuant to the federal Clean Air Act (CAA),[14] the EPA has established the National Ambient Air Quality Standards (NAAQS) for six common, yet harmful, outdoor air pollutants in order to protect public health and the environment. These include ground level ozone, particulate matter, carbon monoxide, lead, sulfur dioxide, and nitrogen dioxide. Each area of the nation with air pollution levels exceeding a national ambient air standard must be designated by the EPA as a federal "Nonattainment Area" for that standard, and must submit a "State Implementation Plan" (SIP) outlining the combination of local, state, and federal actions/emission control regulations necessary to bring the area into attainment by federal CAA deadlines.

Further, the EPA classifies national ozone nonattainment areas as Marginal, Moderate, Serious, Severe, or Extreme, depending on the severity and persistence of the region's ozone problem. Areas with greater air pollution levels place people at a greater risk of harm, and subsequently must adopt ever more stringent air pollution control measures. These generally include enhanced rules designed to limit emissions of air pollutants. Areas with the highest air pollution levels are given added time to attain a NAAQS in recognition of greater challenges to attain, such as requiring new technologies to further reduce air pollutant emissions.

San Diego County is currently designated as a Severe Nonattainment Area for the national 2008 ozone NAAQS (0.075 parts per million, or ppm) and 2015 ozone NAAQS



Health and Economic Benefits of Cleaning the Air in San Diego County

Recent studies by the Natural Resources Defense Council estimate that by 2030 in San Diego County alone, implementation of federal Clean Air Act (CAA) will have **avoided up to 5,100 premature deaths and provided up to $57 billion in monetized benefits for the region's economy** through avoided premature deaths and cases of non-fatal illnesses. The 2022 RAQS, which primarily addresses state ozone standards, will further support these efforts.

(0.070 ppm). Accordingly, on January 8, 2021, the District prepared and submitted an Attainment Plan to the EPA addressing federal CAA requirements for both the 2008 and 2015 ozone NAAQS (i.e., 2020 Plan).[15] The 2020 Plan included scientific forecasts demonstrating attainment of the 0.070 ppm standard in San Diego County by 2032. The 2020 plan is now being reviewed by the EPA.

State Ambient Air Quality Standards

California Ambient Air Quality Standards (CAAQS), otherwise known as state air quality standards, are determined by CARB based on input from the Office of Environmental Health Hazard Assessment (OEHHA). They include the six outdoor pollutants covered by the NAAQS, but also include Sulfates, Visibility Reducing Particles, Hydrogen Sulfide (H_2S), and Vinyl Chloride. Descriptions and examples of these are shown in Figure 2 (Ambient Air Quality Standard Pollutants and Descriptions).

Generally speaking, CAAQS are more stringent than NAAQS. Though NAAQS have been continually developed and made more stringent at the national level, the California Clean Air Act (CCAA) of 1988[16] continues to mandate the development and attainment of CAAQS. While attainment of the CAAQS is critical for continued progress, attainment of the NAAQS for a region usually takes precedence over attainment of the CAAQS. This is due to federal penalties such as sanctions to withhold regional federal highway funding for failing to adhere to national attainment deadlines. The CCAA also requires areas that are designated nonattainment for a CAAQS[17] to prepare and implement state plans to attain the CAAQS by the earliest practicable date,[18] rather than specific deadlines that are required by national standards pursuant to the federal CAA.

San Diego County is currently designated as a nonattainment area for the ozone CAAQS. Accordingly, the 2022 RAQS specifically addresses state ozone planning requirements, pursuant to the CCAA. All other CAAQS have been attained.[19] Thus, the RAQS statutorily identifies feasible emission control measures and provides expeditious progress toward attaining the state ozone standards.

Attainment Status of San Diego County

Table 2 (State and National Ambient Air Quality Standards and Attainment Status) summarizes the current national and state air quality standards, the region's attainment status, and current regional design values as applicable. The District uses a variety of tools and analytical techniques to measure and characterize emissions and ambient concentrations of air pollutants, and to estimate the effects of air pollution on the health of San Diego County residents. Key analytical tools that are used to determine attainment include the region's extensive air quality monitoring network, emission inventories, and photochemical modeling, are described in more detail in Attachment E (Analytical Tools Used to Determine Attainment). In some cases, the EPA and CARB cannot determine at the time of designations whether an area is in attainment or nonattainment for a specific pollutant, primarily due to a lack of available data. In such circumstances, both agencies designate regions as "Unclassified" or Unclassifiable", meaning they could not conclude whether the area attained or not.

Table 2
State and National Air Quality Standards and Attainment Status

Pollutant	Averaging Time	Design Value (2021)	California Standard (CAAQS)	CAAQS Attainment Status	National Standard (NAAQS)	NAAQS Attainment Status
Ozone (O_3)	1-hour	0.102 ppm	0.09 ppm	Nonattainment	0.12 ppm	Attainment
	8-hour	0.078 ppm	0.070 ppm	Nonattainment	0.08 ppm	Attainment
	8-hour				0.075 ppm	Nonattainment
	8-hour				0.070 ppm	Nonattainment
Carbon Monoxide (CO)	1-hour	3.1 ppm	20 ppm	Attainment	35 ppm	Attainment
	8-hour	1.7 ppm	9 ppm	Attainment	9 ppm	Attainment
Particulate Matter (PM2.5)	24-hour	24 µg/m3			35 µg/m3	Attainment
	Annual	9.6 µg/m3	12 $\mu g/m^3$	Nonattainment[20]	12 $\mu g/m^3$	Attainment
Particulate Matter (PM10)	24-hour	122 µg/m3	50 $\mu g/m^3$	Nonattainment	150 $\mu g/m^3$	Unclassifiable
	Annual	22.3 µg/m3	20 $\mu g/m^3$	Nonattainment		
Sulfur Dioxide (SO_2)	1-hour	0.001 ppm	0.25 ppm	Attainment	0.075 ppm	Attainment
	24-hour	0.001 ppm	0.04 ppm	Attainment	0.14 ppm	Attainment
	Annual Arithmetic Mean				[21]	
Nitrogen Dioxide (NO_2)	1-hour	0.050 ppm	0.18 ppm	Attainment	0.100 ppm	Attainment
	Annual	0.013 ppm	0.030 ppm	Attainment	0.053 ppm	Attainment
Lead	Calendar quarter	0.02 µg/m3	0.15 $\mu g/m^3$	Attainment	1.5 $\mu g/m^3$	Attainment
	3-month rolling average	0.02 µg/m3			0.15 $\mu g/m^3$	Attainment
Sulfates	24-hour	[22]	25 $\mu g/m^3$	Attainment		
Hydrogen Sulfide	1-hour		0.03 ppm	Unclassified		
Visibility Reducing Particles	24-hour		0.01 ppm	Unclassified		

Section 3:

Ozone Pollution and Under-Resourced Communities

HIGHLIGHTS

- Historical inequities have resulted in certain communities in San Diego County being disproportionally impacted by a combination of economic, health and environmental burdens, including air quality concerns. Addressing such environmental justice concerns, especially with respect to ozone formation, requires swift and sustained actions over time to reduce precursors of ozone (VOC and NOx), both on a localized and regional level.
- Several areas of San Diego County are officially designated by California as disadvantaged communities. These include areas along the San Diego Bay waterfront ("Portside" community), the San Ysidro/Otay Mesa communities along the International Border with Mexico, and parts of El Cajon. Other areas, such as tribal lands, also are impacted.
- District ozone air monitoring have generally documented ozone levels that meet the state and federal standards in recent years in each of the formally designated impacted areas. That said, such areas can and do still exceed state and national ozone standards on certain days and meteorological conditions.
- Further reducing ozone levels in these areas is best addressed through a regional air quality plan such as the 2022 RAQS, as well as the region's federal 2020 Ozone Plan. More localized actions, such as those being implemented through the region's AB 617 Community Emissions Reduction Plan (CERP), and the Port of San Diego's Maritime Clean Air Strategy (MCAS) will assist in further ozone emission reductions.
- The actions proposed in this 2022 RAQS, as well as the actions already in place at the local, state, and federal levels, should result in lower ambient ozone levels and fewer exceedances of state ozone standards in the future for all regions of San Diego County.

Historic inequities created at various levels of government have resulted in substantial impacts to specific communities in San Diego County and nationwide. These inequities, such as the practice of redlining, systemic racism, and the taking of tribal lands by settlers, have resulted in areas of San Diego County being disproportionately impacted by a combination of economic, health, and environmental burdens. Such burdens include poverty, high unemployment, air and water pollution, presence of hazardous waste, and high rates of asthma and heart disease.

Addressing these environmental justice concerns requires both expedient and sustained long-term efforts at all government levels. The District, like other local governmental organizations, must also prioritize equitable solutions to improve and protect air quality for residents in these communities, in particular for children, people with low-income and/or disabilities, seniors, communities of color, and federally recognized Native American tribes. Doing so will result in a region that is healthier, more inclusive, and equitable.

District Equity Statement

The District is committed to achieving environmental justice and equity by striving towards clean air for all. While we have made important progress in improving air quality for the region as a whole, we recognize that there is more work to be done, especially in communities that have been disproportionally burdened by air pollution because of systemic racism, discriminatory government policies, lack of engagement, and poor access to information and to the decision-making process.

The District commits to advancing policies, programs, and services that achieve environmental justice and equity. In order to meet this commitment, the District will provide appropriate resources, timelines, and budget to support staff and enhance public participation. The District has adopted an Environmental Justice Framework and a Public Participation Plan that will guide the agency in its work to improve information access, promote meaningful public engagement, and address environmental injustices, particularly for under-resourced communities.

STATE DESIGNATED DISADVANTAGED COMMUNITIES IN SAN DIEGO COUNTY

In 2012, the California state legislature passed Senate Bill (SB) 535,[23] which directed the California Environmental Protection Agency (CalEPA) to identify disadvantaged communities statewide for investment opportunities through the California Greenhouse Gas Reduction Fund (GGRF). The legislation gave CalEPA the sole responsibility for identifying such communities. To do this, the California Office of Environmental Health Hazard Assessment (OEHHA) created the CalEnviroscreen tool in 2013 to evaluate the burden of pollution from multiple sources in communities across California, while accounting for potential vulnerability to the adverse effects of pollution of all types (air, water, etc.). The tool ranks census tracts in California based on potential exposures to pollutant, adverse environmental conditions, socioeconomic factors, and the prevalence of certain health conditions.

In 2014, CalEPA released its initial list of disadvantaged communities for the purposes of fulfilling SB 535 requirements. This process designated each community scoring in the top 25% of census tracts statewide as a disadvantaged community.[24] Since that time, updated data and additional indicators have been added to the CalEnviroScreen tool, resulting in additional versions to be released in 2017 (Version 3.0) and 2021 (Version 4.0). With each revision of the tool, scores for each census tracts are re-calculated to determine the most up-to-date 25% highest scoring census tracts statewide. Scoring from CalEnviroScreen Version 4.0 for San Diego County census tracts can be seen in Figure 3 (CalEnviroScreen 4.0 Census Tract Scores in San Diego County) on the following page and Attachment F (San Diego County CalEnviroscreen 4.0 Scores and Ozone Percentiles by Census Tract). Identified communities within San Diego County scoring in the top 25% statewide can be seen in Figure 4 (San Diego County Communities identified in the Top

25% Highest Scoring Communities Statewide in CalEnviroScreen 4.0) on the following pages.

Census tracts denoted in red in Figure 4 are officially designated as disadvantaged communities statewide using CalEnviroScreen 4.0. These include neighborhoods in the Portside community (which include Barrio Logan, Logan Heights, Sherman Heights, and West National City), parts of Chula Vista, communities around the Interstate 15 / Interstate 805 / State Highway 94 corridors, as well as east El Cajon and parts of San Ysidro. Areas denoted in blue in Figure 4 (such as a portion of San Ysidro directly adjacent to the International Border) are also recognized as a disadvantaged community by CARB.[25]

Improving existing conditions is essential to improving air quality in impacted communities throughout San Diego County

Figure 3
CalEnviroScreen 4.0 Census Tract Scores in San Diego County

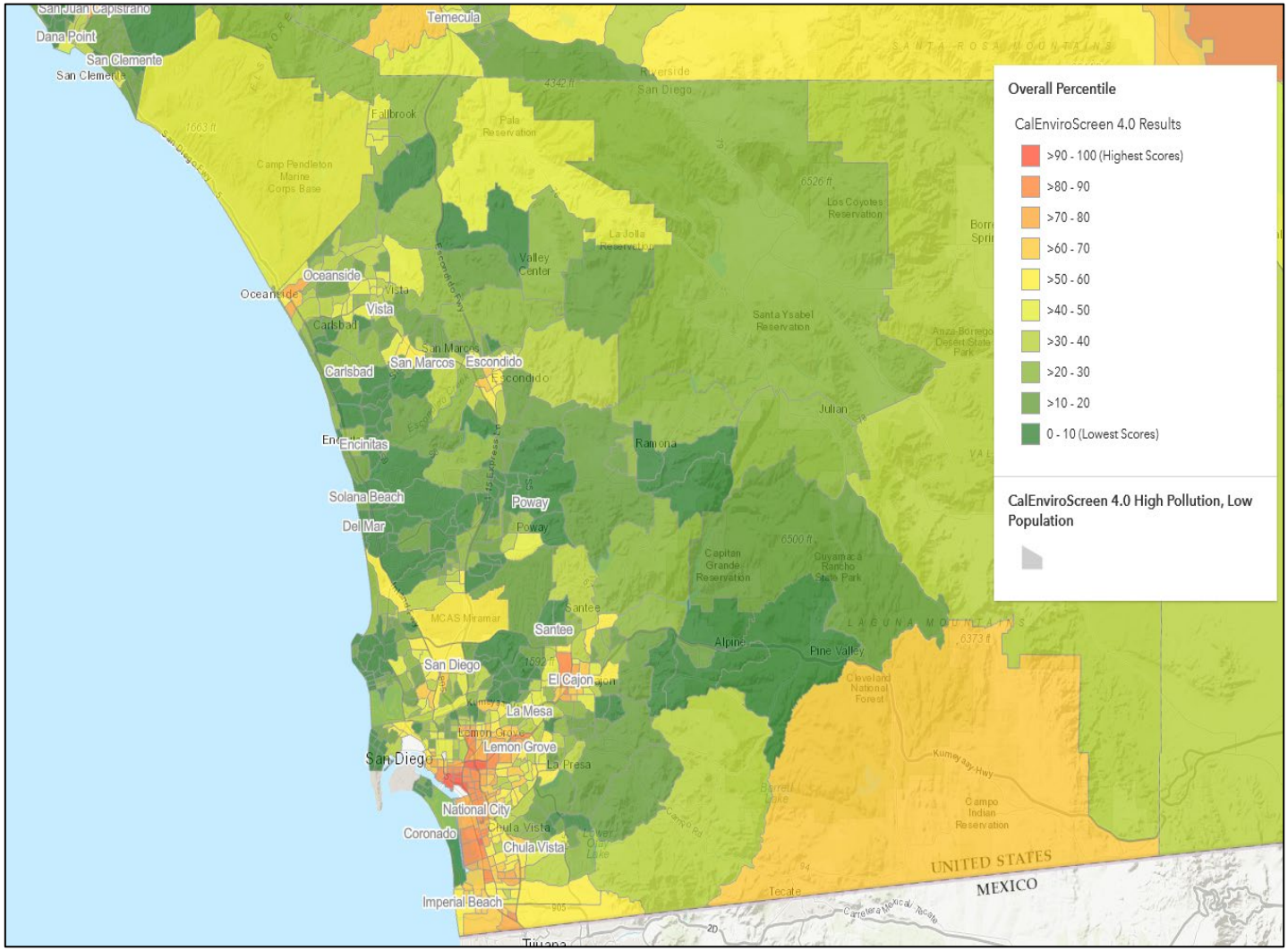
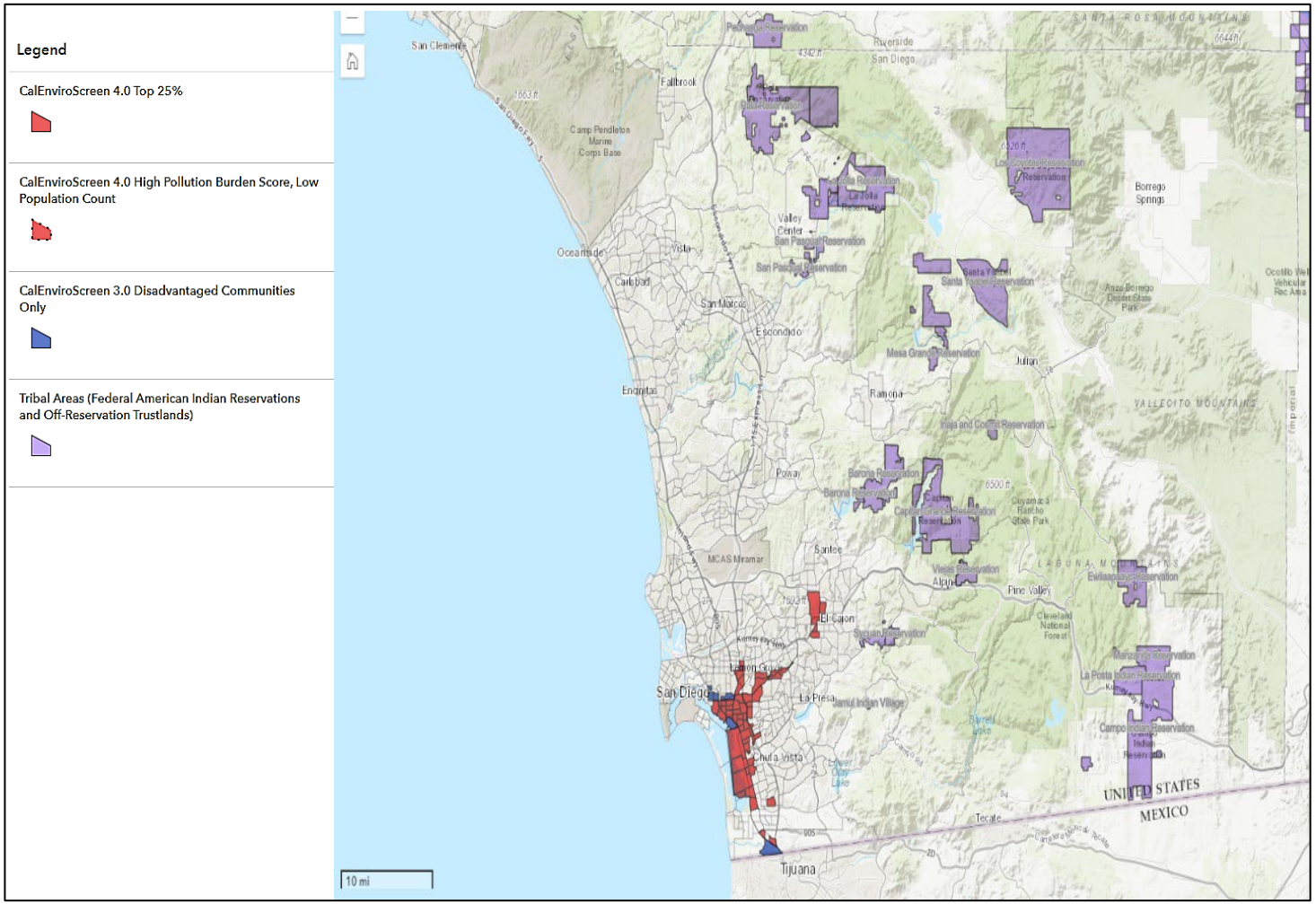
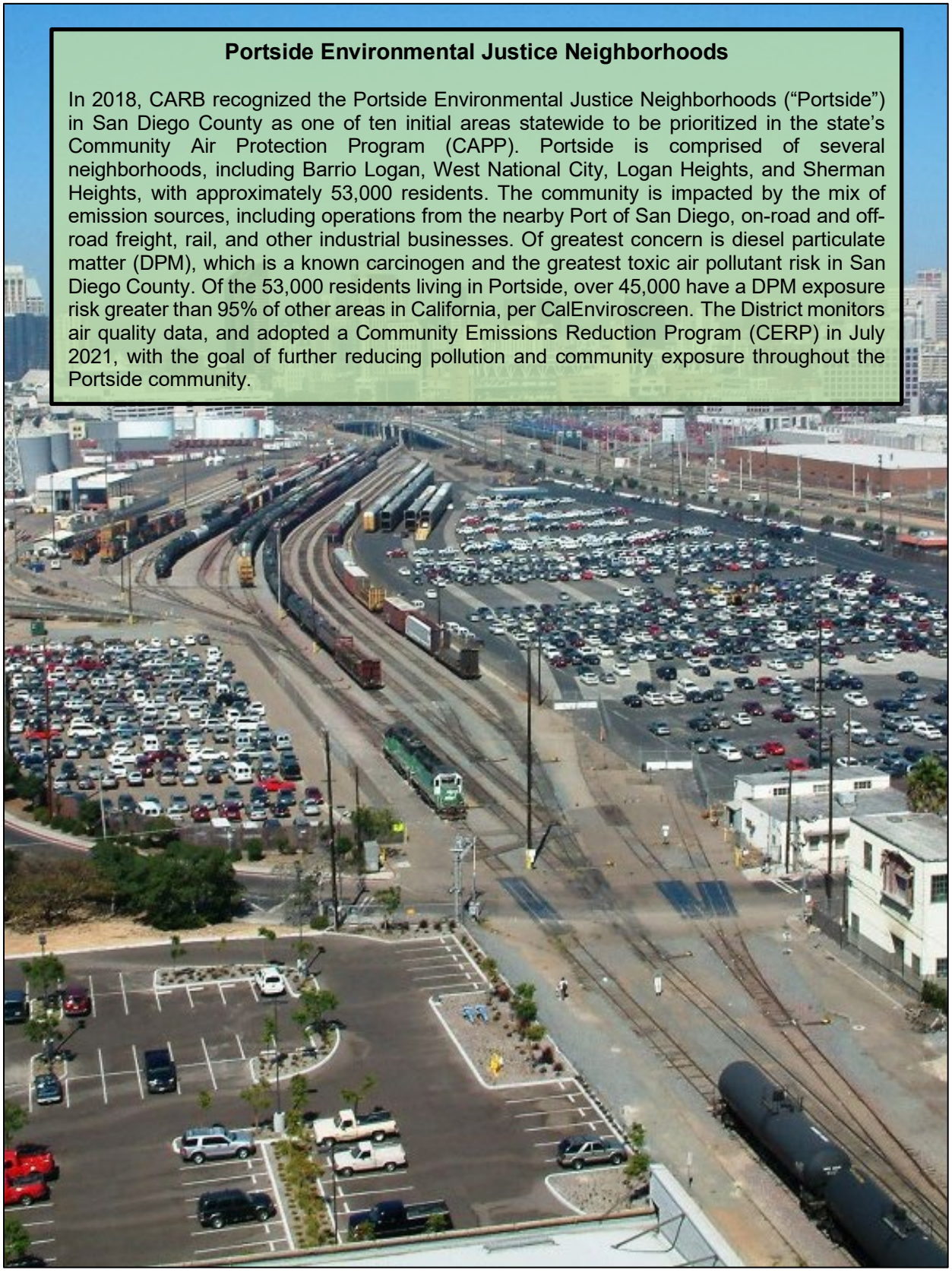


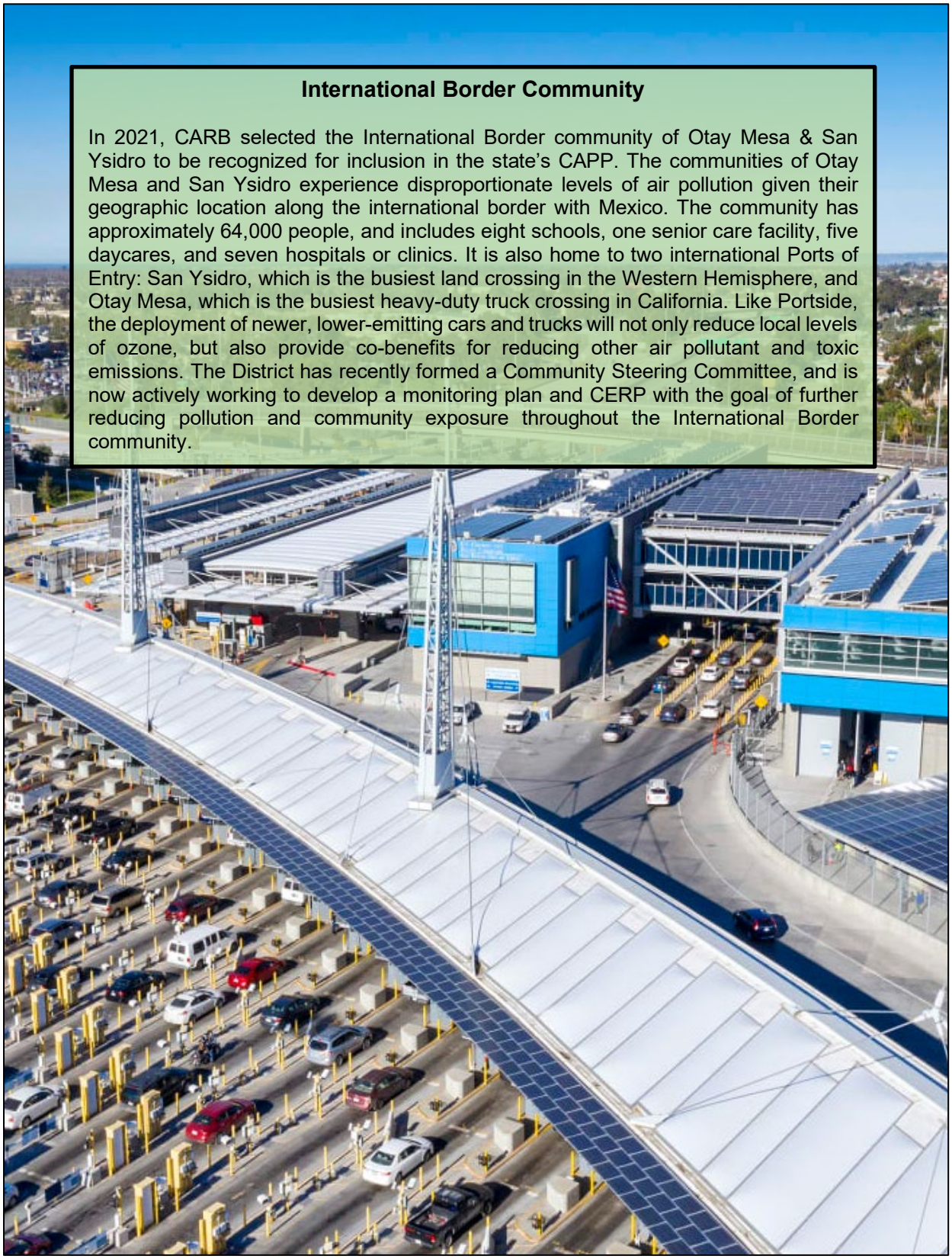
Figure 4
San Diego County Communities identified in the Top 25% Highest Scoring Communities Statewide in CalEnviroScreen 4.0





Portside Environmental Justice Neighborhoods

In 2018, CARB recognized the Portside Environmental Justice Neighborhoods ("Portside") in San Diego County as one of ten initial areas statewide to be prioritized in the state's Community Air Protection Program (CAPP). Portside is comprised of several neighborhoods, including Barrio Logan, West National City, Logan Heights, and Sherman Heights, with approximately 53,000 residents. The community is impacted by the mix of emission sources, including operations from the nearby Port of San Diego, on-road and off-road freight, rail, and other industrial businesses. Of greatest concern is diesel particulate matter (DPM), which is a known carcinogen and the greatest toxic air pollutant risk in San Diego County. Of the 53,000 residents living in Portside, over 45,000 have a DPM exposure risk greater than 95% of other areas in California, per CalEnviroscreen. The District monitors air quality data, and adopted a Community Emissions Reduction Program (CERP) in July 2021, with the goal of further reducing pollution and community exposure throughout the Portside community.



International Border Community

In 2021, CARB selected the International Border community of Otay Mesa & San Ysidro to be recognized for inclusion in the state's CAPP. The communities of Otay Mesa and San Ysidro experience disproportionate levels of air pollution given their geographic location along the international border with Mexico. The community has approximately 64,000 people, and includes eight schools, one senior care facility, five daycares, and seven hospitals or clinics. It is also home to two international Ports of Entry: San Ysidro, which is the busiest land crossing in the Western Hemisphere, and Otay Mesa, which is the busiest heavy-duty truck crossing in California. Like Portside, the deployment of newer, lower-emitting cars and trucks will not only reduce local levels of ozone, but also provide co-benefits for reducing other air pollutant and toxic emissions. The District has recently formed a Community Steering Committee, and is now actively working to develop a monitoring plan and CERP with the goal of further reducing pollution and community exposure throughout the International Border community.

A total of 19 census tracts in San Diego County have been designated as disadvantaged communities in the AB 617 CAPP, as shown in Table 3 (Portside Community Census Tract Ozone Percentiles) and Table 4 (International Border Community Census Tract Ozone Percentiles) below. As part of the scoring for each census tract, OEHHA included historical levels of ozone as one of the many pollution indicators for each census tract.[26] For CalEnviroScreen 4.0, ozone data from 2017 to 2019 was utilized.

Table 3
Portside Community Census Tract Ozone Percentiles

Census Tract	Total Population	ZIP	Nearby City (to help approximate location only)	Longitude	Latitude	DRAFT CES 4.0 Percentile Range	Ozone	Ozone Pctl
6073004000	4828	92102	San Diego	-117.127118	32.708779	80-85%	0.041	**28.40**
6073003502	4537	92113	San Diego	-117.1134902	32.6986004	85-90%	0.041	**28.25**
6073003901	4406	92113	San Diego	-117.1267377	32.7035568	90-95%	0.041	**27.88**
6073003603	4010	92113	San Diego	-117.1075924	32.6866623	90-95%	0.041	**27.53**
6073003601	2877	92113	San Diego	-117.1165151	32.6909862	95-100%	0.041	**27.48**
6073004700	1711	92102	San Diego	-117.1450748	32.7083889	75-80%	0.041	**27.44**
6073003902	4055	92113	San Diego	-117.1263197	32.696749	95-100%	0.041	**27.39**
6073004900	5391	92113	San Diego	-117.138677	32.7018526	95-100%	0.041	**27.26**
6073005100	6711	92113	San Diego	-117.1528082	32.7037376	80-85%	0.041	**26.75**
6073005000	2360	92113	San Diego	-117.1411746	32.6948502	95-100%	0.041	**26.55**
6073011602	3964	91950	National City	-117.0941732	32.6599903	80-85%	0.040	**25.77**
6073021900	6194	91950	National City	-117.1150589	32.6564826	80-85%	0.040	**24.72**

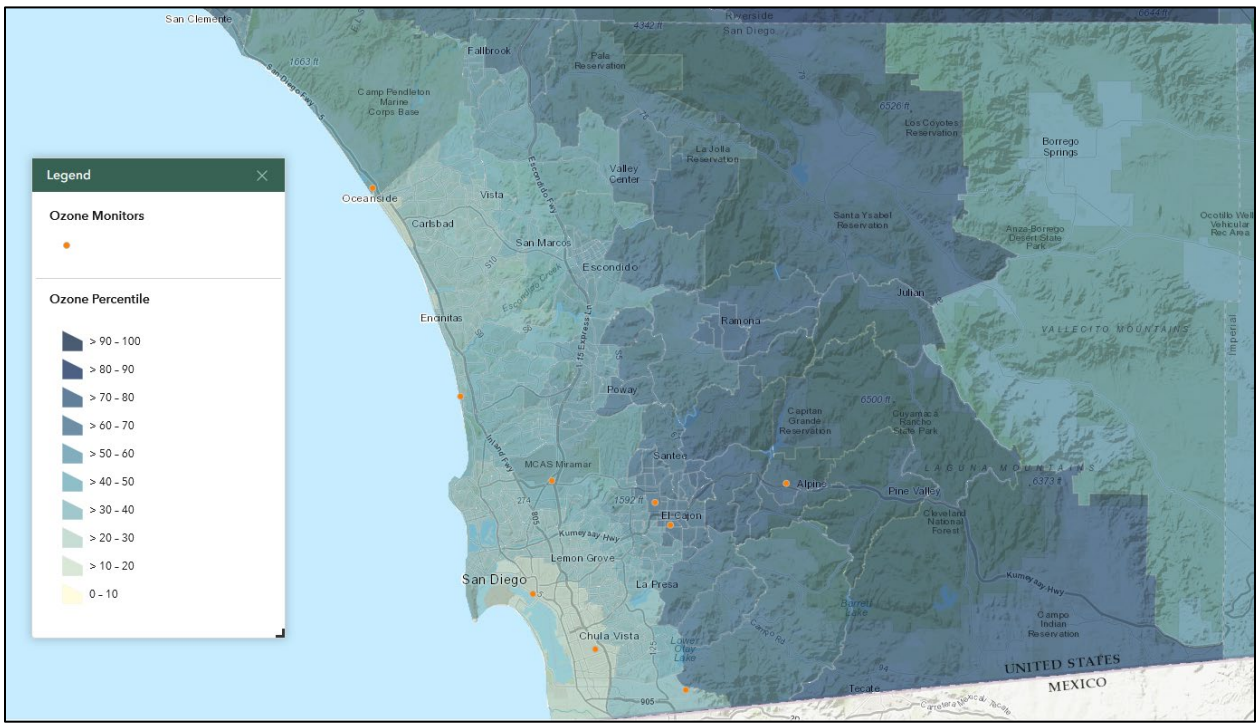
Table 4
International Border Community Census Tract Ozone Percentiles

Census Tract	Total Population	ZIP	Nearby City (to help approximate location only)	Longitude	Latitude	DRAFT CES 4.0 Percentile Range	Ozone	Ozone Pctl
6073010015	3821	92154	San Diego	-116.9530603	32.560142	55-60%	0.045	**40.01**
6073010109	5341	92154	San Diego	-117.0884184	32.5494881	60-65%	0.043	**29.89**
6073010013	5871	92173	San Ysidro	-117.047455	32.5555517	80-85%	0.041	**28.91**
6073010009	6918	92173	San Ysidro	-117.0528794	32.5473763	70-75%	0.041	**28.76**
6073010005	8187	92173	San Ysidro	-117.0496159	32.5641527	75-80%	0.041	**28.43**
6073010012	5121	92173	San Ysidro	-117.0584994	32.5607791	70-75%	0.041	**27.64**
6073010111	3461	92173	San Ysidro	-117.0662396	32.5641819	75-80%	0.041	**27.06**

Of the identified census tracts, only one census tract exhibited ozone percentiles above 30%. In other words, the ozone concentrations in all identified census tracts, were lower than 60 to 75% of the census tracts found in California. All of the identified census tracts are also predominantly found along the coastline and at lower elevations of San Diego County, where meteorological conditions are not generally conducive to ozone formation.[27] This aligns with historical trends at District ozone monitors going back several decades, the locations of which have generally been in attainment for both state and federal ozone standards.

For reference, the highest scoring census tracts for ozone in San Diego County (as noted in Attachment F (San Diego County CalEnviroscreen 4.0 Scores and Ozone Percentiles by Census Tract) and Figure 5 (CalEnviroscreen 4.0 Census Tract Ozone Percentile Scores in San Diego County)) are in the communities of Alpine, Descanso, Julian, Warner Springs, and Ramona; all of which have ozone percentiles between 75-80%. The District's ozone monitor in Alpine consistently has the highest ozone levels throughout the County, due to the meteorological and geographic conditions that exist at such elevations. Higher ozone levels are generally found in census tracts in the inland foothills and valleys.

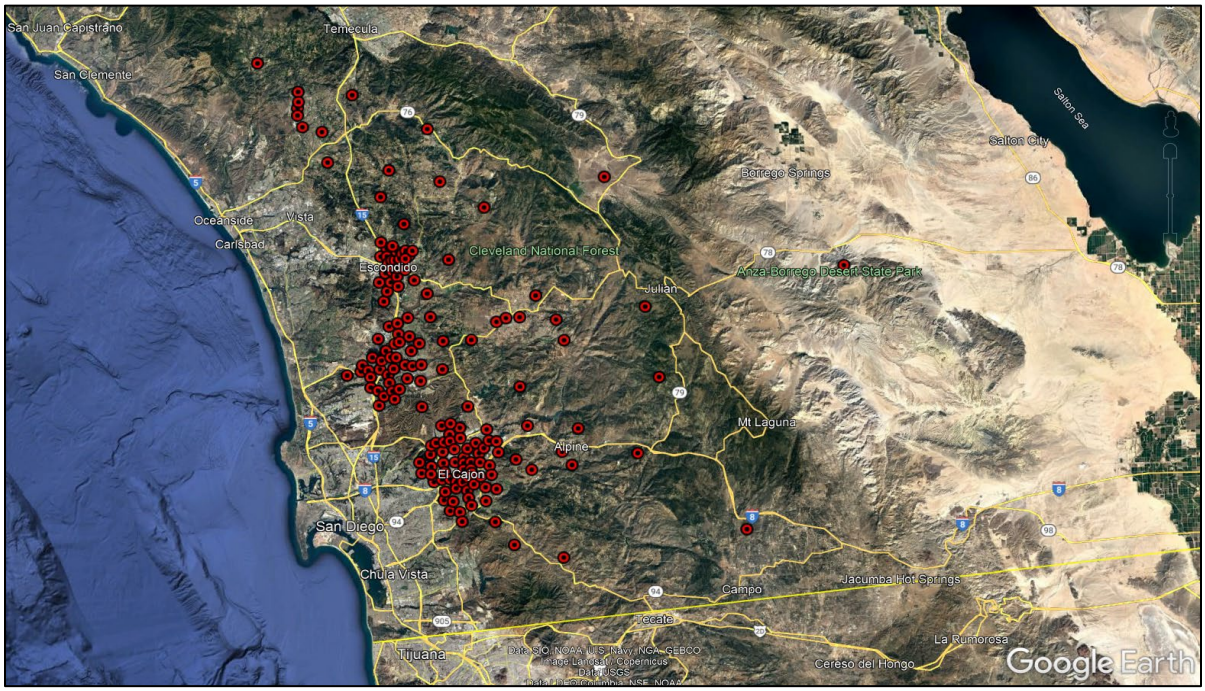
Figure 5
CalEnviroScreen 4.0 Census Tract Ozone Percentile Scores in San Diego County



Countywide census tracts with ozone percentiles above 50% can be seen in Figure 6 (CalEnviroscreen 4.0 Census Tracts Above 50% Ozone Percentile in San Diego County) on the following page. These census tract locations align well with the historical District air monitoring trends for the areas; demonstrating higher ozone formation in the inland foothills and valleys of San Diego County compared to the coastline. No census tracts in the Portside or International Border communities met this threshold. However, many inland locations such as El Cajon and Escondido are above the 50% percentile for ozone. The measures included in the 2022 RAQS, as well as statewide measures in place and to be adopted in the future, will serve to further reduce ozone concentrations in these communities, as well as others regionwide. While under-resourced communities found along the San Diego County coastline generally experience ozone levels below the 50%

percentile, it cannot be overlooked that these same communities can and still do experience ozone levels that may exceed state and federal ozone standards at times and during certain weather events. The RAQS includes measures that will also help these communities.

Figure 6
CalEnviroScreen 4.0 Census Tracts Above
50% Ozone Percentile in San Diego County



INNOVATIVE METHODS TO MONITOR AIR QUALITY IN UNDER-RESOURCED COMMUNITIIES

The District conducted mobile air monitoring during 2019 at the street level. The District partnered with Aclima to conduct this sampling using vehicle mounted air monitors between March 2019 and December 2019,[28] as depicted in Figure 7 (Aclima Air Monitoring Vehicle in San Diego County) and Figure 8 (Aclima Ozone Mobile Air Monitoring Results in San Diego County (2019)). The study collected more than 237 million unique data points identifying average street-level air pollution concentrations throughout days and nights, weekdays, and weekends in the Portside community. Pollutants measured included black carbon, PM2.5, carbon monoxide, carbon dioxide, nitric oxide, nitrogen dioxide, and ambient ozone levels.

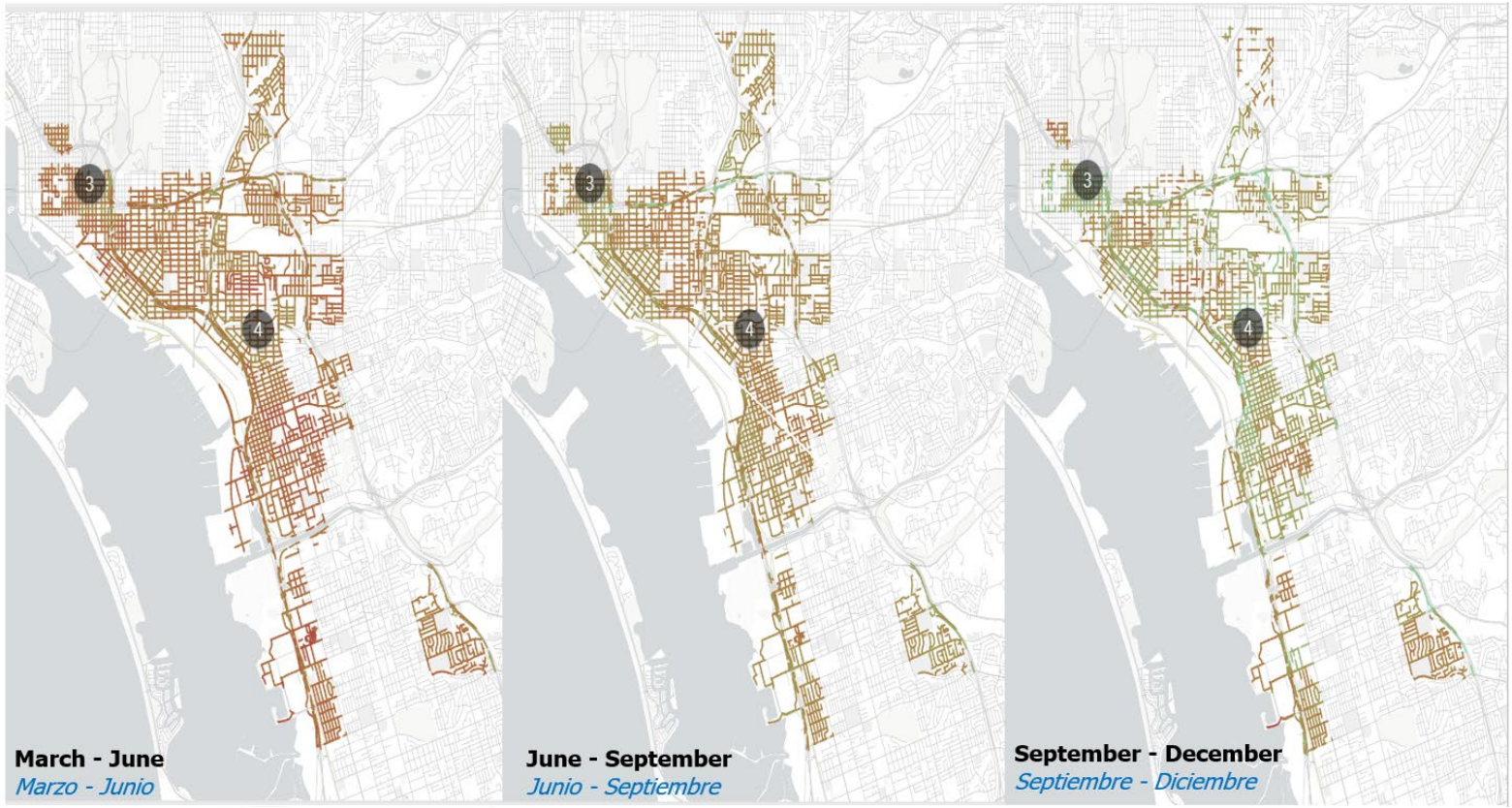
Figure 7
Aclima Air Monitoring Vehicle in San Diego County

Figure 8 (Aclima Ozone Mobile Air Monitoring Results in San Diego County (2019)) includes heatmaps to indicate where ground level ozone was measured to be the highest and lowest. Roadways shown in blue observed average ambient ozone levels around 0.010 ppm[29] during the three-month time period evaluated. Roadways shown in red observed average ambient ozone levels as high as 0.040 ppm.[30] Ozone levels were observed the highest during the Spring and Summer months, and then towards the end of 2019, dropped substantially as temperatures decreased. This trend aligns with District stationary air monitors.

Throughout the course of the nine-month monitoring period, average ozone levels did not exceed 40 parts per billion. While this data is encouraging, the lower ozone levels are likely the result of "NOx scavenging"; a chemical process that typically occurs in monitoring ozone levels near roadways. The EPA has noted that elevated concentrations of Nitric Oxide (NO) occur from vehicle exhaust in roadways. NO reacts in the atmosphere to form Nitrogen Dioxide (NO_2), which then leads to a localized depletion of ozone concentrations near the roadway.[31] CARB has noted that this scavenging effect could cause localized roadway ozone concentrations to be about 40% less on average than ambient ozone levels in the same area.[32] As NO_2 is transported and diluted, it often leads to additional ozone formation in downwind areas.

Consequently, while the observed Aclima community ozone concentrations were lower in comparison to state and federal ozone standards, simply looking at the Aclima roadway ozone data alone may not explain the full extent of ozone pollution in the localized area. Nonetheless, the data can be utilized to visually depict areas within the community that might experience higher ozone concentrations than other areas in the same community.

Figure 8
Aclima Ozone Mobile Air Monitoring Results in San Diego County (2019)



3) **Downtown San Diego - East Village**
Traffic pollution indicated by higher CO, CO_2 and NO_2.

4) **Intersection of Upper National City and Shelltown**
Higher black carbon, PM 2.5, CO, and CO_2 at locations within this region, with specific locations varying by season.

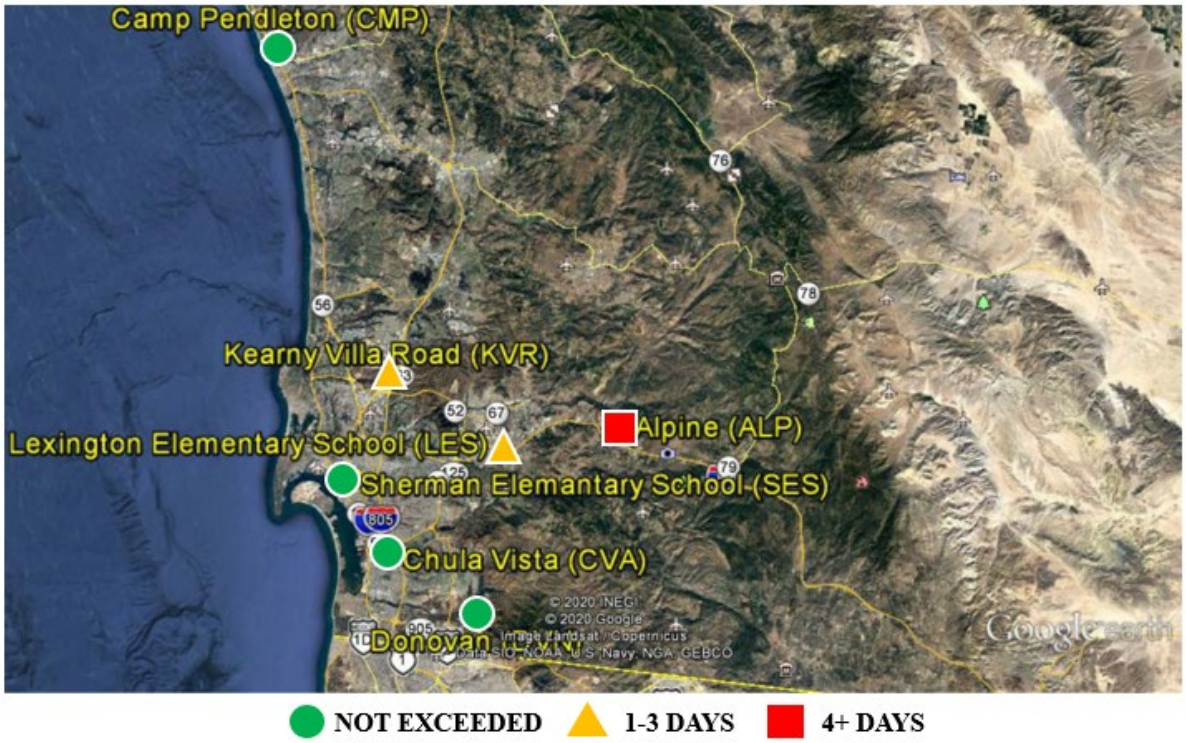
O_3 ppb

10 — 40

RECENT EXCEEDANCES OF STATE OZONE STANDARDS NEAR UNDER-RESOURCED COMMUNITIES

Figure 9 (Exceedances of the State Eight-Hour Ozone Standard in San Diego County (2021)) demonstrates days in which District-maintained regulatory ozone monitors exceeded the state eight-hour ozone standard. In 2021, the closest regulatory air monitors to the Portside community (Sherman Elementary and Chula Vista) did not exceed the standard at all. The closest regulatory air monitor to the International Border community (Otay Mesa-Donovan) also did not exceed the eight-hour state ozone standard. However, the District's monitor in El Cajon (Lexington Elementary) had three exceedances of the state eight-hour ozone standard.

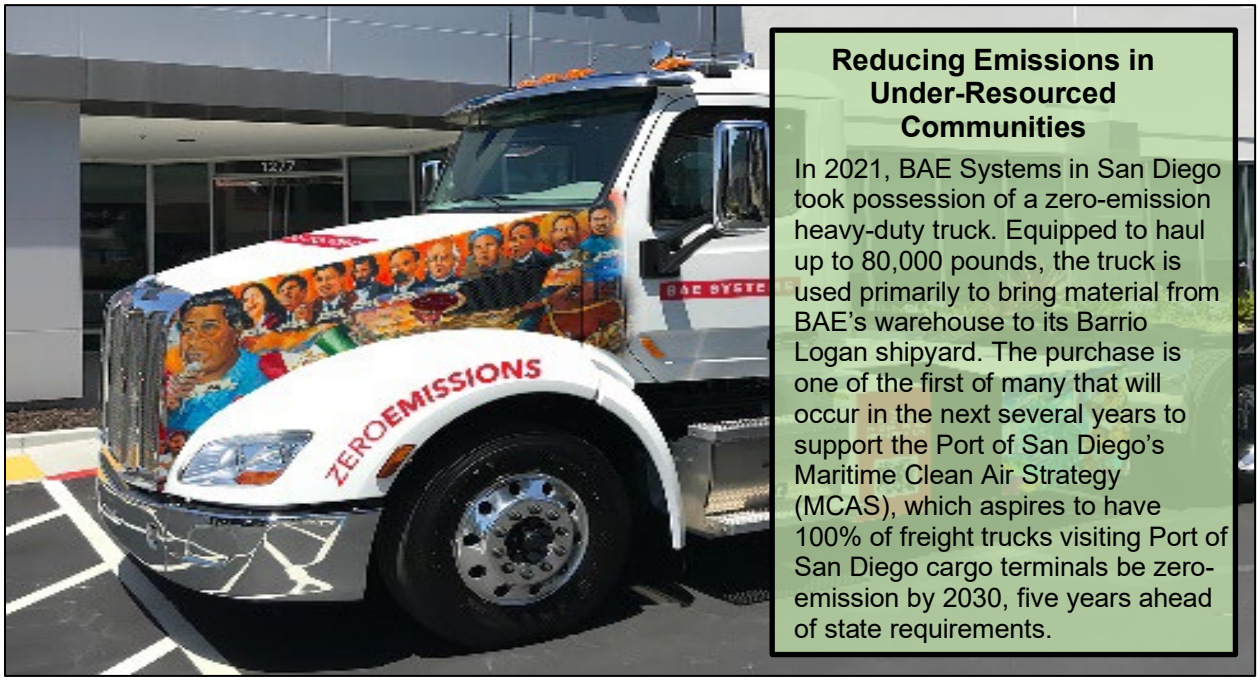
Figure 9
Exceedances of the State Eight-Hour Ozone Standard
in San Diego County (2021)



AGENCY COORDINATION TO IMPROVE AIR QUALITY IN UNDER-RESOURCED COMMUNITIES

The District is not the only organization working locally to improve air quality in disproportionally-impacted communities. Through its work in local Community Steering Committees, the District has strengthened partnerships with other government agencies, including SANDAG, the City of San Diego, National City, and the Port of San Diego. This has resulted in a coordinated regional effort to improve air quality in areas that have historically been impacted by air pollution, such as the Portside community.

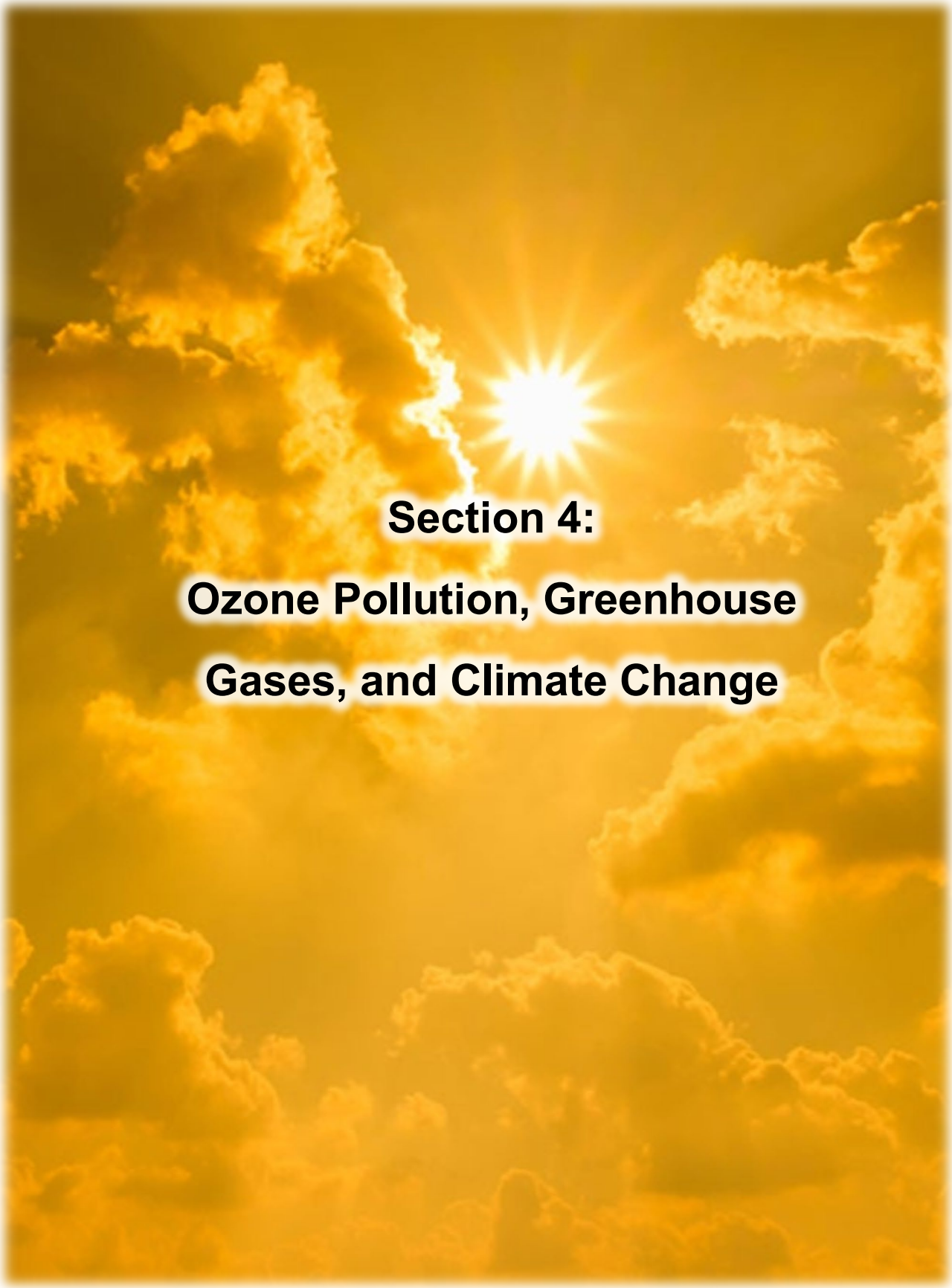
For example, on October 12, 2021, the Port of San Diego Board of Port Commissioners approved the Maritime Clean Air Strategy (MCAS). The MCAS included goals and objectives to help clean the air around the Portside Community at sources within their jurisdiction. In several equipment categories, the MCAS included goals that went above and beyond existing state requirements for the purchase of zero-emission equipment at Port facilities prior to regulatory deadlines. In fact, the MCAS included a goal to have all freight trucks calling upon both Port of San Diego terminals to be zero-emission by 2030, far exceeding state requirements by five years or more. The Port has also recently ordered zero-emission cranes in support of the MCAS, which will be the first all-electric cranes of their type to be operated in San Diego County.[33] The District will be providing $2.7 million in grant funding to install infrastructure to support the cranes. These significant actions present real-world examples of how each agency's respective programs (the Port's MCAS and the District's AB 617 Community Air Protection Program) complement and support one another in the shared goal of improving air quality for under-resourced communities.



Reducing Emissions in Under-Resourced Communities

In 2021, BAE Systems in San Diego took possession of a zero-emission heavy-duty truck. Equipped to haul up to 80,000 pounds, the truck is used primarily to bring material from BAE's warehouse to its Barrio Logan shipyard. The purchase is one of the first of many that will occur in the next several years to support the Port of San Diego's Maritime Clean Air Strategy (MCAS), which aspires to have 100% of freight trucks visiting Port of San Diego cargo terminals be zero-emission by 2030, five years ahead of state requirements.

Through the actions being proposed in the 2022 RAQS, as well as other actions already in place and planned at the local, state, and federal levels, the District anticipates further improvement in air quality in the future for all communities in San Diego County. Ozone formation is driven by sources emitted throughout San Diego County (primarily mobile sources), as opposed to pollutants like PM2.5 which are driven by both local and regional sources of pollution. As a result, reducing ozone concentrations at both the regional and local level is best addressed through a regional air quality plan such as the 2022 RAQS.



Section 4:
Ozone Pollution, Greenhouse Gases, and Climate Change

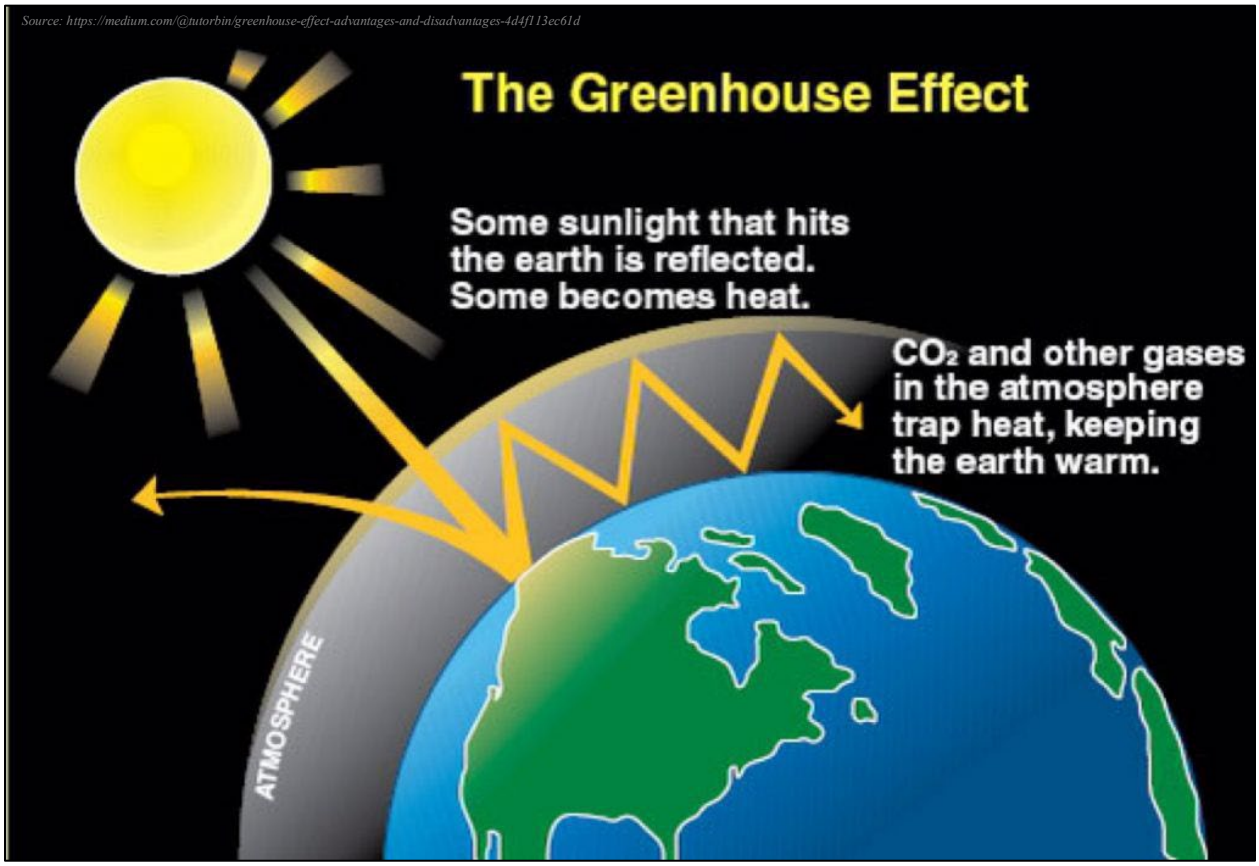
HIGHLIGHTS

- Greenhouse gases (GHGs) like carbon dioxide can persist in the atmosphere for decades and trap heat, creating a greenhouse effect and resulting in more intense heat waves, wildfires, drought, sea level rise, and degraded air quality. By contrast, conventional air pollutants such as ground-level ozone dissipate in hours or days.
- Many of the same activities that emit GHGs also emit conventional air pollutants. As a result, efforts to reduce GHGs can also have co-benefits to improve local air quality.
- Some air pollutants are both climate "forcers" and criteria air pollutants. Thus, the interactions between climate and criteria air pollutants occurring in our atmosphere can worsen the impacts of GHGs and could increase or decrease background levels of criteria air pollutants depending on certain conditions.
- Federal agencies like the EPA have acknowledged difficulties with respect to modeling future ozone concentrations due to uncertainties with predicting climate change impacts, timing of such impacts, and future meteorological conditions.
- Scientific evidence suggests climate change might impact future ozone concentrations. Recent climate impact studies have predicted ozone concentrations in San Diego County might increase between 0 to 0.001 ppm by 2050, and up to 0.002 ppm by 2090. Such increases, if they occur, are likely to be balanced by future emission reductions.
- The District reduces GHGs through voluntary incentive programs within our regulatory authority. Existing programs include a car retirement program (SCRAP) and an electric vehicle charging program (CALeVIP). Future opportunities include a regional EV purchase program for under-resourced communities (Clean Cars 4 All), and a commercial lawn and garden equipment replacement program. Such programs directly reduce GHGs and conventional air pollutants, and support regional Climate Action Plans.
- Significant reductions in GHGs are needed to achieve California's ambitious climate targets, presenting challenges for local and state transportation infrastructure. The majority of criteria pollutant and GHG emissions result from our transportation and energy choices so climate and transportation strategies have direct impacts on air quality. Therefore, understanding the connection and coordination with other agencies is essential.

THE GREENHOUSE EFFECT

Greenhouse gases (GHGs) such as carbon dioxide (CO_2), methane (CH_4), fluorinated gases ("F-gases"), and nitrous oxide (N_2O) persist in the atmosphere for decades to centuries, and become well-mixed throughout the global atmosphere regardless of where they are emitted. GHGs trap or absorb heat in the atmosphere that would otherwise escape to space, creating a greenhouse effect that can impact climates all over the world (see Figure 10 – Greenhouse Gas Effect). These impacts include more frequent and intense heat waves, increased drought, extreme weather events, wildfires, sea level rise, degraded local air quality, and harm to water resources and ecosystems such as forests and coral reefs. By contrast, conventional air pollutants such as ground-level ozone, dissipate in hours or days, and therefore have a more localized/regional effect on air quality and public health.

Figure 10
Greenhouse Gas Effect



Many of the same activities that emit GHGs also emit conventional air pollutants. For example, fossil fuel-burning mobile sources like cars and trucks, as well as power plants, are among the largest emitters of both criteria air pollutants and GHGs. Consequently, efforts to reduce GHG emissions can have co-benefits to improving local air quality.

In the United States, criteria air pollutants have health-based standards set by the EPA to allowable concentrations of each pollutant into the air. These six pollutants are regulated under the federal Clean Air Act, as well as California state law. These pollutants include ozone, PM, carbon monoxide, lead, nitrogen dioxide, and sulfur dioxide. VOCs, ammonia, and NOx are also regulated as ozone and PM precursors. Control strategies found in the 2022 RAQS, as well as the 2020 federal Ozone Plan, rely on a combination of available and advanced technologies, along with efficiency improvements, to control these pollutants. Many of these control measures combine planning efforts to simultaneously address climate change, sustainable transportation needs, and energy sector improvements to achieve multiple co-benefits.

HOW GHGS MAY IMPACT FUTURE OZONE CONCENTRATIONS

Historically, criteria air pollutants and GHGs were often treated separately by different state and federal regulations. However, certain air pollutants are considered both climate "forcers" and criteria air pollutants; thus their link cannot be ignored. Interactions between climate and criteria air pollutants occur in our atmosphere, and have the potential to worsen the impacts of GHGs by increasing background levels of criteria air pollutants.

Recent studies have shown global increases in methane emissions (a GHG) have contributed to potentially increased background levels of ground-level ozone nationwide.[34] Additionally, weather conditions typically associated with climate change and rising temperatures, such as hotter/sunnier days and more stagnant weather conditions, also tend to increase ambient ozone. Consequently, climate-driven changes in weather, human activity, and natural emissions, may impact future air quality, but the location and size of these impacts are unknown.

For example, precipitation is anticipated to increase as a result of climate change in some regions of the country, but may also decrease in others. Regions that experience excessive periods of drought and higher temperatures are also likely to have increased frequency of wildfires and more windblown dust from soil. Rising temperatures and changing meteorological conditions will also alter the demand for heating and cooling of indoor spaces. Shifts in fuel types and amounts used for energy and transportation will also play a critical role in the amount and composition of air pollutants emitted.

All of these overlapping factors result in great uncertainty in predicting the impact that climate change will have in future ozone concentrations. EPA has acknowledged this uncertainty with respect to modeling future ozone concentrations. The main reason for such uncertainty, as cited by EPA, includes difficulty in predicting the precise location and timing of climate change impacts in specific regions, as well as future meteorological conditions. Other examples of such uncertainties cited include:

- **Difficulty in predicting future changes in the transport of emissions globally, and air pollution transported from other countries.** Countries in East Asia have significantly reduced emissions in recent years. If such trends continue in the future, it is possible that such reductions could result in lower background ozone levels globally, especially in air masses that are transported into California.
- **Uncertain short-term climate projections.** Climate projections are more robust for periods several decades into the future. On the other hand, short-term climate change studies are less refined regarding possible impacts associated with ozone concentrations. This is due to year-to-year variability of meteorology. Air agencies are typically only required to predict future regional ozone levels within a three to 20 year period in the future to comply with federal deadlines. Predicting possible short-term meteorological conditions that go beyond historical averages is difficult.
- **Higher temperatures and more biogenic emissions could alter future air pollution mixing heights in the atmosphere.** The presence of different meteorological conditions could result in higher mixing heights of air pollution

levels in our local atmosphere. Today, the average mixing height for ozone formation exists at higher elevations, such as in Alpine. However, it is possible that higher temperatures could push the region's mixing height to elevations above Alpine and other populated areas, as well as above local air monitors. This reaction could potentially result in lower ambient ozone concentrations regionwide.

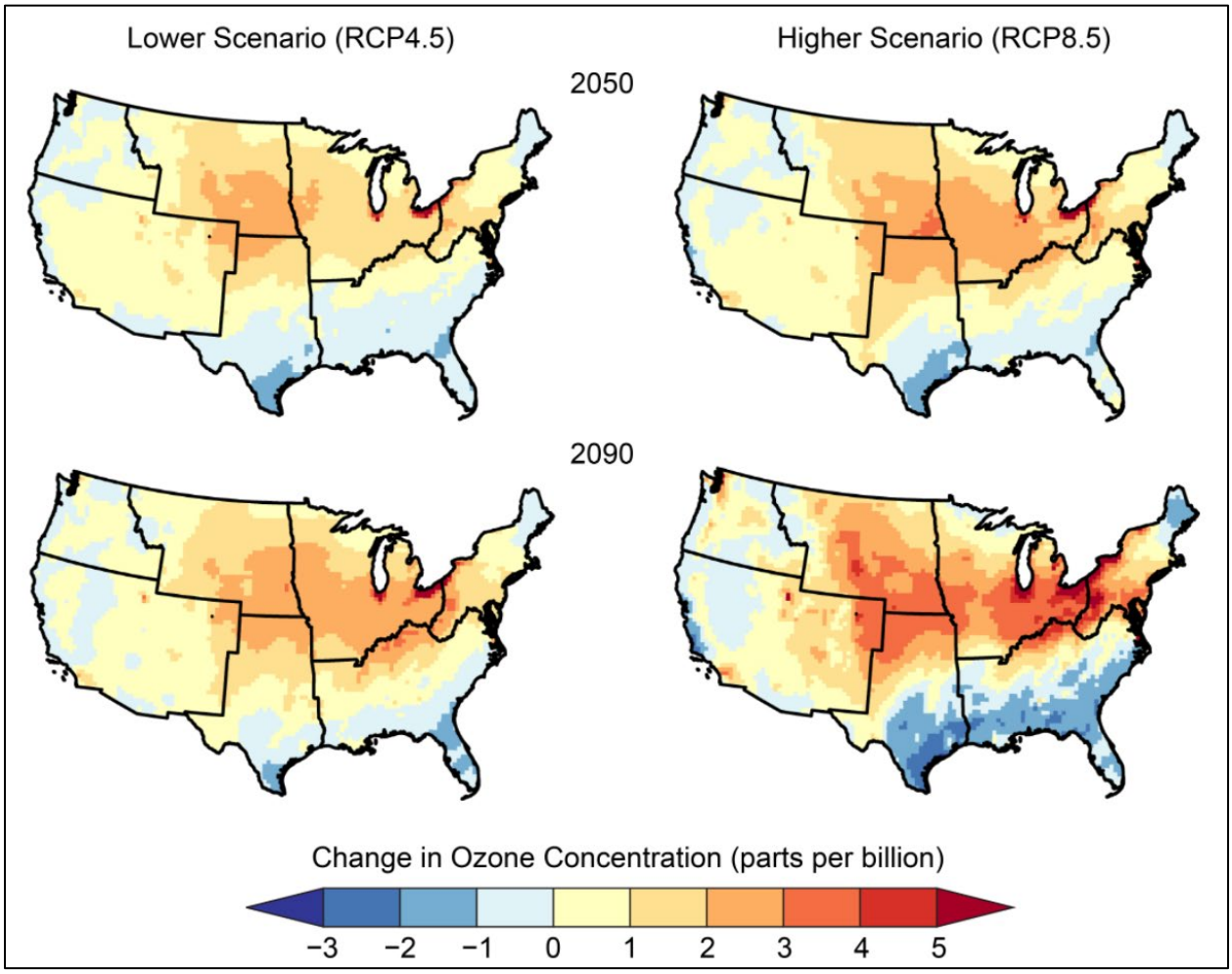
As a result of these uncertainties, EPA has not recommended air agencies account for long-term climate change in federal ozone attainment demonstrations.[35] The same holds true for state ozone plans like the 2022 RAQS, which does not require a modeling demonstration to be performed.

CLIMATE PENALTY

Notwithstanding the above, climate change is likely to alter weather conditions and impact emissions from human and natural sources. Prevailing evidence suggests that climate change alone introduces a "climate penalty" for ozone over most of the United States. A climate penalty is an increase in air pollution resulting solely from climate change. The penalty is a result of warmer temperatures and increases in natural emissions.[36] A climate penalty could potentially counteract anticipated future emission reductions from human activities, but as mentioned above, the exact impact of such changes remains uncertain.

Figure 11 (National Climate Assessment Projections in Summer Season Ozone), from the 4th National Climate Assessment, models future ozone concentrations in 2050 and 2090 with the introduction of a climate penalty and different temperature change scenarios. In one scenario (RCP4.5), the assessment predicts more conservative temperature increases in the future. In the other scenario (RCP8.5), much higher future temperature increases are predicted. The ozone data used in the assessment is dated,[37] and does not account for emission reductions and regulatory actions that have occurred (or are planned to occur) at the local, state, or federal levels. Nonetheless, the results are useful in understanding possible impacts to future ozone concentrations.

Figure 11
National Climate Assessment Projections in Summer Season Ozone



With respect to San Diego County, the assessment indicates future regional ozone concentrations might increase between 0 to 0.001 ppm[38] by 2050 using either temperature scenario. Looking out to 2090, the assessment predicts regional ozone concentrations might increase between 0 to 0.002 ppm[39] in San Diego County in both temperature scenarios. Other areas of the United States, including much of the Midwest and Northeast, are predicted to see larger impacts and higher ozone concentrations. The Southeast and northern coastline of California, are predicted to see decreases in ozone concentrations in either scenario as a result of higher temperatures, further illustrating the difficulty in such predictions.

As noted, the National Climate Assessment does not account for planned reductions in VOC and NOx emissions at local, state, and federal levels, and does not account for anticipated future reductions in ozone concentrations from such actions that are already in place. Climate change may cause minor impacts to regional ozone concentrations in

the future. However, future actions taken between now and 2045 to reduce emissions countywide are likely to balance out any possible impacts.

DISTRICT ACTIONS TO REDUCE GHGS AND THE VISION FOR 2045

Global climate change is an environmental issue of considerable urgency, and one the District takes seriously. While climate scientists agree on the evidence that climate change is occurring, the details and model-based predictions continue to evolve. In San Diego County, leading scientists have prepared analyses outlining climate impacts that are already occurring – such as record temperatures, drought, and wildfires – and are expected to worsen. Governments at all levels are responding with regulations and voluntary commitments to address the impacts and to reduce GHGs.

This includes the District, which reduces GHGs through implementation of various incentive programs that also reduce criteria air pollutants (see Attachment J - Incentive Programs). Examples of programs the District is already implementing include a voluntary program to incentivize the retirement of older, polluting combustion vehicles ("SCRAP"), as well as regional program partnerships with SANDAG and the California Energy Commission to incentivize the installation of publicly-accessible electric vehicle charging stations throughout the County ("CALeVIP"). These programs incentivize cleaner, lower carbon transportation options and support regional CAPs countywide.

While the District does not have the authority to regulate emissions from certain sources, additional District incentive programs proposed will also directly reduce GHGs within our authority. This includes Clean Cars 4 All, which will provide monetary incentives for under-resourced community residents to purchase new/used cleaner vehicles or other alternative transportation options. It also includes a possible future commercial lawn and garden equipment replacement program designed to incentivize the purchase of zero-emission equipment like commercial lawnmowers and leaf blowers.

Additional initiatives proposed by other government agencies, such as CARB's Advanced Clean Cars II Regulation,[40] and expanded tax credits for new and used EV purchases in the 2022 Inflation Reduction Act,[41] will encourage more zero-emission vehicles to be purchased. This will result in substantial GHG reductions from passenger vehicles in the future. These efforts, as well as others that may emerge in the future, allow the District and other regional entities to play a vital role in addressing the impacts of climate change.

While the District will continue to play an important role in combatting climate change, regulatory authority for local air districts to control GHGs is statutorily limited. Assembly Bill (AB) 32 (Nunez) in 2006 designated regulatory authority at the state level to CARB. Additionally, AB 398 (E. Garcia, 2017) further prohibited local air districts from adopting or implementing carbon dioxide-reducing rules going above and beyond state regulations until 2031. Thus, the District cannot typically enforce nor regulate GHGs within San Diego County.

Nonetheless, the District will continue to seek opportunities to voluntarily reduce GHG emissions whenever feasible. Examples of such actions include, but are not limited to: education and outreach activities, legislative advocacy, enhanced involvement in regional CEQA-related actions, and internal development of best management practices. Such measures and the sectors where the District could be involved are outlined in Attachment I (Further Study Measures).

The District will continue to collaborate with local, state, and federal entities to encourage GHG emission reductions. This collaboration includes but is not limited to: development and implementation of the San Diego Association of Governments (SANDAG) Sustainable Communities Strategy (SCS) and future Regional Plan updates, development of the San Diego County Regional Decarbonization Framework, San Diego County's Electric Vehicle Roadmap, as well as providing feedback to local governments in the development of respective Climate Action Plans (CAPs).

The summaries on the following pages describe some of the actions the region overall will need to take collaboratively to achieve a vision of cleaner air, a stable climate, a robust natural environment, and a prosperous and sustainable economy by 2045:

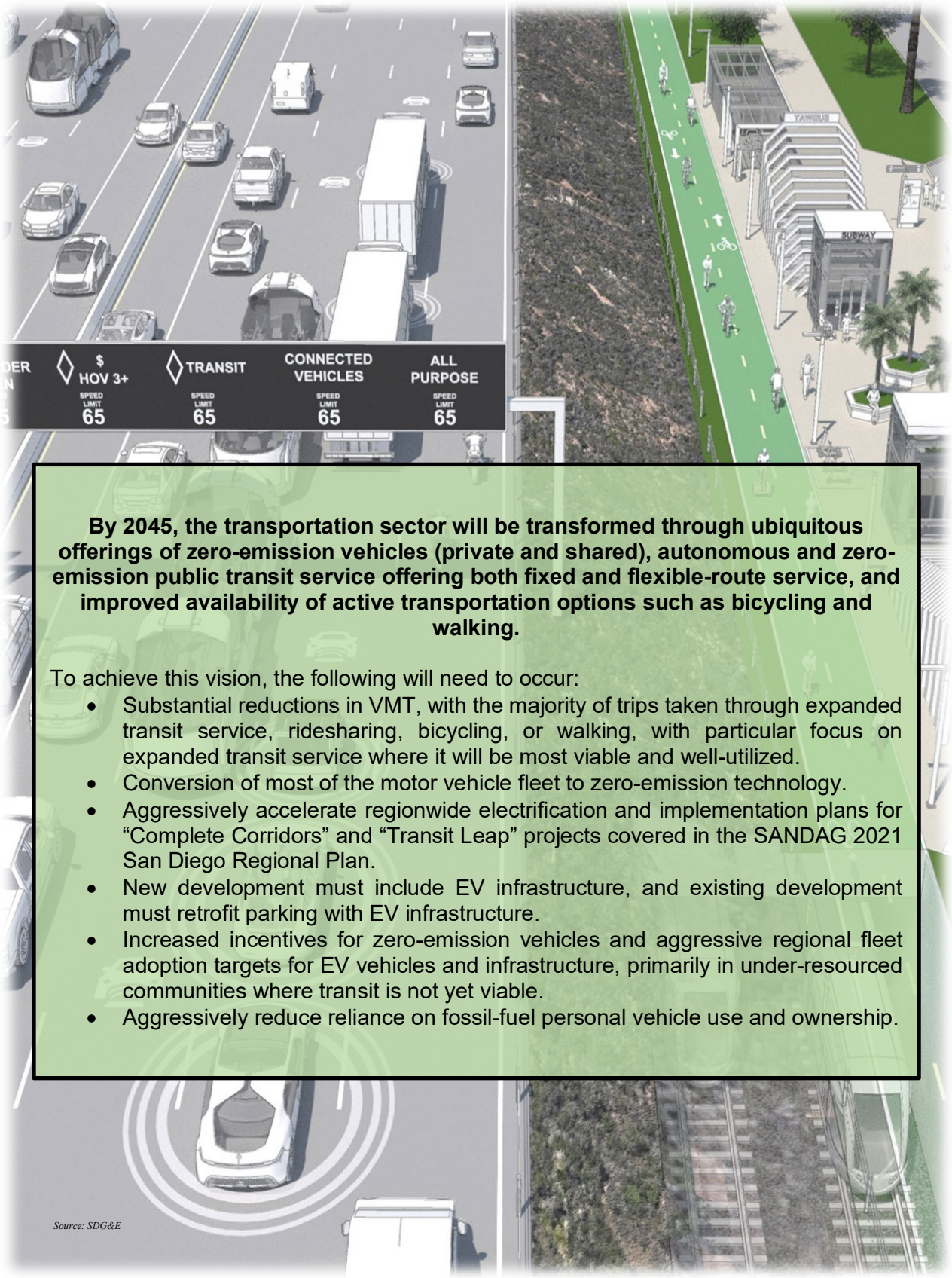
(continued on next page)

By 2045, the regional economy will be powered by clean, renewable electricity, and be a statewide leader in transformative clean technology development and production of locally produced, carbon-neutral products.

To achieve this vision, the following will need to occur:

- Transition the region's energy grid to be powered by 100% renewable energy sources countywide, such as wind, solar, and geothermal.
- Invest in intermittent and flexible energy storage, generation, and demand-side management that can meet societal expectations and regulatory standards for reliability.
- Creation of a hub for the development and production of innovative renewable energy technologies, and in doing so, create strong, local bi-national jobs that require a diverse education and skillset.

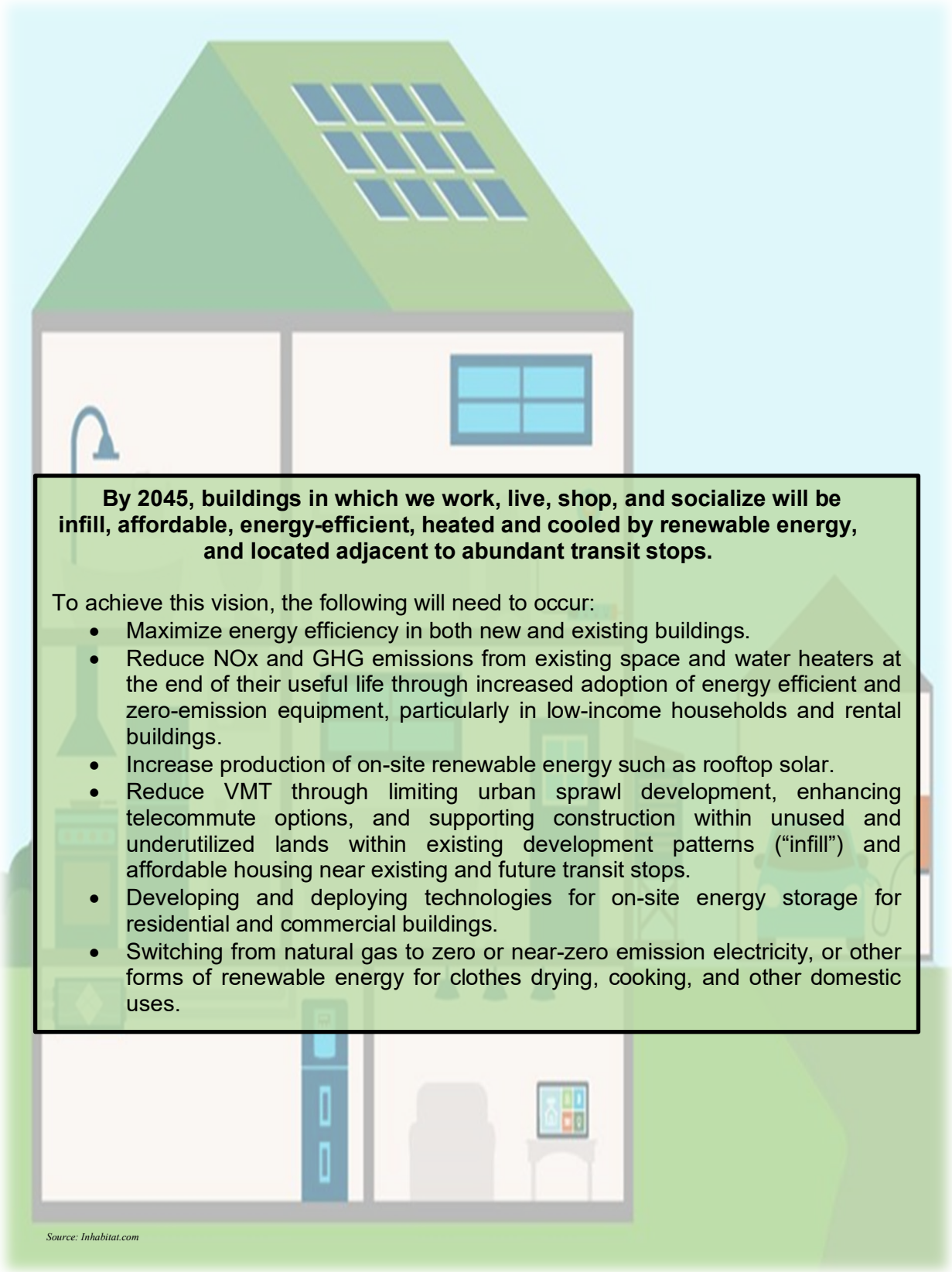
Source: https://www.greenbuildingafrica.co.za/solar-and-wind-could-provide-half-of-2040-power-mix-across-22-african-nations/#prettyPhoto/0/



By 2045, the transportation sector will be transformed through ubiquitous offerings of zero-emission vehicles (private and shared), autonomous and zero-emission public transit service offering both fixed and flexible-route service, and improved availability of active transportation options such as bicycling and walking.

To achieve this vision, the following will need to occur:

- Substantial reductions in VMT, with the majority of trips taken through expanded transit service, ridesharing, bicycling, or walking, with particular focus on expanded transit service where it will be most viable and well-utilized.
- Conversion of most of the motor vehicle fleet to zero-emission technology.
- Aggressively accelerate regionwide electrification and implementation plans for "Complete Corridors" and "Transit Leap" projects covered in the SANDAG 2021 San Diego Regional Plan.
- New development must include EV infrastructure, and existing development must retrofit parking with EV infrastructure.
- Increased incentives for zero-emission vehicles and aggressive regional fleet adoption targets for EV vehicles and infrastructure, primarily in under-resourced communities where transit is not yet viable.
- Aggressively reduce reliance on fossil-fuel personal vehicle use and ownership.

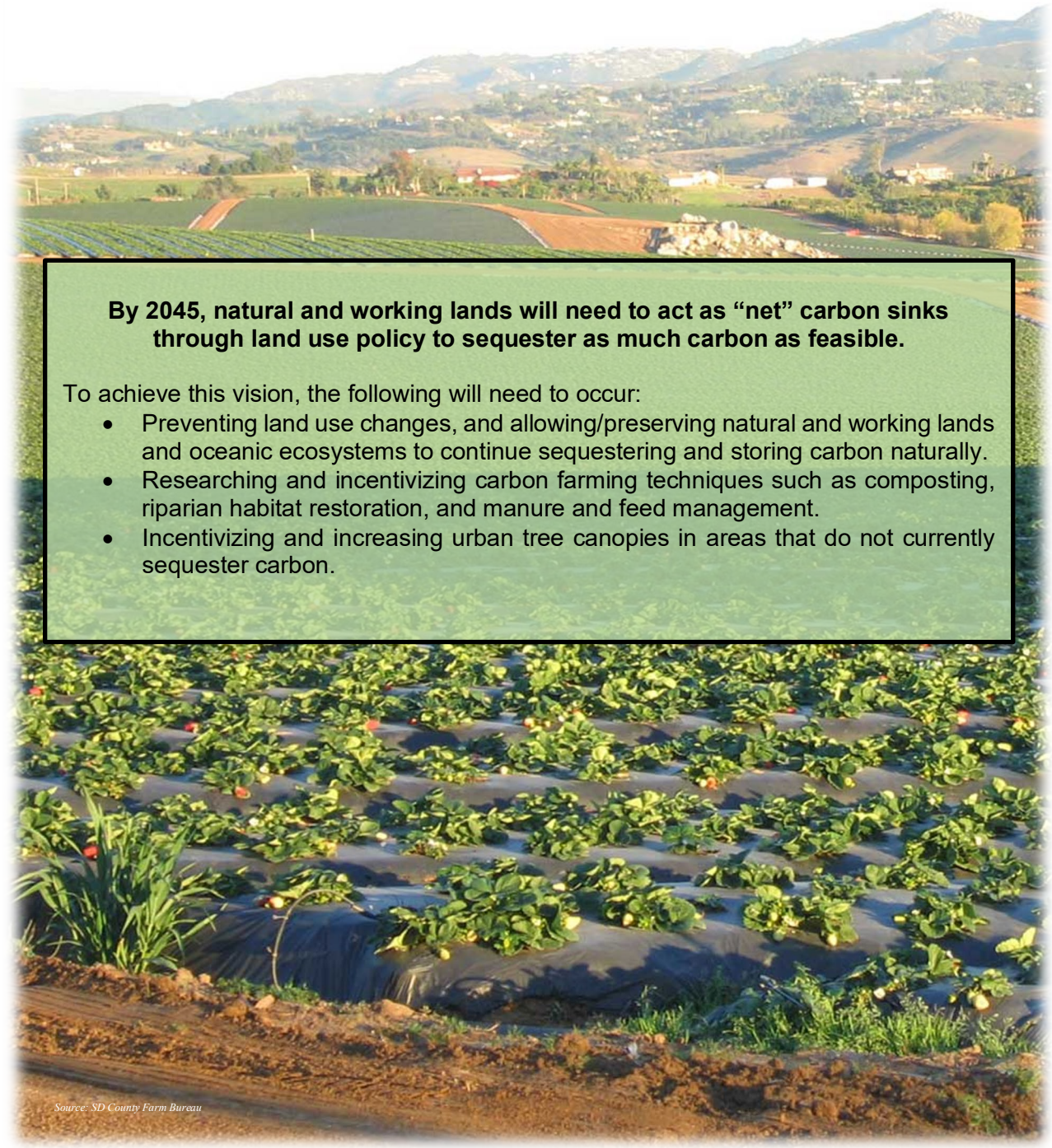


By 2045, buildings in which we work, live, shop, and socialize will be infill, affordable, energy-efficient, heated and cooled by renewable energy, and located adjacent to abundant transit stops.

To achieve this vision, the following will need to occur:

- Maximize energy efficiency in both new and existing buildings.
- Reduce NOx and GHG emissions from existing space and water heaters at the end of their useful life through increased adoption of energy efficient and zero-emission equipment, particularly in low-income households and rental buildings.
- Increase production of on-site renewable energy such as rooftop solar.
- Reduce VMT through limiting urban sprawl development, enhancing telecommute options, and supporting construction within unused and underutilized lands within existing development patterns (“infill”) and affordable housing near existing and future transit stops.
- Developing and deploying technologies for on-site energy storage for residential and commercial buildings.
- Switching from natural gas to zero or near-zero emission electricity, or other forms of renewable energy for clothes drying, cooking, and other domestic uses.

Source: Inhabitat.com



By 2045, natural and working lands will need to act as "net" carbon sinks through land use policy to sequester as much carbon as feasible.

To achieve this vision, the following will need to occur:

- Preventing land use changes, and allowing/preserving natural and working lands and oceanic ecosystems to continue sequestering and storing carbon naturally.
- Researching and incentivizing carbon farming techniques such as composting, riparian habitat restoration, and manure and feed management.
- Incentivizing and increasing urban tree canopies in areas that do not currently sequester carbon.

Source: SD County Farm Bureau

Section 5: Ozone Pollution and Mobile Sources

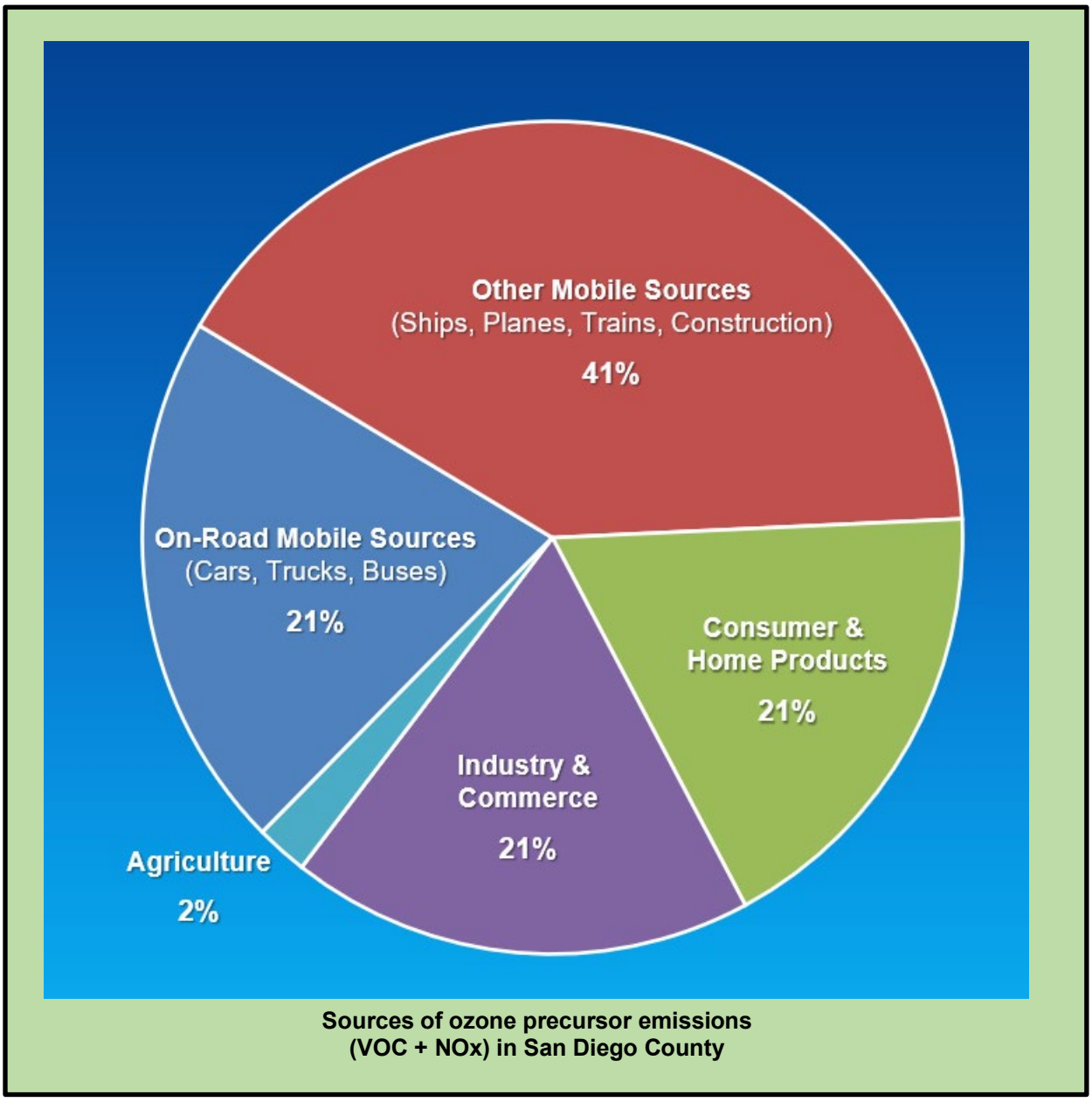
HIGHLIGHTS

- Since 1999, the District has implemented a variety of incentive programs focusing on mobile source projects.
- Collectively, these programs have provided over $157 million in funding to reduce smog-forming, diesel particulate matter, and GHG emissions throughout San Diego County. This has reduced emissions by over 13 tons per day, equivalent to removing approximately six million cars from the road.
- The District administers legacy grant programs like the Carl Moyer Program, but also several new, innovative programs that reduce criteria air pollutant and GHG emissions in under-resourced communities and rural agricultural areas.
- Regional partners, including SANDAG, also continue to implement transportation control measures (TCMs) to reduce emissions from transportation sources, such as improving access to transit, vanpools, and High-Occupancy Vehicle (HOV) lanes, as well as improving bicycle and traffic signal infrastructure.
- In response to state law and actions ongoing at other air agencies, the District is evaluating a possible Indirect Source rule in San Diego County that would further reduce transportation emissions around ports, warehouses, and distribution centers.

Mobile sources include light, medium, and heavy-duty on-road vehicles, off-road equipment, motorcycles, recreational boats, cargo handling equipment, locomotives, ocean-going vessels, and commercial harbor craft. Most California regions, including San Diego County, face challenges in reducing emissions from mobile sources, which are the primary source of air pollution in the region. 62% of daily ozone precursor emissions (VOC and NOx) in San Diego County are attributable to mobile sources alone. CARB and the EPA maintain regulatory authority over such mobile sources and have exercised that authority to varying degrees to reduce criteria air pollutants as well as GHGs.

Given the severity of California's air quality challenges, CARB has implemented the strictest controls on mobile sources in the nation. CARB has direct regulatory authority over many mobile sources in California. CARB's comprehensive strategy to reduce emissions from mobile sources includes stringent emissions standards for new vehicles, in-use programs to reduce emissions from existing vehicle and equipment fleets, cleaner fuels that minimize emissions, and incentive programs to accelerate the adoption of the cleanest vehicles faster than by regulations alone. In 2022, CARB took their regulatory program a step further by adopting the 2022 State SIP Strategy, which proposed to adopt several statewide regulations to further reduce ozone.[42]

CARB's measures create a comprehensive approach to reducing mobile source emissions. They establish strict motor vehicle and engine emissions standards, deadlines for adopting new technology, clean fuel specifications, and incentive programs to encourage early retirement of highly polluting vehicles and equipment. The District relies on these state measures to attain the ozone standards in a timely manner. Over the past two decades, local air districts and CARB have focused significant funding towards voluntary incentive programs. In many cases, voluntary incentive programs have reduced ozone precursor emissions faster than what could have been achieved through regulation alone.



Sources of ozone precursor emissions (VOC + NOx) in San Diego County

In addition to regulations and incentive programs, the District is also involved in three categories of mobile source emission control programs, which include: (1) an Indirect Source Program, (2) a District Mobile Source Compliance Program, and (3) Coordination with SANDAG to implement regionwide Transportation Control Measures (TCMs) (see Attachment K – Transportation Control Measures).

INCENTIVE PROGRAMS

Since 1999, the District has implemented numerous grant programs to upgrade high-emitting equipment to newer, lower-emitting technologies. Incentive programs add to traditional control programs to encourage new technology and provide emission reductions in advance of rule requirements. Approximately $157 million has been granted to equipment owners in San Diego County since 1999, resulting in combined emission reductions of more than 13 tons per day,[43] equivalent to having removed approximately six million cars from operating on the road.

The District has helped hundreds of local businesses receive grants to upgrade to newer, cleaner equipment

The incentive programs that have been implemented In San Diego County during the last six years are listed below. Programs that are anticipated to continue during the next three years are identified with an asterisk (*), and programs that are expected to be adopted during the next three years are identified with two asterisks (**):

- Carl Moyer Memorial Air Quality Attainment Program;*
- Community Air Protection Program (CAPP);*
- Funding Agricultural Replacement Measures for Emission Reductions (FARMER);*
- Voluntary NOx Remediation Measure Program (NRM);
- Voucher Incentive Program (VIP);
- Proposition 1B Goods Movement Emission Reduction Program (GMERP);
- Vehicle Registration Fund Program (VRF);*
- Air Quality Power Generation Mitigation Fund;
- School Bus Compressed Natural Gas (CNG) Tank Replacement Incentive Program (TRIP);
- Drayage Truck Demonstration Project;
- Scrap Car Reimbursement Assistance Program (SCRAP)(“T-3.3”);*
- CALeVIP (“T-3.5”);*
- Portside Air Quality Improvement and Relief (PAIR) Program;*
- Clean Cars 4 All;**
- Lawn and Garden Equipment Exchange Programs;** and
- Short-Haul Zero Emission Truck Pilot Project**

Attachment J (Incentive Programs) describes each funding program and funding allocations made between July 1999 and July 2022, as well as estimated annual emission reductions that will be obtained over the lives of the funded projects. Recent state law[44] also now encourages the District apply for state and federal incentive programs to continue reducing emissions. However, staff resources do not allow for the District to apply for every grant program made available. Attachment J discusses potential funding sources that may become available in the future at the state and federal level.

Since 1999, local projects funded by the District have resulted in total emission reductions of the following pollutants:

VOC
118.64 tons per year (0.32 tons per day)

NOx:
1,658.22 tons per year (4.54 tons per day)

PM
65.64 tons per year (0.18 tons per day)

CO
273.65 tons per year (0.75 tons per day)

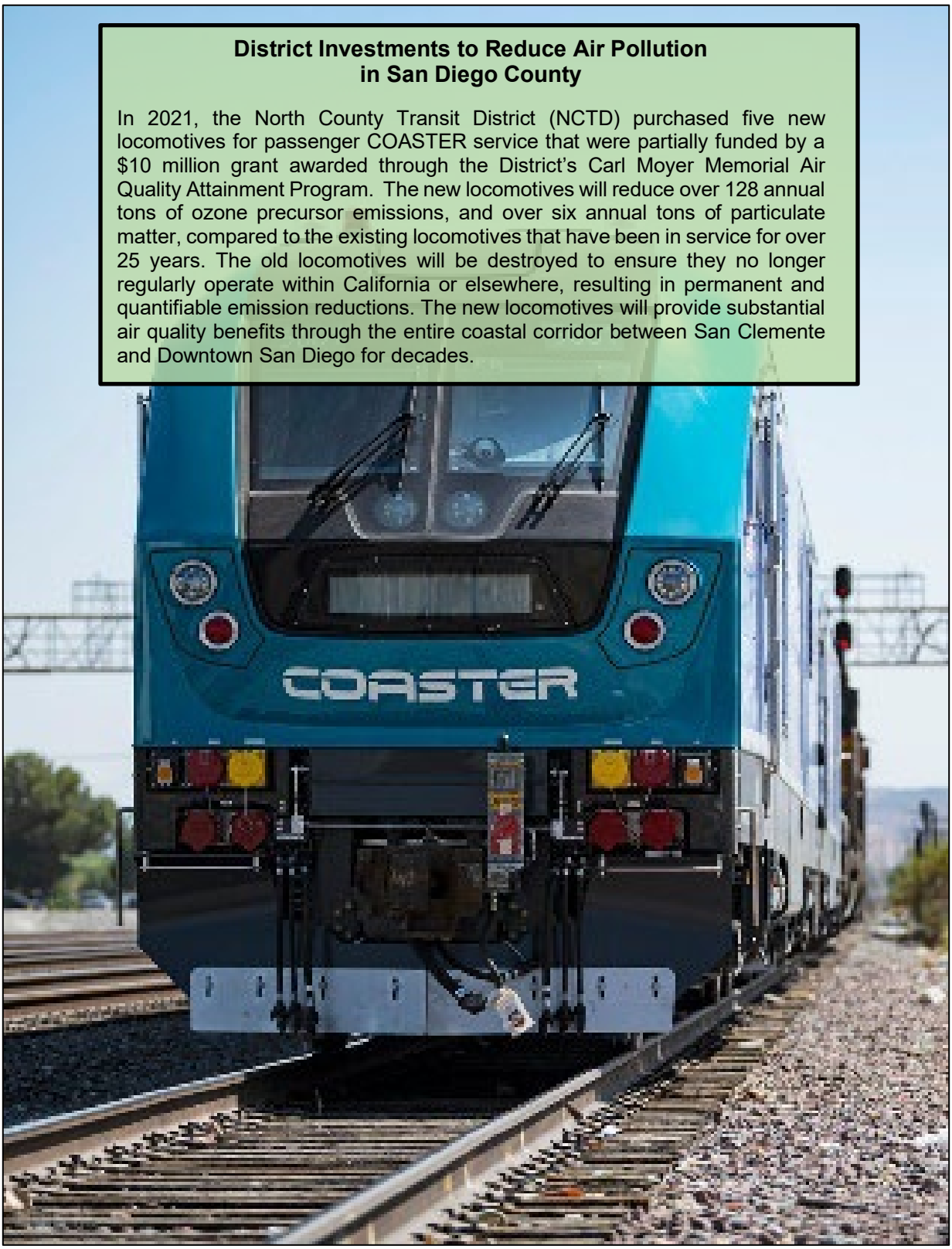
GHGs (CO_2)
2,923.49 tons per year (8.00 tons per day)

These emission reductions are equivalent to **removing over six million passenger vehicles** from the road!

District incentive programs ensure that old, high-polluting equipment, such as this diesel school bus, are permanently destroyed and no longer operate

District Investments to Reduce Air Pollution in San Diego County

In 2021, the North County Transit District (NCTD) purchased five new locomotives for passenger COASTER service that were partially funded by a $10 million grant awarded through the District's Carl Moyer Memorial Air Quality Attainment Program. The new locomotives will reduce over 128 annual tons of ozone precursor emissions, and over six annual tons of particulate matter, compared to the existing locomotives that have been in service for over 25 years. The old locomotives will be destroyed to ensure they no longer regularly operate within California or elsewhere, resulting in permanent and quantifiable emission reductions. The new locomotives will provide substantial air quality benefits through the entire coastal corridor between San Clemente and Downtown San Diego for decades.



District Investments to Reduce Air Pollution in San Diego County

In 2021, the District awarded over $10 million in incentive funds to Crowley Maritime, located in the Port of San Diego, to build and operate a new electric tugboat. The District allocated over $8 million in Community Air Protection Program funds, and was awarded over $2 million from the EPA's Diesel Emission Reduction Act (DERA) Program for the project. Once operational in 2023, it will be the first zero-emission tugboat in the United States. Over the course of the first ten years of operation, the vessel will reduce over 178 tons of NOx, 2.5 tons of diesel PM, 3,100 tons of CO_2, and will diminish the need for more than 30,000 gallons of diesel fuel per year.

DISTRICT INDIRECT SOURCE PROGRAM

As required by Health and Safety Code Section 40918(a)(4) of the CCAA, the District's historic Indirect Source Program consisted of ongoing outreach and assistance to local governments, land developers, citizen groups, and non-profit organizations to reduce vehicle trips and associated emissions through voluntary land use and street design improvements. District efforts included:

- Technical assistance to SANDAG on programs to encourage smart growth.
- Technical assistance to local jurisdictions in crafting Climate Action Plans, to reflect greater reliance on transit and non-motorized transportation modes.
- Workshops, presentations, and technical assistance for city planning staffs, traffic engineers, developers, merchant organizations, neighborhood groups, and others working to improve conditions for walking, bicycling, and transit.
- Developed fact sheets providing technical information on smart growth and alternative transportation modes.

The 2009 and 2016 RAQS Revisions also committed the District to study the feasibility of adopting an Indirect Source Rule (ISR) by:

- Examining the requirements of existing ISR rules in other California air districts,
- Evaluating the potential feasibility of an ISR rule for San Diego County sources, and,
- Determining whether a local ISR would provide significant emission reductions beyond that achieved by the District's existing voluntary Indirect Source Program.

Indirect Source rules regulate facilities that are indirect sources of air pollutants. These facilities typically do not directly emit air pollutants, but instead attract cars, trucks, cargo handling equipment, or locomotives which do emit air pollutants.

The District carried out required analyses in 2015, and determined at the time that an ISR in San Diego County would not provide significant additional reductions in ozone-forming emissions. The analysis concluded that any regulatory District efforts would be duplicative to state and regional planning efforts already underway at the state and local levels. Examples of such efforts included recent amendments to the California Environmental Quality Act (CEQA) emphasizing non-vehicle travel, as well as commitments in various regional planning documents encouraging smart growth elements such as walking, biking, and transit.

Since adoption of the 2016 RAQS Revision, three actions have been taken that now affect the District's previous conclusion:

- On May 4, 2018, the South Coast Air Quality Management Districts (SCAQMD) Governing Board directed its staff to develop ISR measures proposed within its 2016 Air Quality Management Plan. These include "proposed voluntary and regulatory measures to reduce emissions from ports, warehouses, airports, rail yards, and new development."[45] The first of this series of measures, Rule 2305 applying to warehouses,[46] was adopted by SCAQMD on May 7, 2021, and is now being implemented. At the time of adoption, SCAQMD staff estimated the measure would reduce between 1.5 to 3.0 tons per day of NOx beyond existing CARB mobile source regulations.[47, 48] Other measures affecting other sectors are also in development.

- On October 11, 2019, Governor Gavin Newsom signed Assembly Bill (AB) 423 into law (effective January 1, 2020). Among other obligations, AB 423 requires the District to "consider adopting an indirect source rule to address pollution from mobile sources that is associated with stationary sources, such as ports, warehouses, and distribution centers."[49]

- On August 11, 2022, the District Governing Board heard an informational update regarding the District's pursuance of a possible ISR measure in the future, as well as other potential strategies, in relation to AB 423 requirements.

SCAQMD's Indirect Source Rules for Warehouses

SCAQMD Rule 2305 collects revenue from large distribution and fulfilment warehouses in the South Coast air basin. Affected facilities can earn points in a number of different ways that would avoid such fees. Examples include attracting zero and near-zero emission trucks to their facilities, investing in zero and near-zero emission equipment and infrastructure for their own fleet, and/or installing rooftop solar panels on the warehouse itself. Warehouse owners/operators that fail to earn minimum required points on an annual basis are required to pay mitigation fees that reimburse the SCAQMD for ensuring compliance with the rule. Fees collected are envisioned to be used for emission reduction incentive programs.

To comply with AB 423 and in response to Governing Board feedback, the District will continue to engage with stakeholders and the public in consideration of a possible future ISR measure(s) that may apply to ports, warehouses, and distribution centers in San Diego County. Over the next three years, the District will be exploring potential pathways for consideration, provided they are found to be feasible to implement in San Diego County, and could result in significant emission reductions. The District will also investigate our legal authority in such discussions, and consider how such strategies could work in relation to CARB's various mobile source control regulations. Potential pathways under consideration at this time, include a possible ISR rule(s) and/or voluntary agreements (such as Memorandums of Understanding, or MOUs) with applicable stakeholders that could potentially result in more timely emission reductions. The District tentatively plans to update the Governing Board once again in 2023 on the status of any proposed/possible ISR measures. As such, a possible ISR measure has been included in the District's list of scheduled measures for possible adoption (see Attachment H – Re-Evaluation of All Feasible Stationary Source Measures).

DISTRICT MOBILE SOURCE COMPLIANCE PROGRAM

The District's jurisdiction is primarily with stationary sources, such as manufacturing facilities, landfills, power plants, stationary engines, and other operations that can create air pollution. Regulatory authority for mobile sources lies with CARB and EPA. To help address air pollution contributions from mobile sources in the San Diego air basin, the District signed a Memorandum of Understanding (MOU) with CARB to enforce certain mobile source regulations on CARB's behalf. As a result, the District has the first and most comprehensive Mobile Source Program of any local air district in the state.

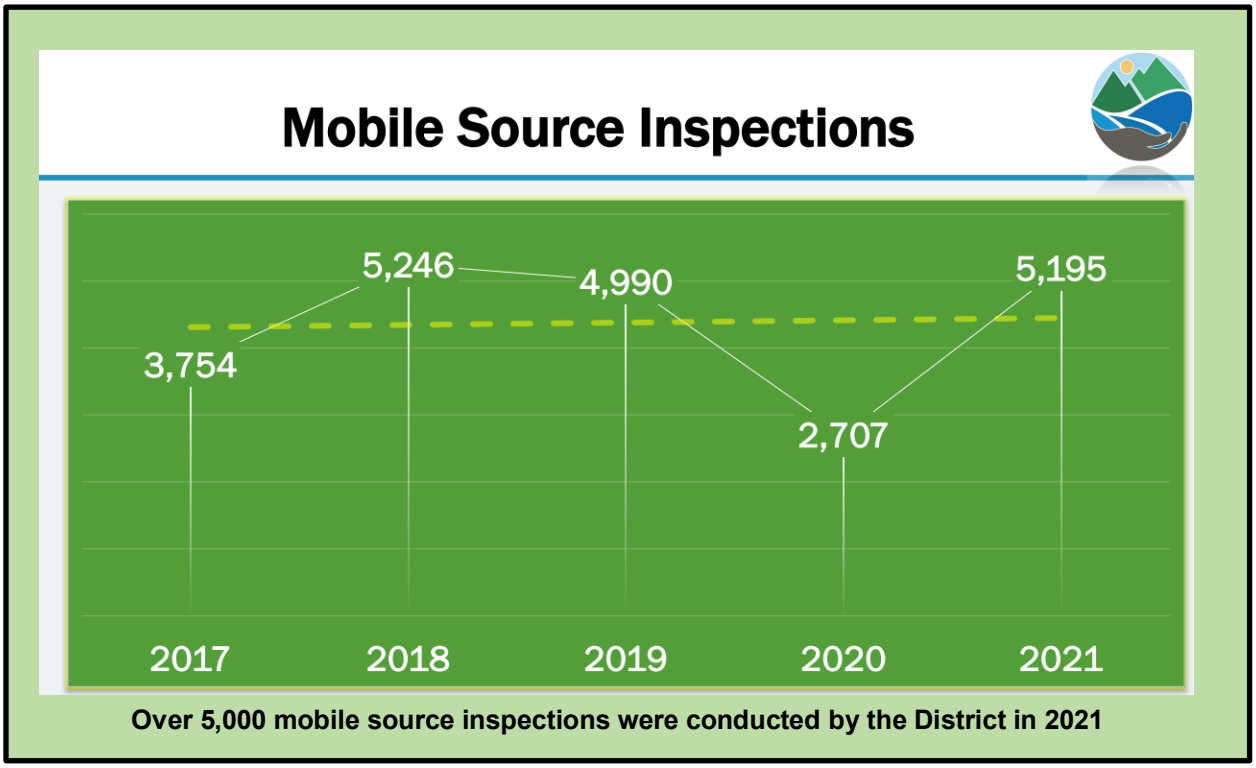
The District has been inspecting mobile source equipment on behalf of CARB since 2017

The MOU granted the District the authority to enforce specific mobile source regulations including the In-Use Off-Road Diesel Vehicle Regulation (Off-Road Construction Equipment), Statewide Truck and Bus Regulation, Heavy-Duty Diesel Smoke Emission Testing (HDVIP), Heavy-Duty Vehicle Emission Control System Inspections (ECL), and the In-Use Diesel-Fueled Transport Refrigeration Units. These regulations focus on reducing pollutants that form ozone and cause exposure to toxic diesel pollutants, which adversely impact public health especially in under-resourced communities.

The District's mobile source compliance team currently implements the requirements set forth in the MOU. The cost of this program is recovered with funding received from DMV motor vehicle registration fees. To date, mobile source inspections have been primarily conducted at:

(1) On-road heavy duty diesel vehicle and Transportation Refrigeration Unit inspections at California Highway Patrol weigh stations (e.g. San Ysidro/Otay Mesa Border, San Onofre on Interstate 5, and near Rainbow on Hwy 15).
(2) Off-road equipment inspections, such as forklifts, load handlers, and graders, at construction sites throughout San Diego County.
(3) Engine idling regulation enforcement within the Portside Environmental Justice neighborhood.

Annually, the District's mobile source compliance program conducts an average of 4,400 mobile source inspections and issues 600 citations. The District also has authority to settle mobile source citations issued for Off-Road Construction Equipment, Commercial Vehicle Idling, and Transport Refrigeration Units regulations. By conducting inspections under the MOU, taking enforcement actions when a violation is documented, providing training to regulated entities, and conducting extensive outreach, the mobile source compliance rate increased from 78% to 92% from 2017 to 2021.



Over 5,000 mobile source inspections were conducted by the District in 2021

Over the next three years, the District anticipates the mobile source compliance program will continue to enforce all applicable regulations in the MOU. Resources permitting, the District will also explore additional opportunities to locally enforce additional CARB mobile source regulations. For example, in December of 2021 the District amended the MOU with CARB to also enforce the Commercial Harbor Craft regulation.[50] Commercial harbor craft are a significant source of ozone precursor and PM emissions, and will be a predominant source of ozone precursor emissions around seaports for decades to come. The recent MOU amendment aligns with one of the strategies found within the Portside Community Emission Reduction Plan (CERP), adopted by the Governing Board in July 2021, to encourage additional emission reductions within the affected community.

TRANSPORTATION CONTROL MEASURES (TCM)

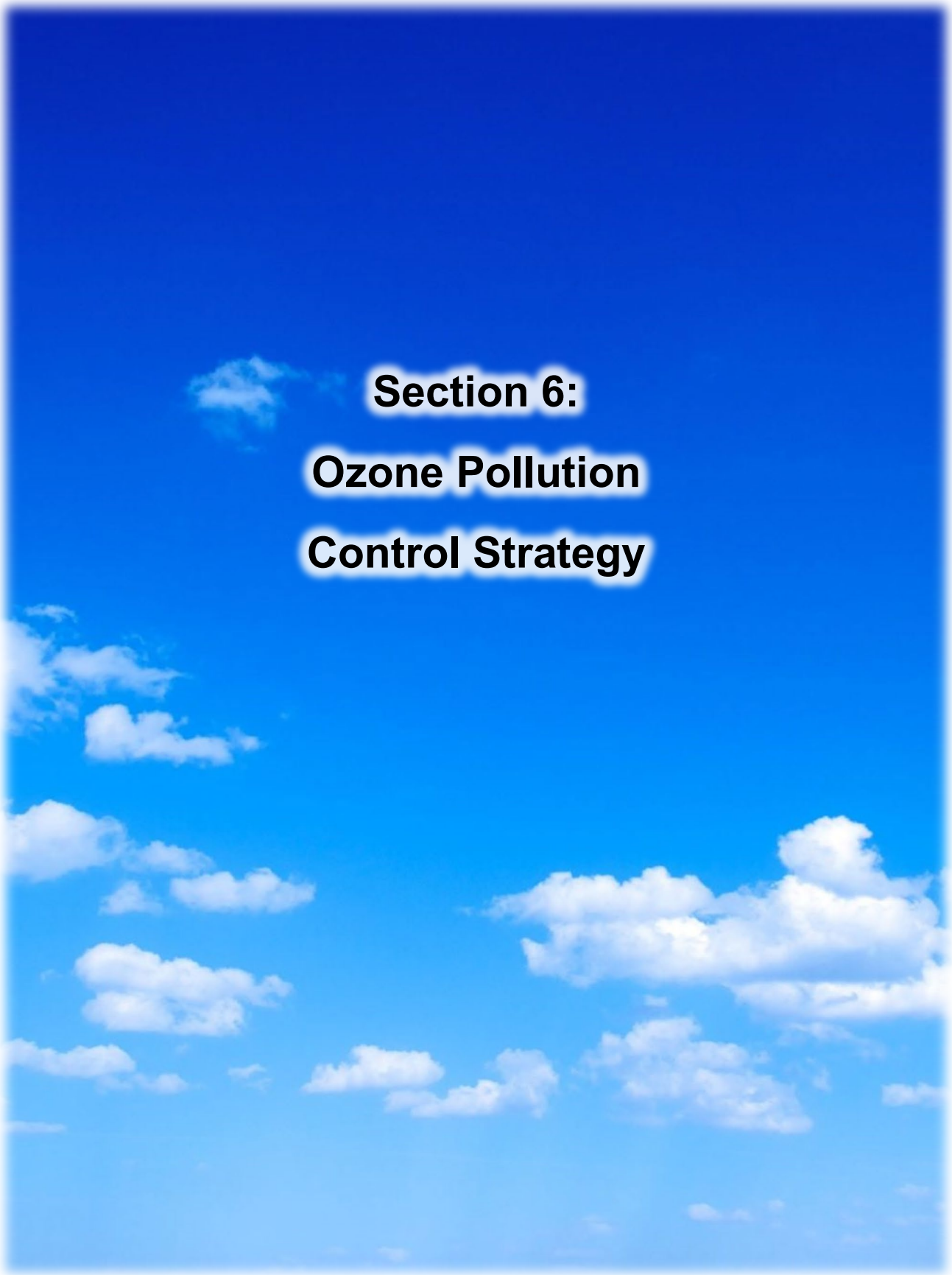
Efforts to improve the efficiency of transportation, reduce automobile use, and encourage alternative forms of transportation help reduce air pollution and GHG emissions, and improve air quality and energy security. Local governments can improve the efficiency of their own fleet by minimizing fuel consumption and emissions through reducing vehicle use, and purchasing clean and efficient vehicles. Additionally, local governments can also employ strategies that reduce transportation-related air pollution in their jurisdictions by reducing vehicle use and encouraging more efficient use of transportation facilities.

New zero-emission buses being procured and put into operation in under-resourced communities by the Metropolitan Transit System (MTS) and North County Transit District (NCTD) are examples of the "Transit Improvements" TCM being implemented in San Diego County

Such strategies, known as Transportation Control Measures (TCMs), reduce transportation-related air pollution, GHG emissions, and vehicle miles traveled (VMT) in different ways; many of which are already part of our everyday life. Because San Diego County has been designated as nonattainment for federal and state ozone standards, the region must continue to implement TCMs in a timely manner. The San Diego Association of Governments (SANDAG), the regional transportation planning agency, is primarily tasked with implementing regionwide TCMs. SANDAG originally prepared the "TCM Plan for Air Quality" for inclusion in the 1992 RAQS, which included six RAQS-specific TCMs, as listed below:

1. Transit Improvements;
2. Vanpools;
3. High-Occupancy Vehicle (HOV) Lanes;
4. Park-and-Ride Facilities;
5. Bicycle Facilities;
6. Traffic Signal Improvements.

Implementation continues for these six TCMs, and is consistent with program commitments made in San Diego Forward: The 2021 Regional Plan, adopted by the SANDAG Board on December 10, 2021. Emission reductions from these measures are expected to continue over the next three years as funding remains available. Further detail of each of these measures can be found in Attachment K (Transportation Control Measures). Taken together, these measures will help continue to reduce motor vehicle travel and emissions overall in San Diego County.


Section 6:
Ozone Pollution
Control Strategy

HIGHLIGHTS

- 22 possible new measures for adoption, amendment, or further study, are proposed for inclusion in the 2022 RAQS. These measures are in addition to the multitude of existing local, state, and federal emission reduction rules and regulations already in effect.
- The District's ozone pollution control strategy is guided by several priorities, which include, but are not limited to, reducing ozone precursor emissions, reducing GHGs and PM as co-benefits, prioritizing emission reductions in under-resourced communities, reducing demand for fossil fuels, supporting policies that reduce VMT and increase active transportation use, and supporting the transition to a 100% renewable and zero-emission energy and transportation system in San Diego County.
- The District does not have the authority to regulate every source of air pollution. However, the District still has several tools/resources available that could assist the pollution control strategy and help fulfill the above priorities. This includes providing incentive funding, generating best management practices, providing outreach and education opportunities, building regional strategic partnerships, and advocating at the legislative level when needed.
- As denoted in Table 5, the District has adopted or amended seven local stationary source rules that reduced 0.22 tons per day of VOC emissions, and 2.09 tons per day of NOx emissions, since the 2016 RAQS Revision.
- Eight additional stationary source measures are included in the 2022 RAQS, as denoted in Table 6. These measures are scheduled for consideration and possible adoption/amendment over the next three years, and if adopted, are predicted to reduce VOC emissions by 0.04 tons per day, and NOx emissions by 0.59 tons per day.
- 14 additional stationary source measures are included in the 2022 RAQS as further study measures, as denoted in Table 7 (Possible Stationary Source Control Measures Identified for Further Study by 2026). These further study measures require additional evaluation over the next three years. After evaluation, if warranted, the measures may be scheduled for possible consideration/adoption in a future RAQS Revision.

The 2022 RAQS defines an integrated, multi-pollutant control strategy to reduce emissions of ozone precursors and, as a co-benefit, GHGs and PM. The proposed control strategy is designed to complement and leverage efforts being implemented by partner agencies at the local, state, and federal levels to improve air quality and protect the climate. The proposed control strategy identifies individual control measures that reduce emissions of air and climate pollutants from a variety of emission sources. The proposed ozone pollution control strategy is based on the following priorities:

- Reduce ozone precursors (VOC and NOx) and as a co-benefit, reduce GHGs and PM.
- Prioritize criteria pollutant emission reductions at facilities near or adjacent to under-resourced communities affected by air pollution, pursuant to AB 617.
- Reduce the demand for fossil fuels (i.e., gasoline, diesel, and natural gas), VMT, and high-carbon goods and services through advancements in industrial/energy/transportation technologies and systems.

- Reduce motor vehicle travel by promoting transit, bicycling, walking, and ridesharing.
- Support new development to areas that are well-served by transit and conducive to bicycling and walking.
- Support the acceleration and widespread adoption of zero-emission vehicles.
- Promote the use of clean fuels and low- or zero-carbon technologies in heavy-duty trucks and equipment.
- Support de-carbonizing the regional energy system, such as transitioning to a 100% renewable regional energy grid and electrifying key transportation and building sectors.
- Support expanding production of low-carbon, renewable energy by promoting on-site technologies such as rooftop solar and wind.
- Support the expansion of community choice energy programs throughout San Diego County.
- Promote energy efficiency in both new and existing buildings.
- Promote the switch from natural gas-fueled appliances to 100% zero-emission electric appliances in San Diego County.

TOOLS AND RESOURCES AVAILABLE TO SUPPORT THE STRATEGY

The District does not have the regulatory authority to regulate certain sources of air pollution, such as mobile sources. However, the District can nonetheless support and advocate for possible control measures that could further reduce ozone and/or GHGs. As such, the 2022 RAQS includes several categories of implementation in which the District could be involved. These include:

- **Rulemaking**–- Using the District's regulatory and permitting authority to adopt and enforce rules to reduce emissions of air and climate pollutants where allowed.
- **Funding**–- Providing incentive funding to emission reduction projects from local, state, and federal funding sources.
- **Best Practices**–- Developing, supporting, or promoting the use of best practices by or for regional public agencies and other entities through planning guidance documents or informational campaigns.
- **Outreach and Education**–- Conducting marketing/publicity/media campaigns, disseminating educational materials, and engaging with community groups/school districts/industry/other local organizations.
- **Advocacy and Partnerships**–- Support for legislative action at the local, state, and federal levels, and working proactively with stakeholders to develop partnerships that can enable business, local government, and residents to work and learn together to develop viable air pollution and GHG reduction strategies.

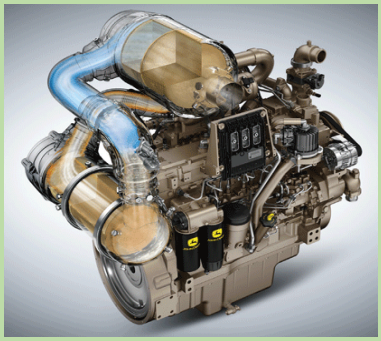
DISTRICT RULES ADOPTED OR AMENDED SINCE 2016 RAQS REVISION

The District previously adopted and continues to implement dozens of health-protective VOC and NOx emission control rules addressing all significant stationary source categories in San Diego County. Stationary source control measures that were identified in the 2016 RAQS Revision and adopted or amended are summarized in Table 5 (Stationary Source Control Measures Adopted Since 2016 RAQS Revision). A discussion of each measure can be found in Attachment G (RAQS Implementation Progress Since 2016).

Table 5
Stationary Source Control Measures Adopted Since 2016 RAQS Revision

Pollutant	Control Measure	Action
VOC	Further Control of Cold Solvent Cleaning and Stripping Operations	Amendment to Rule 67.6.1
VOC	Further Control of Vapor Degreasing Operations	Amendment to Rule 67.6.2
VOC	Further Control of Architectural Coatings	Amendment to Rule 67.0.1
NOx	Further Control of New/Replacement Stationary Reciprocating Internal Combustion Engines	Amendment to Rule 69.4.1
NOx	Control of New Water Heaters, Small Boilers, Process Heaters, and Steam Generators between 75,000 and 600,000 British Thermal Units (BTU)/hour	Amendment to Rule 69.2.1
NOx	Control of Medium Boilers, Process Heaters, and Steam Generators between 2-5 million BTU/hour	New Rule 69.2.2
NOx	Further Control of Stationary Gas Turbine Engines	Amendment to Rule 69.3.1





Local rules amended/adopted by the District since 2016 include lowering emission limits for small/medium-sized boilers, paints and coatings, and stationary internal combustion engines.

PROPOSED/SCHEDULED MEASURES FOR POSSIBLE ADOPTION OR AMENDMENT IN THE NEXT THREE YEARS

Additional feasible control measures eventually become available as regulatory programs move forward, control technologies improve, or control costs are reduced. State law requires plan updates to include an updated schedule for expeditiously adopting feasible stationary source control measures for ozone-precursor emission sources under an air district's purview.[51] Consequently, the District has scheduled the stationary control measures found in Table 6 (Stationary Source Control Measures Identified for Review and Possible Adoption/Amendment by 2026) for review and possible adoption between 2023-2026. A discussion of each measure can be found in Attachment H (Re-Evaluation of All Feasible Stationary Source Measures).

Table 6
Stationary Source Control Measures Identified for Review and Possible Adoption/Amendment by 2026

Pollutant	Control Measure	Action	Possible Emission Reductions	Possible Costs to Implement
NOx	Control of Emissions from Landfill Flares	New Rule 69.7	🏛	$
VOC	Control of Emissions from Restaurant Cooking Operations	New Rule	🍃🍃	$ $
VOC	Control of Emissions from Large Poultry Operations	New Rule	🏛	$
VOC	Further Control of Marine Coatings	Amendment to Rule 67.18	🍃	$
NOx	Further Control of Natural Gas-Fired Fan-Type Central Furnaces	Amendment to Rule 69.6	🍃🍃	$ $
NOx	Further Control of Stationary Gas Turbine Engines	Amendment to Rule 69.3.1	🍃🏛	$
NOx	Further Control of New/Replacement Stationary Reciprocating Internal Combustion Engines	Amendment to Rule 69.4.1	🍃🏛	$
NOx / PM	Indirect Source Rule	New Rule	🍃🍃	$ $ $

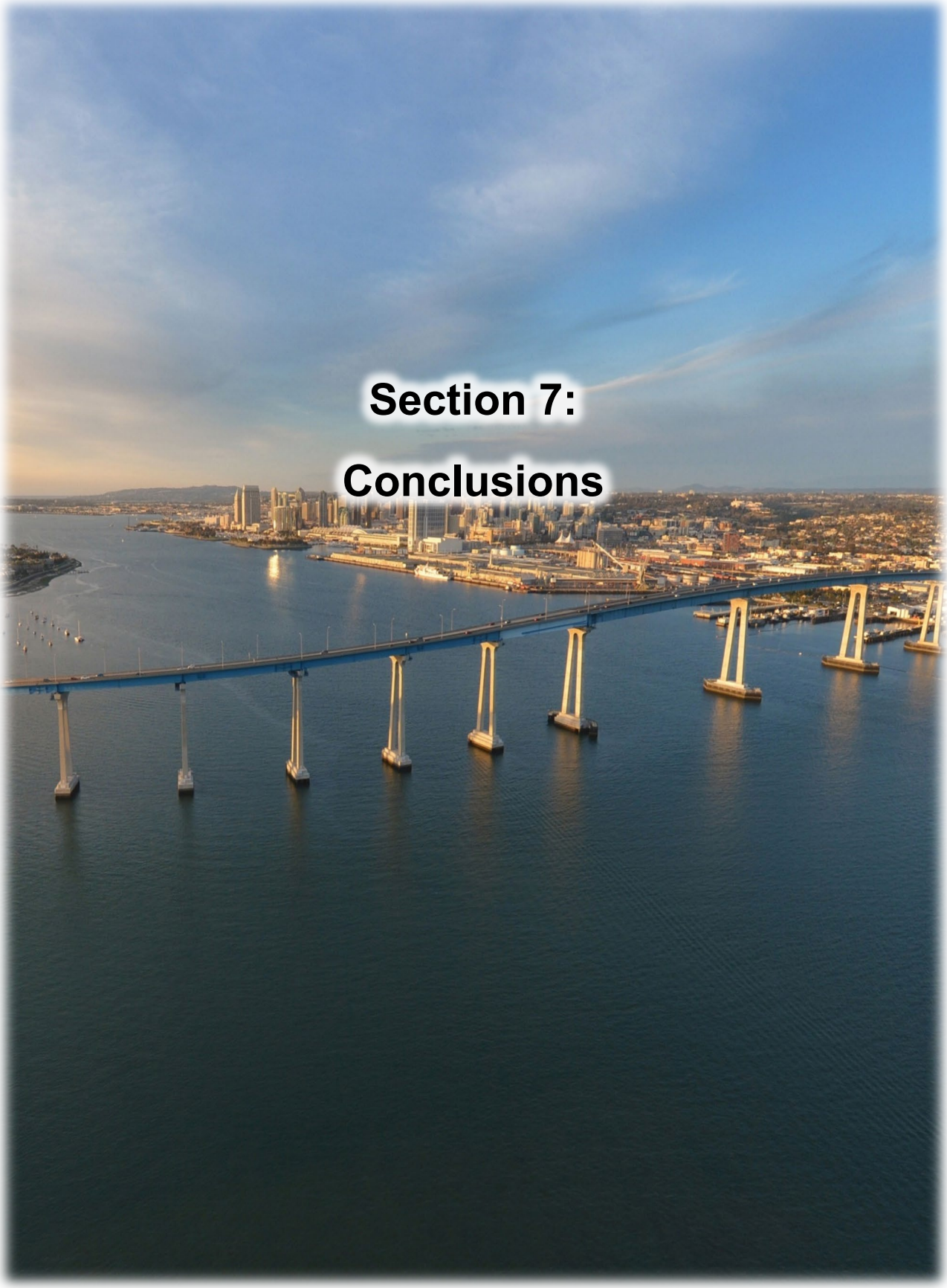
$ to $$$ = Least/Most expensive; 🍃 to 🍃🍃🍃 = Least/most emission reductions;
🏛 = Required by Rule/Regulation to ensure emission reductions stay in place

PROPOSED FURTHER STUDY MEASURES IN THE NEXT THREE YEARS

Additional measures require more analysis and time to assess a number of factors, including the number and nature of affected sources, estimated emissions and emission reduction potential, technological feasibility, and cost-effectiveness. The VOC and NOx measures identified in Table 7 (Possible Stationary Source Control Measures Identified for Further Study by 2026) require a more detailed analysis and more time to assess potential adoption/implementation in San Diego County. These measures are classified as "further study measures" and will be evaluated during the next three years by District staff. A screening will be conducted to determine if these possible measures merit further evaluation and priority status for San Diego County. District resources permitting, rule development would be pursued prior to that time if resulting emission reductions would be significant. If any of the further study measures are determined as possibly being feasible and cost-effective to implement in San Diego County, they will be scheduled for potential adoption in a subsequent RAQS Revision. A discussion of each measure can be found in Attachment I (Further Study Measures).

Table 7
Possible Stationary Source Control Measures Identified for Further Study by 2026

Pollutant	Further Study Control Measure	Action
VOC	Control of Emissions from Vacuum Truck Operations	New Rule
VOC	Further Control of Metal Parts and Products Coating Operations	Amendment to Rule 67.3
VOC	Further Control of Miscellaneous Surface Coating Operations and Other Processes Emitting Volatile Organic Compounds	Amendment to Rule 66.1
VOC	Further Control of Receiving and Storing Volatile Organic Compounds at Bulk Plants and Bulk Terminals	Amendment to Rule 61.1
VOC	Further Control of Aerospace Coatings	Amendment to Rule 67.9
VOC	Further Control of Adhesive Materials Application Operations	Amendment to Rule 67.21
VOC	Control of Emissions from Metalworking Fluids and Direct-Contact Lubricants	New Rule
VOC	Control of Emissions from Composting Operations (Non-Residential)	New Rule
VOC/PM	Further Control of Emissions from Wood-Burning Activities	New Rule
VOC/NOx	State Emission Offset Permitting Rule(s)	New Rule(s)
NOx	Control of Emissions from Miscellaneous NOx Sources	New Rule
NOx	Zero-Emission Central Furnaces	Amendment to Rule 69.6 (or New Rule)
NOx	Zero-Emission Residential Water Heaters	Amendment to Rule 69.5.1 (or New Rule)
NOx/VOC/ PM/GHG	Alternative Approaches to Reducing Criteria Pollutants and GHGs within District's Regulatory Authority	Various



Section 7:

Conclusions

CONCLUSIONS

Pursuant to state law, a revised ozone pollution control strategy must be at least as effective in improving air quality as the control strategy being replaced.[52]

- The District's proposed ozone pollution control strategy includes additional VOC and NOx control measures scheduled for review and possible adoption through 2026, and if adopted, will provide emission reductions beyond what was included in the 2016 RAQS Revision.
- Based on a preliminary evaluation, the eight scheduled measures[53] in the 2022 RAQS are estimated to reduce VOC by approximately 0.04 tons per day, and NOx by approximately 0.59 tons per day. These measures (if adopted/amended) will also reduce GHGs and PM as a co-benefit, and will improve air quality in under-resourced communities.
- 14 further study measures[54] included in the 2022 RAQS that could also further reduce VOC and NOx, and GHGs and PM as a co-benefit, in the near future. These measures will be evaluated through 2026 for feasibility and, if warranted, will be scheduled for rule adoption/amendment in a future RAQS Revision. These measures (if eventually adopted/amended in the future) will also improve air quality in under-resourced communities.
- The District will also pursue complementary and alternative strategies within the District's regulatory authority to further reduce VOC, NOx, GHGs, and PM emissions over the next three years. These include exploring additional incentive funding opportunities, developing best practices documents, enhancing regionwide outreach and education, developing strategic partnerships, and advocating for legislation as needed.

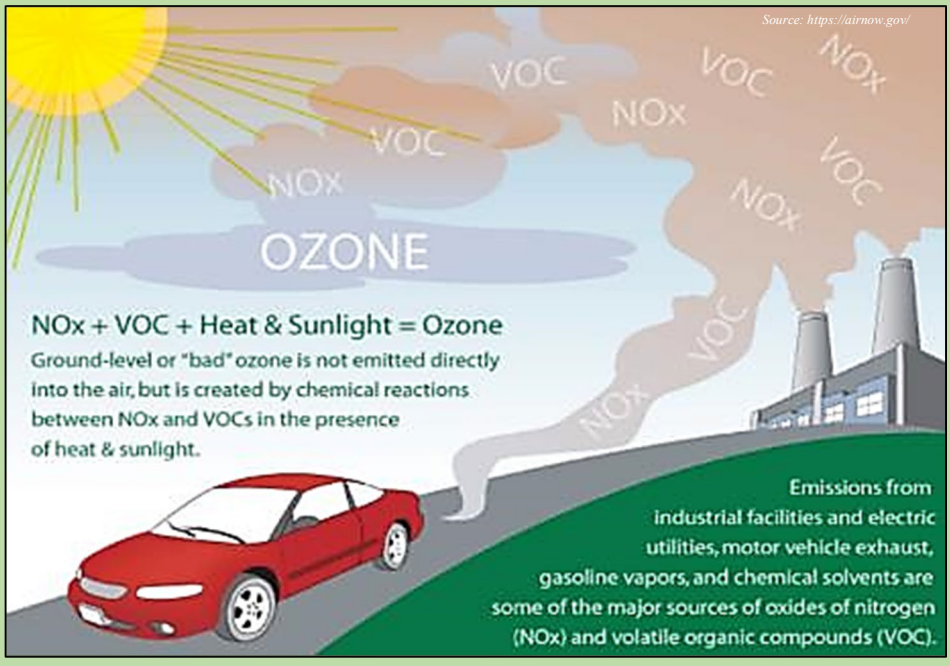
Combined, these strategies will provide additional reductions of ozone precursor emissions relative to the 2016 RAQS, set the region on a pathway to be carbon neutral by 2045, and further improve air quality near communities disproportionally impacted by air pollution. Thus, the 2022 RAQS is more effective in improving air quality.

ATTACHMENT A

STATUTORY REQUIREMENTS AND RELATIONSHIP BETWEEN THE RAQS AND THE SUBSEQUENT RULE DEVELOPMENT PROCESS

Air quality management in San Diego County is a shared responsibility among several agencies pursuant to state and federal laws. Locally, the San Diego County Air Pollution Control District (District) is entrusted with regulating stationary (fixed) sources of air pollution, including power plants, manufacturing and industrial facilities, stationary internal combustion engines, gas stations, landfills, and solvent cleaning and surface coating operations. Accordingly, the emission control measures identified in the RAQS focus on stationary sources.

Exposure to ozone at levels exceeding health-based standards can impact lung function by irritating and permanently damaging the respiratory system. Ozone is also harmful to crops and vegetation, and can damage rubber, plastic, and other materials. Approximately 62% of ozone precursor pollutants in the region are emitted by motor vehicles and other mobile sources (e.g., ships, trains, construction equipment, etc.). Emission standards for mobile sources are established by the California Air Resources Board (CARB) and the U.S. Environmental Protection Agency (EPA). The District has no



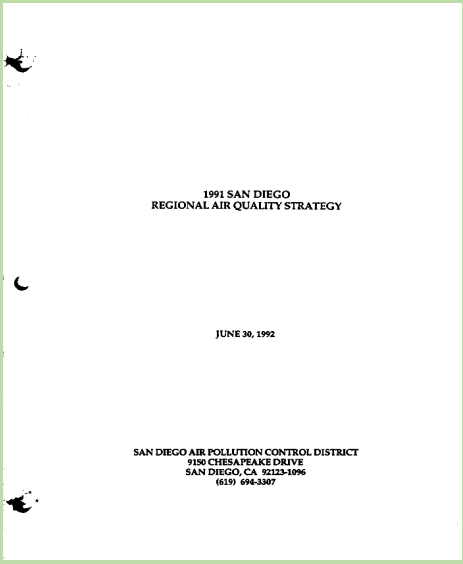
How ground-level ozone forms

jurisdiction over these sources. However, further reductions in mobile source emissions are encouraged by the District through its grant programs (e.g., Carl Moyer Program). These programs incentivize the turnover of high-polluting equipment by offering funds to qualifying projects that reduce mobile source emissions.

The District also encourages the public to reduce vehicle trips by using alternative means of transportation, and works closely with local groups to encourage thoughtful land use and street design improvements that reduce emissions. The reduction in mobile source emissions resulting from these and other efforts, along with the reduction in stationary source emissions from the District's control measures, collectively provide expeditious progress toward attainment of the ozone standards.

STATUTORY REQUIREMENTS

State law requires the RAQS to provide for a five percent average annual reduction in VOC and NOx emissions (averaged every consecutive three-year period). If that is not achievable, the RAQS must include an expeditious schedule for adopting every feasible emission control measure under an air district's purview.[55] The 2022 RAQS reflects expeditious adoption of every feasible control measure. Notably, none of the state's 35 air districts have demonstrated a sustained five percent average annual reduction in VOC and NOx emissions. State law also requires periodic progress reports regarding implementation of control measures and plan revisions, as necessary, to reflect and respond to changing circumstances.[56] An air district may revise an emission reduction strategy if it demonstrates to CARB's satisfaction that the modified strategy is at least as effective in improving air quality as the strategy being replaced.[57] The RAQS was initially adopted by the San Diego County Air Pollution Control Board (Board) in June 1992, and has been revised six times. The RAQS was last updated in December 2016.


1991 SAN DIEGO
REGIONAL AIR QUALITY STRATEGY

JUNE 30, 1992

SAN DIEGO AIR POLLUTION CONTROL DISTRICT
9150 CHESAPEAKE DRIVE
SAN DIEGO, CA 92123-1096
(619) 694-3307

The original RAQS, as adopted by the Air Pollution Control Board in 1992

The 2022 RAQS was prepared pursuant to CARB guidance and complies with the applicable requirements of the CCAA as follows:

Table A-1
RAQS Statutory Requirements

Category	Guidance	Description/ Requirement	2022 RAQS Section
Air Quality Improvement	California Health and Safety Code (H&SC) §40924(b)(1)	Assess the extent of ozone air quality improvement achieved during the preceding three years	Attachment B
Countywide Emission Reduction Rates	H&SC §40925(a)	Compare estimated rates of total countywide emission reductions over the preceding three years to the rates previously anticipated in the RAQS for that same period, and incorporate updated projections of population, industry, and vehicle-related emissions growth	Attachment B
Rule Adoption Dates	H&SC §40924(a)	Compare the forecasted and actual dates for adopting and implementing each air district control measure	Attachments G, H, and I
Control Measure Emission Reductions	H&SC §40924(b)(2)	Compare the expected emission reductions for each control measure to a newly revised estimate	Attachments G, H, and I
Control Measure Cost-Effectiveness	H&SC §40922(a)	Include an assessment of the cost-effectiveness of available and proposed control measures and contain a list which ranks the control measures from the least cost-effective to the most cost-effective	Attachments G, H, and I
Updated Rule Adoption Schedule	H&SC §40914(b)(2)	Include an updated schedule for expeditiously adopting every feasible control measure for emission sources under the District's purview	Attachments H and I
Emission Offsets	H&SC §40918.6	Determine whether the locally repealed state requirements for emission offsets should be reinstated to achieve and maintain state ozone standards by the earliest practicable date	Attachment L
Incentive Programs	CARB 2003 Triennial Assessment and Plan Revisions	Pursuant to CARB guidance, RAQS must include a summary of existing financial incentive programs for reducing emissions	Attachment J

RELATIONSHIP BETWEEN THE RAQS AND THE SUBSEQUENT RULE DEVELOPMENT PROCESS.

The 2022 RAQS reflects the District's projection of future local regulatory activity for the purposes of providing expeditious progress toward attaining the state ozone standards. As planned activities, the proposed control measures found in Attachments H and I are initial proposals based on preliminary evaluation of currently available information, and are subject to the rule development process and Board consideration prior to implementation.

The rule development process includes many steps, including an overall assessment of emission reductions necessary to attain the state and federal ozone standards as expeditiously as practicable. Should further emission reductions be necessary, the District reviews control measures and adopted rules in other regions, consults with affected parties, develops draft rules and technical support documentation, conducts environmental reviews, and encourages the public to review and comment. Consideration of proposed rules is conducted by the Governing Board at a public hearing. During rule development, new information may become available regarding the availability of control technologies, emission reduction potential, costs of measures, and other factors. Consequently, the scheduling of rule adoption hearings, the estimated emission benefits, and the cost effectiveness may ultimately differ from that identified in the RAQS.

Rule development is a public process.
All stakeholders are welcome to participate and provide feedback

ATTACHMENT B

OZONE POLLUTION TRENDS AND EMISSION REDUCTION RATES

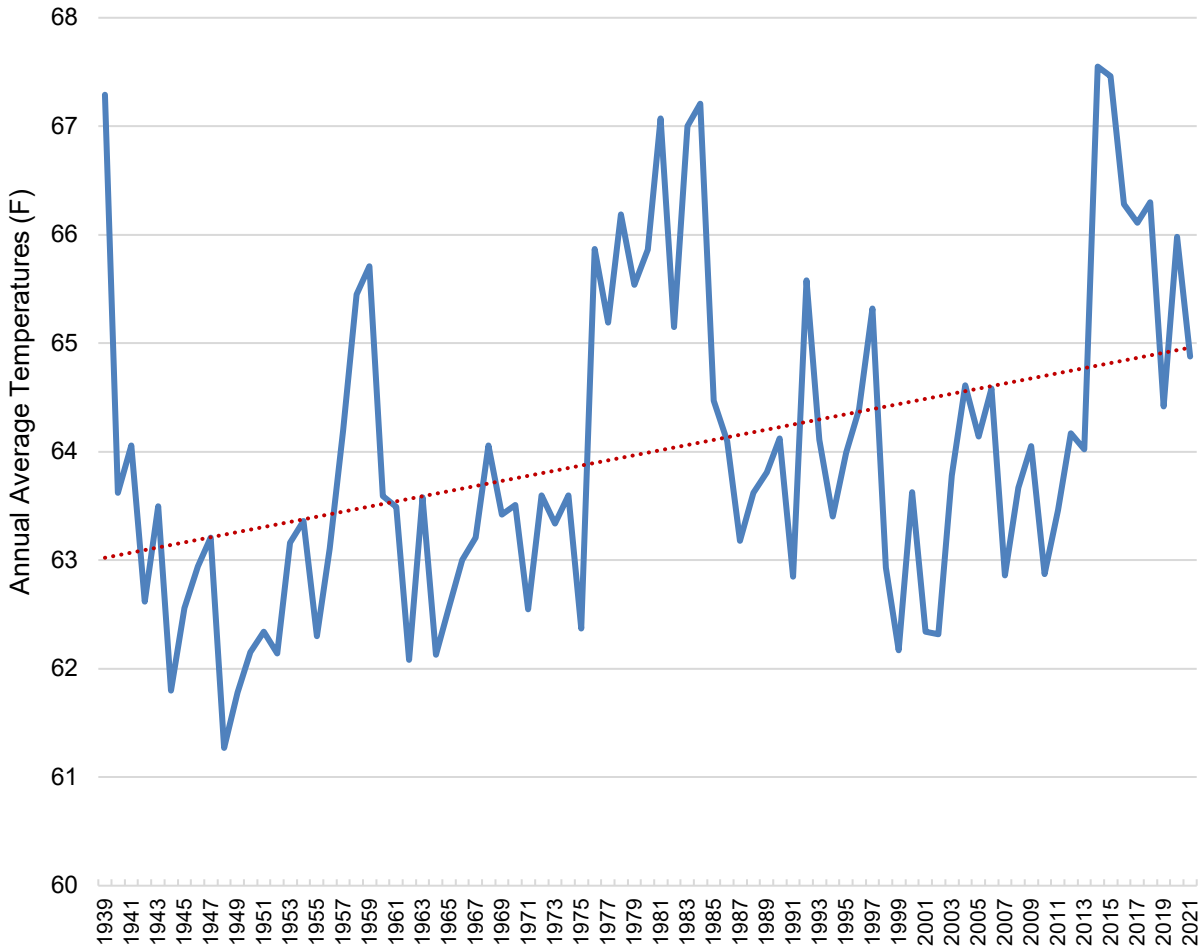
Between 2015 and 2021, daily VOC emissions were reduced 2.1% annually, while NOx emissions were reduced 3.4% annually. Further reductions are anticipated through 2040 given the local, state and federal control measures already in place. Additional VOC and NOx control measures have also been scheduled for consideration and, if warranted, adoption over the next three years by the District in the 2022 RAQS. The anticipated VOC emission reductions (if adopted) will equate to approximately 0.04 tons per day upon full implementation, and anticipated NOx emission reductions (if adopted) will equate to approximately 0.59 tons per day upon full implementation.

OZONE AIR QUALITY TRENDS

State law requires a triennial assessment of ozone air quality improvement achieved during the preceding three years based on ambient pollutant measurements and air quality indicators.[58] Measurements of ambient ozone pollution are collected continuously at nine sites in the region to identify the status and trend of ambient air quality.[59] The resulting data indicates that San Diego County's air quality has substantially improved over the past four decades due to emission control efforts, despite continued growth in population and motor vehicle usage. In fact, San Diego County is among the most improved in the state for reducing exceedances of the state one-hour ozone standard.

Major air quality milestones were achieved in 2001 and 2011. Specifically, the region attained the former national one-hour ozone standard in 2001,[60] and attained the former national eight-hour ozone standard in 2011.[61] Ozone air quality continued to improve through 2013, which was the cleanest year on record. As shown in Figure B-1, warm weather between 2014 and 2017 resulted in slight ozone concentration increases compared to 2013 levels, despite ongoing reductions in ozone-forming emissions. Air quality data since that time suggests ozone concentration levels are on a downward trend once again, albeit at a slower than historical pace.

Figure B-1
Annual Average Temperature at San Diego International Airport, 1939-2021



In 2005, CARB established the current state eight-hour average standard of 0.070 ppm while retaining the current 0.090 ppm state one-hour ozone standard. In 2008, the EPA established a national eight-hour ozone standard of 0.075 ppm. However, in 2015, the EPA adopted a more health-protective eight-hour ozone standard of 0.070 ppm, aligning the national standard with the state ozone standard. Rather than revoke the outdated 0.075 ppm national standard, the EPA left the standard in place for nonattainment areas, like San Diego County, until the region attains the 0.075 ppm standard.[62] As such, San Diego County is currently considered nonattainment for both national eight-hour ozone standards. San Diego County's progress in meeting these standards is presented in Figure B-2 and Table B-1, which identify the number of days the state ozone standards were exceeded between 1977 (the earliest year with comparable data) and 2021.

Figure B-2
Days Exceeding State Air Quality Standards for Ozone
San Diego County, 1977-2021

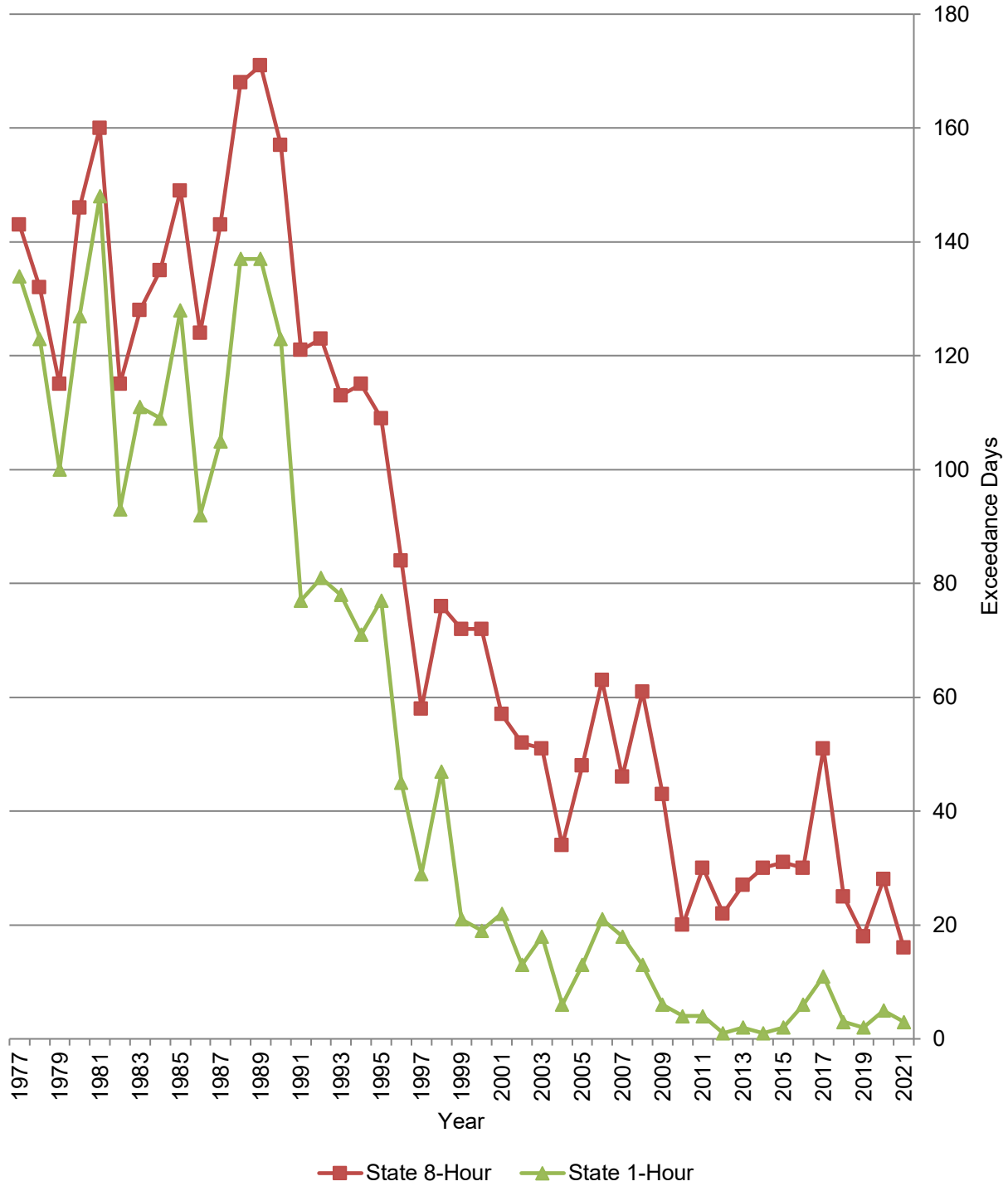


Table B-1
Days Exceeding Air Quality Standards for Ozone, San Diego County (1977-2021)

Year	State		Federal	
	8-Hour	1-Hour	2008 8-Hour	2015 8-Hour
2021	16	3	7	16
2020	28	5	13	24
2019	18	2	4	16
2018	25	3	8	23
2017	51	11	26	48
2016	30	6	13	29
2015	31	2	11	30
2014	30	1	10	28
2013	27	2	6	24
2012	22	1	7	21
2011	30	4	10	29
2010	20	4	12	19
2009	43	6	22	40
2008	61	13	31	58
2007	46	18	23	44
2006	63	21	37	63
2005	48	13	23	42
2004	34	6	14	32
2003	51	18	34	49
2002	52	13	28	51
2001	57	22	39	53
2000	72	19	43	69
1999	72	21	42	68
1998	76	47	51	76
1997	58	29	35	54
1996	84	45	56	82
1995	109	77	79	106
1994	115	71	83	112
1993	113	78	84	107
1992	123	81	93	123
1991	121	77	94	120
1990	157	123	136	157
1989	171	137	151	171
1988	168	137	151	168
1987	143	105	118	142
1986	124	92	97	121
1985	149	128	127	148
1984	135	109	113	132
1983	128	111	113	127
1982	115	93	86	114
1981	160	148	142	160
1980	146	127	132	143
1979	115	100	99	115
1978	132	123	121	129
1977	143	134	126	143

Note: Table indicates the number of days when any monitoring station in the County recorded an exceedance of the indicated standard.
Data Source: CARB

The state one-hour ozone standard was exceeded on 134 days in 1977, but improved significantly to just three days over that standard in 2021 (a 97% improvement). Over the same 44-year period (1977-2021), the region's population grew by 94% (from 1.7 million to 3.3 million) and daily motor vehicle mileage almost tripled (from 34 million to 95 million miles). This air quality improvement despite regional growth clearly shows emission

control measures are working. Notwithstanding this progress, current state and federal ozone standards are not yet attained, and continued emission reduction efforts are needed. Moreover, projected increases in motor vehicle usage, along with population and industrial growth,[63] means there will be significant challenges to reduce emissions as the District acts to maintain and further improve air quality.

COUNTYWIDE EMISSION REDUCTION RATES

As shown in Table B-2, VOC and NOx emissions were reduced by larger percentages over the 2015-2021 period than were projected in the 2016 RAQS Revision. Updated emissions inventory data indicate that countywide daily VOC emissions decreased by 15 tons (from 121 tons to 106 tons) between 2015 and 2021, a 2.1% average annual reduction compared to the previously projected 1.7% average annual reduction. Daily NOx emissions decreased by 19 tons (from 96 tons to 77 tons), a 3.4% average annual reduction compared to the previously projected 2.1% average annual reduction.

Table B-2
Rates of Emission Reduction (VOC & NOx), 2015-2021 (tons/day)*,**

Pollutant	2015	2016	2017	2018	2019	2020	2021	Annual Average Rate of Reduction 2015-2021	2016 RAQS Expected Rate of Reduction †
VOC Stationary	27.7685	29.1106	27.6354	27.1896	26.6991	26.0230	25.9965	-1.0%	
% Reduction	--	*4.8%*	*-5.1%*	*-1.6%*	*-1.8%*	*-2.5%*	*-0.1%*		
VOC Areawide	32.9458	32.3725	32.9633	33.1299	33.7766	34.4813	33.8142	0.4%	
% Reduction	--	*-1.7%*	*1.8%*	*0.5%*	*2.0%*	*2.1%*	*-1.9%*		
VOC Mobile	60.2222	56.5390	54.6851	52.3320	50.1657	48.1793	46.5819	-4.2%	
% Reduction	--	*-6.1%*	*-3.3%*	*-4.3%*	*-4.1%*	*-4.0%*	*-3.3%*		
VOC Total	120.9365	118.0221	115.2837	112.6514	110.6414	108.6836	106.3925	**-2.1%**	**-1.7%**
% Reduction	--	*-2.4%*	*-2.3%*	*-2.3%*	*-1.8%*	*-1.8%*	*-2.1%*		
NOx Stationary	4.4658	4.4377	4.4243	4.1159	4.0103	4.1615	4.1635	-1.1%	
% Reduction	--	*-0.6%*	*-0.3%*	*-7.0%*	*-2.6%*	*3.8%*	*0.0%*		
NOx Areawide	2.6845	2.7515	2.7424	2.4644	2.5261	2.4048	2.2939	-2.5%	
% Reduction	--	*2.5%*	*-0.3%*	*-10.1%*	*2.5%*	*-4.8%*	*-4.6%*		
NOx Mobile	88.9963	83.4781	85.6413	84.0643	80.2778	73.9799	71.3394	-3.6%	
% Reduction	--	*-6.2%*	*2.6%*	*-1.8%*	*-4.5%*	*-7.8%*	*-3.6%*		
NOx Total	96.1466	90.6673	92.8080	90.6446	86.8143	80.5463	77.7968	**-3.4%**	**-2.1%**
% Reduction	--	*-5.7%*	*2.4%*	*-2.3%*	*-4.2%*	*-7.2%*	*-3.4%*		

* Source: CARB 2019 California Emissions Projection Analysis Model (CEPAM), Version 1.04.
** Negative percentages indicate emission reductions; positive percentages indicate increases.
† Derived from emissions data in 2016 RAQS Revision (Attachment II, Tables II-15 and II-16).

COUNTYWIDE EMISSION TRENDS AND PROJECTIONS

VOC emission trends from 2000 through 2050 are presented in Table B-3 and Figures B-3 and B-4, while NOx emission trends are presented in Table B-4 and Figures B-5 and B-6.[64] As mentioned above, between 2015 and 2021, total emissions were reduced at an average annual rate of 2.1% for VOC and 3.4% for NOx. Based on regulatory actions already taken, total NOx emissions are expected to continue decreasing through 2050 due to ongoing implementation of existing local stationary source rules, as well as state and federal mobile source regulations. Total VOC emissions are expected to continue decreasing through 2035, at which point emissions are projected to slightly increase due to enhanced use of stationary and areawide sources stemming from population growth. Projections of future emissions are based on currently adopted control measures and growth forecasts, and do not reflect the emission benefits of rules that are not yet adopted (such as those scheduled in this RAQS Revision for possible adoption during the next three years, or those proposed in CARB's 2022 State SIP Strategy).

Table B-3
VOC Emission Trends[65]
(tons/day)

Sources	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045	2050
Stationary Sources	38	37	30	28	26	26	25	26	28	30	32
Area-Wide Sources	36	33	32	33	34	35	36	38	39	39	43
On-Road Motor Vehicles	76	52	38	26	17	13	11	9	8	8	7
Other Mobile Sources	59	52	42	35	31	28	22	19	17	16	17
Total	208	174	142	121	109	101	94	92	92	93	98

Table B-4
NOx Emission Trends[66]
(tons/day)

Sources	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045	2050
Stationary Sources	13	8	5	4	4	4	4	4	4	4	5
Areawide Sources	3	3	3	3	2	2	2	2	1	1	1
On-Road Motor Vehicles	142	112	78	47	29	15	11	9	8	8	7
Other Mobile Sources	57	52	46	42	45	43	42	41	39	37	38
Total	216	174	132	96	81	65	58	56	52	51	50

Figure B-3
VOC Emission Trends
(tons/day)

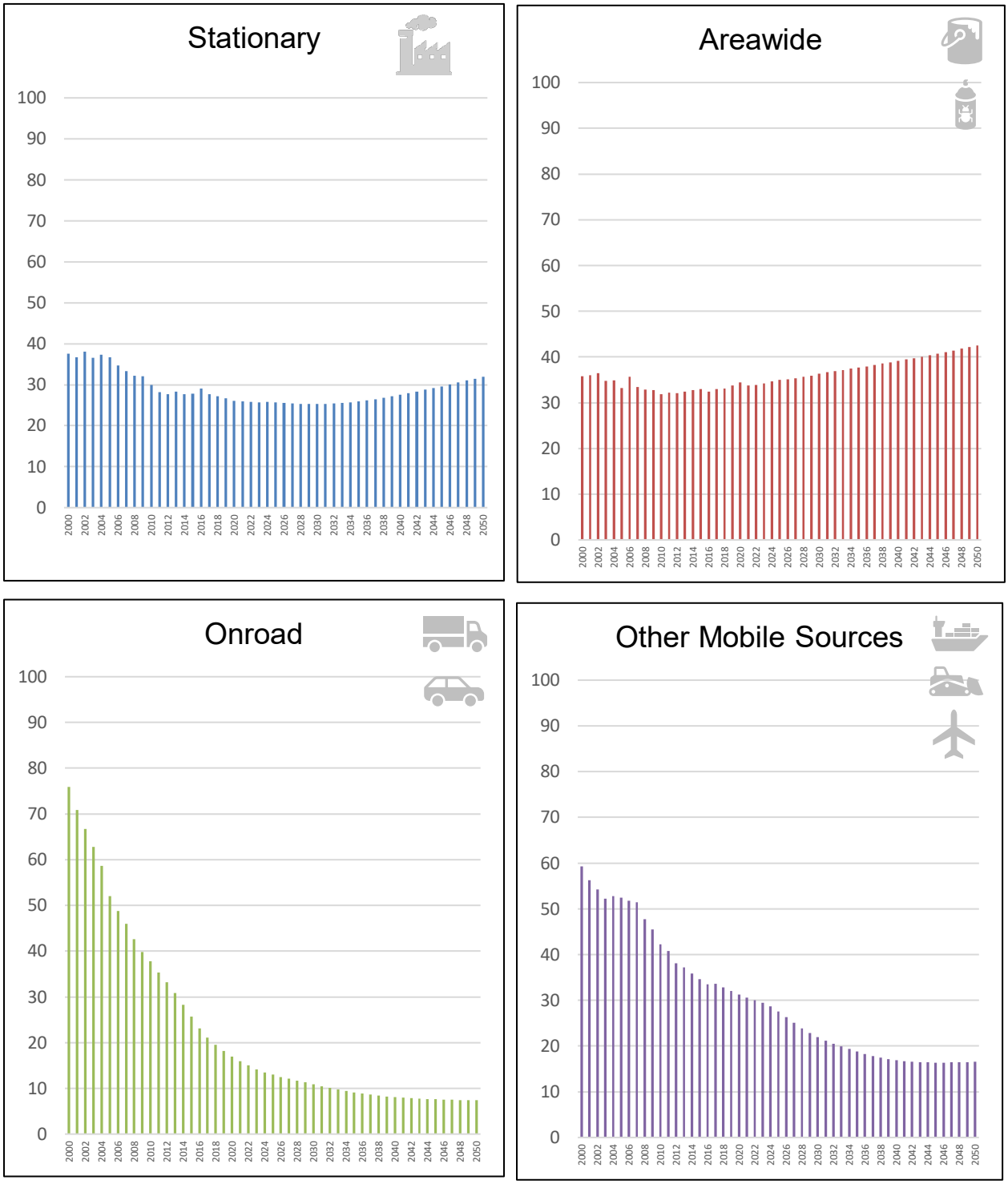


Figure B-4
VOC Emissions in 2000, 2022, and 2050
(tons/day)

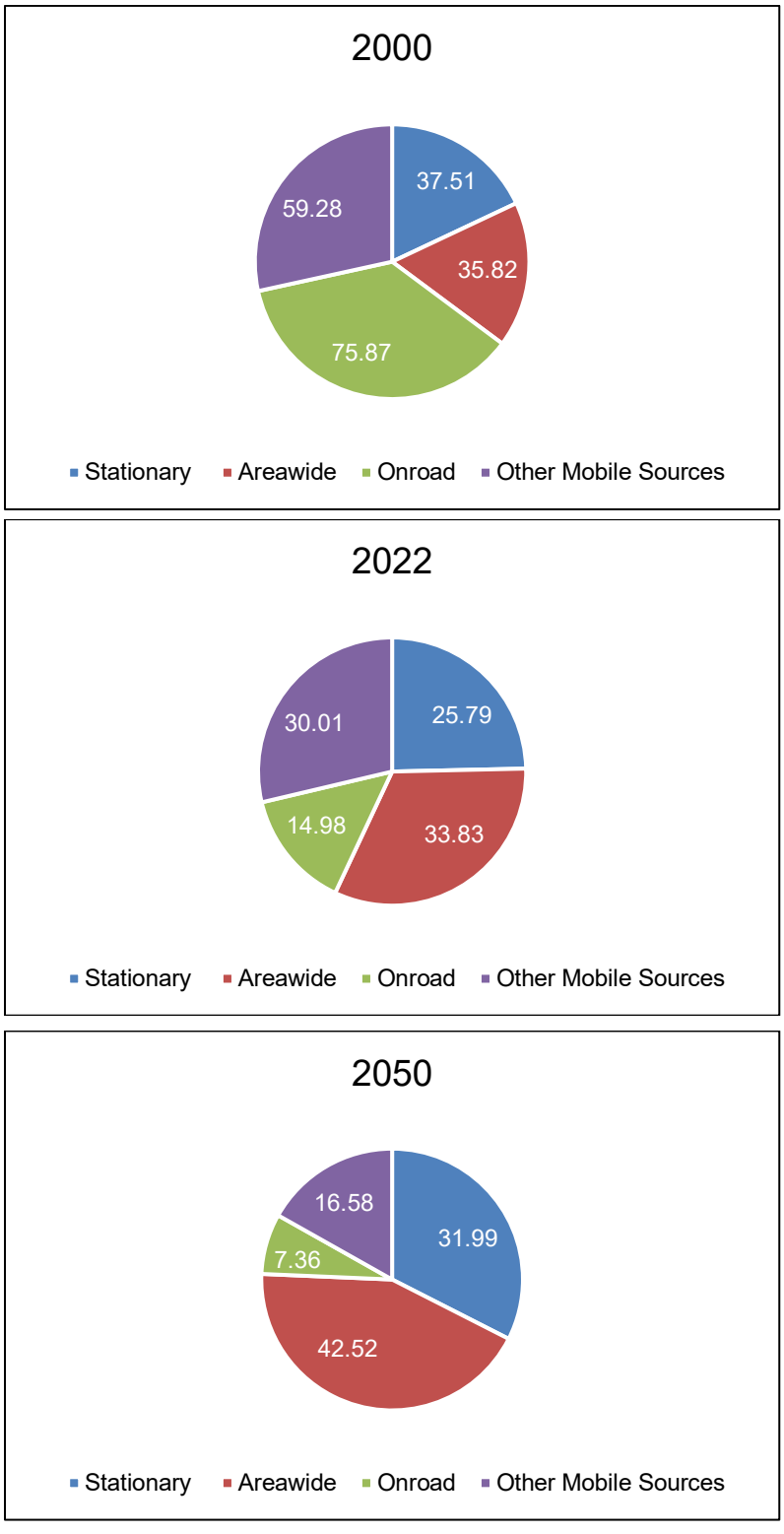


Figure B-5
NOx Emission Trends
(tons/day)

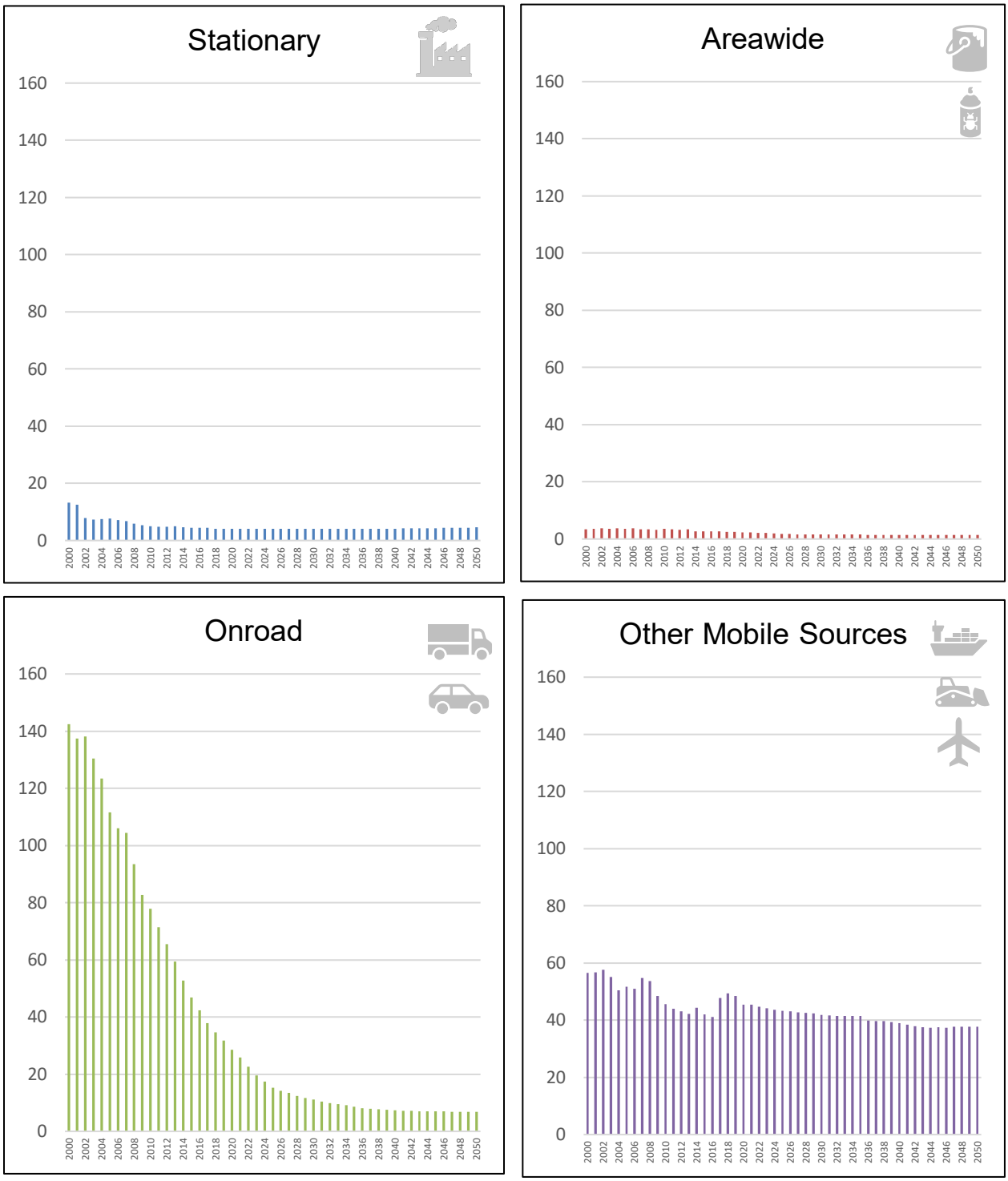
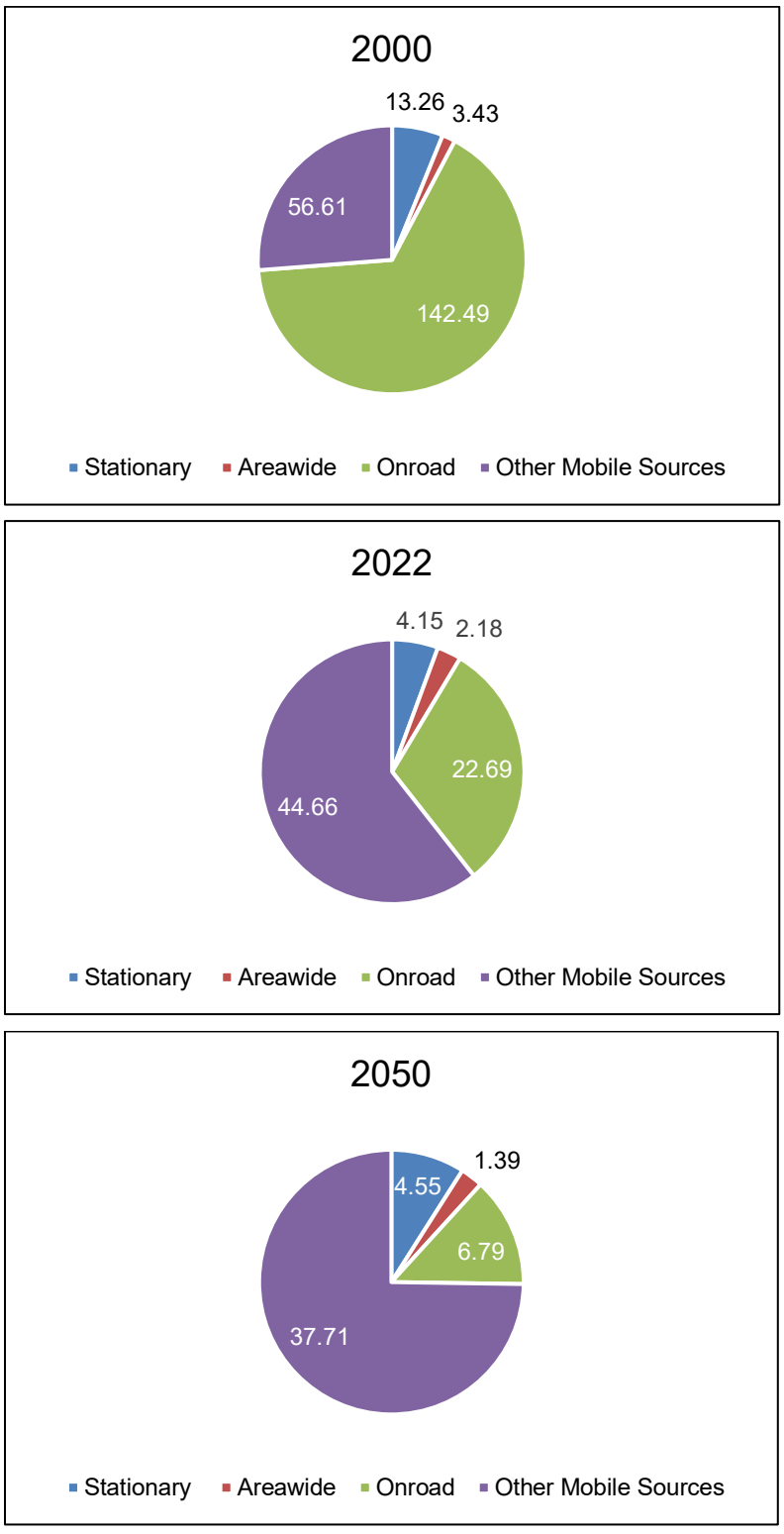


Figure B-6
NOx Emissions in 2000, 2022, and 2050
(tons/day)



ATTACHMENT C

AIR QUALITY AND EXPOSURE INDICATORS

AIR QUALITY INDICATORS

Three statistical indicators are used to assess air quality improvement for ozone based on the monitored air quality data. These are: (1) population-weighted ozone exposure, (2) area-weighted ozone exposure, and (3) the Expected Peak Day Concentration (EPDC). CARB computes each indicator for San Diego County based on monitored air quality data, comparing a three-year base period to a three-year end period.[67] The indicators are averaged over three years to moderate the influence of year-to-year meteorology changes (over which the area has no control) and to better represent trends.

Exposure Indicators

Population-weighted ozone exposure reflects the potential average outdoor exposure per person to concentrations above the state one-hour and eight-hour ozone standards. It is reported in terms of parts per million–hours (ppm-hours) for each year. Population-weighted ozone exposure is a good indicator of the extent and severity of the ozone problem for human health because it indicates whether relatively few people or many people are being exposed to unhealthful ozone levels, and for how long.

Area-weighted ozone exposure is similar except that it indicates whether relatively small areas of the region, or large areas, are being exposed to unhealthful ozone levels. The area-weighted exposure is an indicator of the exposure of crops and vegetation to the damaging effects of ozone.

Population-weighted and area-weighted ozone exposure indicators are presented in Table C-1. Population and area-weighted exposure to unhealthy ozone levels for the state one-hour ozone standard were reduced by more than 99% between 1986-1988 and 2018-2021, indicating substantial improvement resulting from effective emission control measures. Progress also occurred in population and area-weighted exposures relative to the state eight-hour ozone standard, although at a slower rate. Improvement slowed due to higher ozone concentrations that occurred in the 2018-2021 end period. Despite the slowdown, population-weighted exposure for the state eight-hour ozone standard still decreased by more than 48%, and area-weighted was reduced by more than 60%, between 2006-2008 and 2018-2021.

Table C-1
Ozone Exposure Indicators

Type of Exposure	Base Period 1986-1988	End Period 2018-2021	Difference (Base – End)	Percent Improvement
One-hour – Population-weighted (ppm-hours)	1.0899	0.0105	1.0794	99.0%
One-hour – Area-weighted (ppm-hours)	3.9967	0.0094	3.9873	99.7%
Type of Exposure	**Base Period 2006-2008**	**End Period 2018-2021**	**Difference (Base – End)**	**Percent Improvement**
Eight-hour – Population-weighted (ppm-hours)	0.203	0.103	0.099	48.9%
Eight-hour – Area-weighted (ppm-hours)	0.633	0.252	0.381	60.2%

Additionally, the trends in annual and three-year rolling averages of the population-weighted and area-weighted ozone exposure indicators are presented in Figures C-1 through C-4. A brief period of increase in the late 1980s indicated a need for additional emission reductions. After adoption of additional new District stationary source and area-source rules,[68] coupled with state requirements for low-emission and cleaner-burning gasoline, one-hour ozone exposure was significantly reduced. This continues today but at a more gradual pace.

Conversely, recent years of high ozone concentrations have contributed to an upward trend exhibited in eight-hour ozone exposure for both population and area-weighted indicators. The upward trend is more evident for area-weighted eight-hour ozone exposure than population-weighted eight-hour ozone exposure. This suggests that recent years of high ozone levels impacted more areas of San Diego County than in previous analyses, and likely impacted crops and vegetation throughout the region as a result. Monitoring data throughout San Diego County confirm the ozone increases region wide. The upswing in population-weighted indictors demonstrate a need for additional region wide emission reductions. As such, the District intends to adopt a number of stationary source rules (see Attachments H and I) that will provide critical VOC and NOx reductions throughout San Diego County. These will go along with numerous mobile source regulations at the state level being adopted by CARB, that will further reduce ozone precursor emissions.

Browning on leaves shows evidence of exposure to high concentrations of ozone

Figure C-1
Area-Weighted Ozone Exposure – State One-Hour

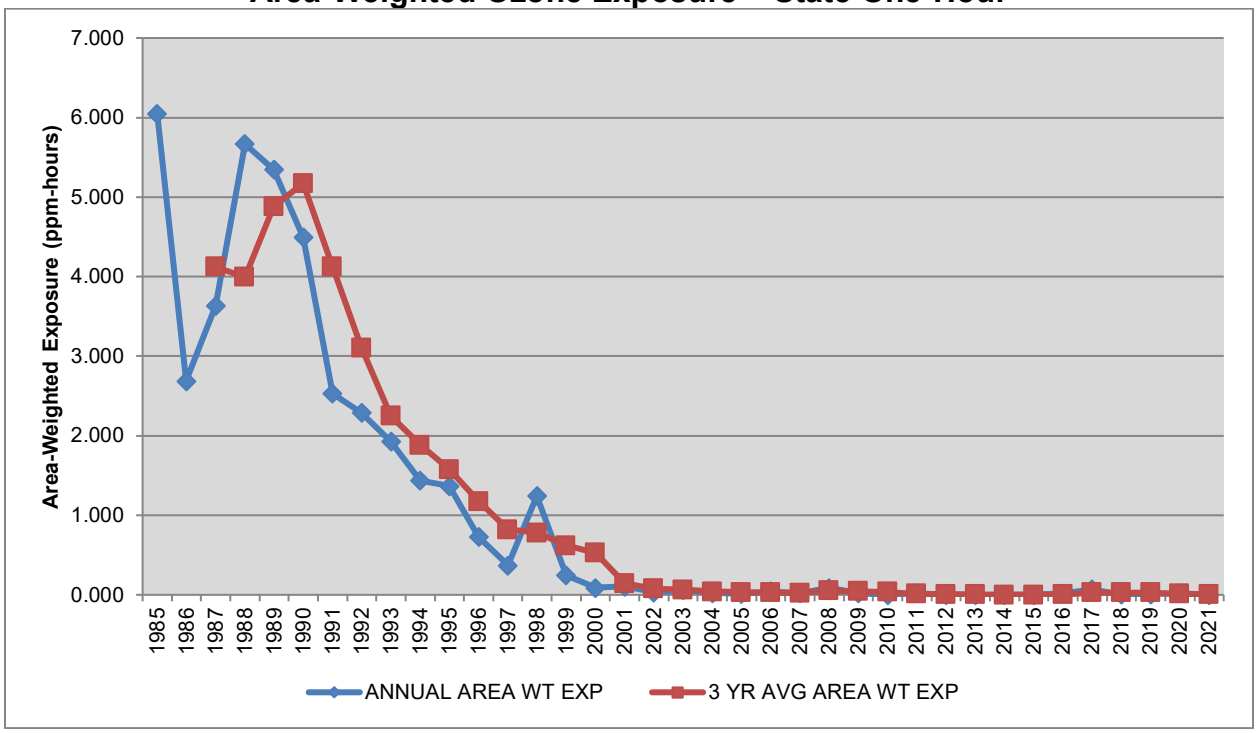


Figure C-2
Population-Weighted Ozone Exposure – State One-Hour

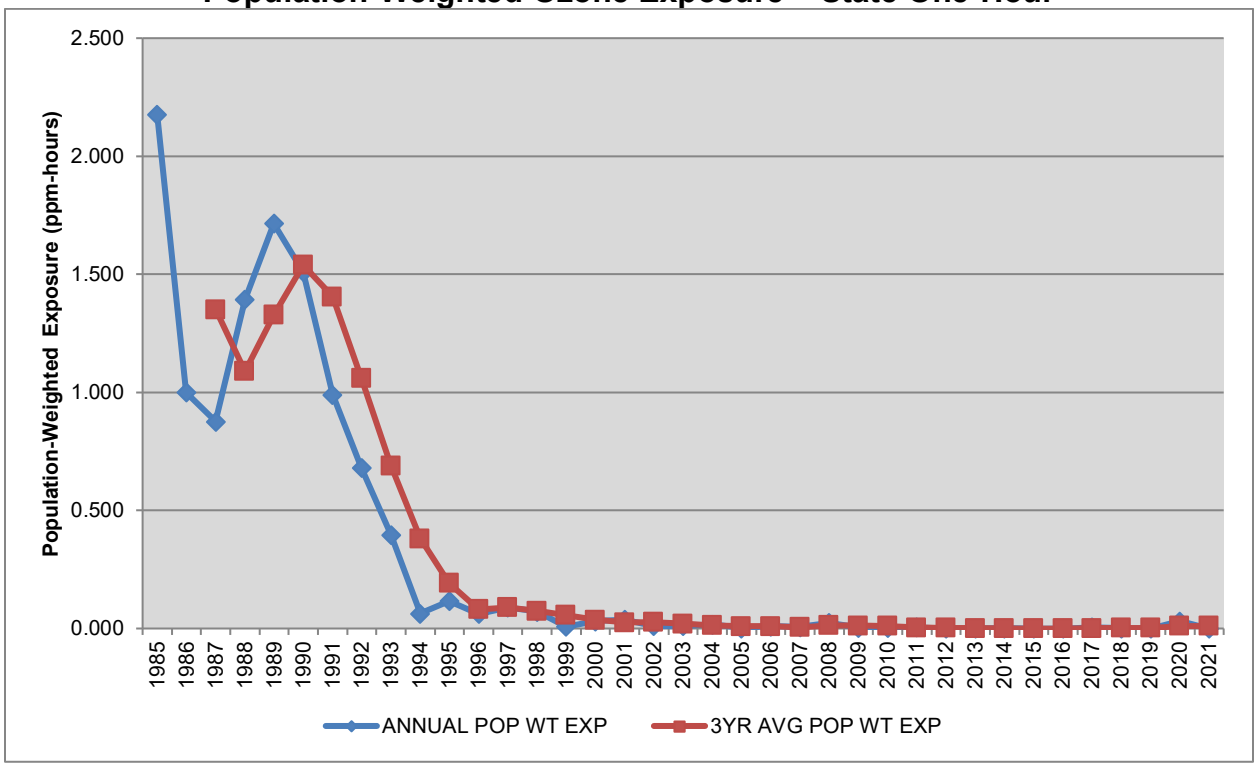


Figure C-3
Area-Weighted Ozone Exposure – State Eight-Hour

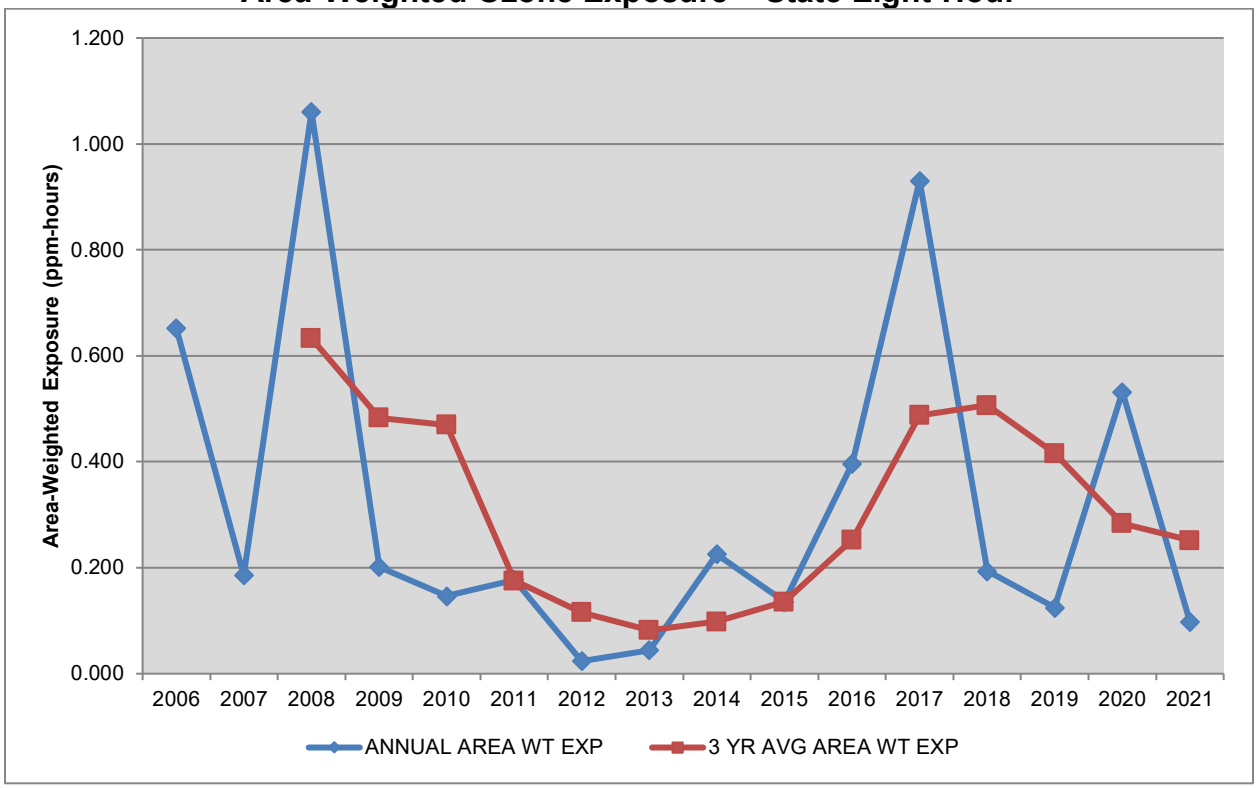
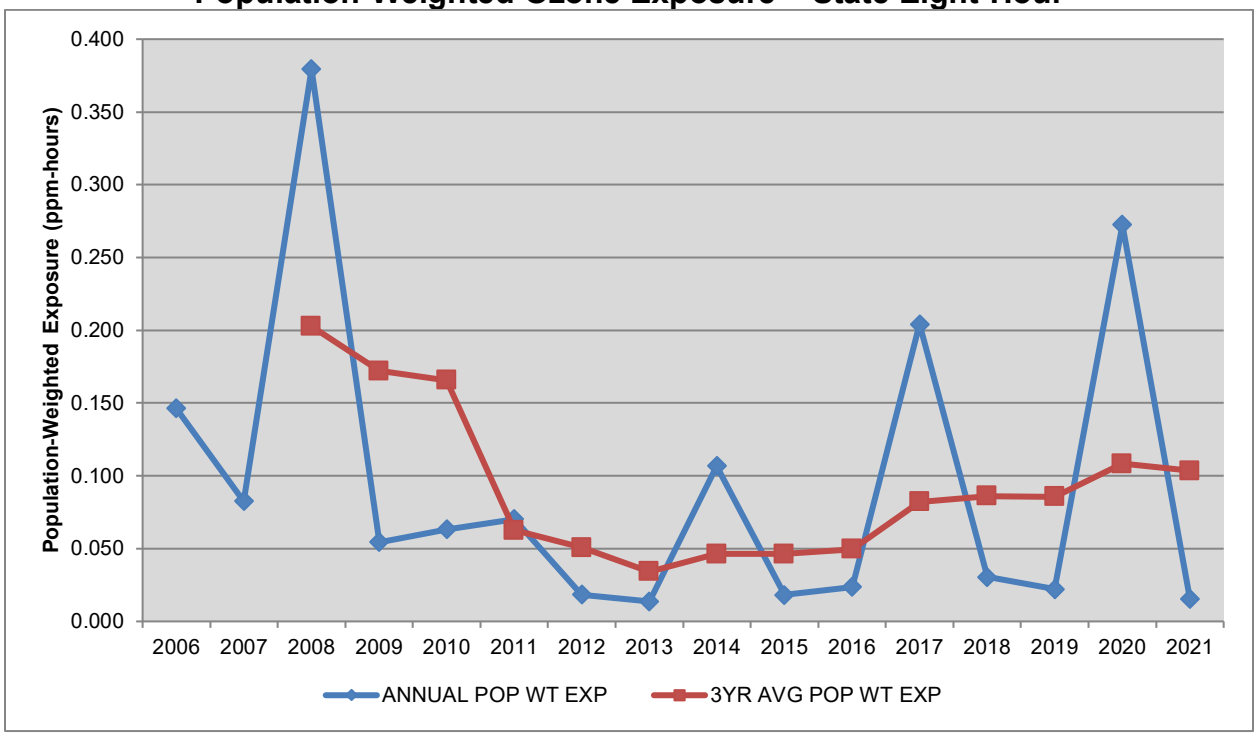


Figure C-4
Population-Weighted Ozone Exposure – State Eight-Hour



ATTACHMENT D

EXPECTED PEAK DAY CONCENTRATION (EPDC)

The EPDC is used for tracking progress in reducing daily maximum one-hour and eight-hour ozone concentrations at each monitoring site. This indicator represents the potential worst-case one-hour or eight-hour exposure to ozone and associated acute adverse health impacts. The EPDC differs from exposure indicators because it does not consider the size of the population or area being exposed. Progress in reducing the EPDC is displayed in Table D-1 for the monitoring sites in San Diego County that have been operating since a 1990-1992 base period for the one-hour and eight-hour standards. Table D-1 also includes supplementary operational monitoring sites that have been in operation since 1990 for the one-hour and eight-hour standards.

The District has an extensive ambient air quality monitoring network located throughout San Diego County

Table D-1
Expected Peak Day Concentration of Ozone (ppm)

Site	Base Periods (Years as Denoted Below)		End Period (2018-2021)		Difference (Base – End)		Percent Improvement	
	1-hour	8-hour	1-hour	8-hour	1-hour	8-hour	1-hour	8-hour
Alpine – Victoria Drive	0.1676 (1990-1992)	0.1407 (1990-1992)	0.1003	0.0884	0.0673	0.0522	**40.2%**	**37.1%**
El Cajon (combined)[69]	0.1475 (1990-1992)	0.1183 (1990-1992)	0.0809	0.0724	0.0666	0.0459	**45.1%**	**38.8%**
Chula Vista – East J Street	0.1440 (1990-1992)	0.1135 (1990-1992)	0.0830	0.0716	0.0610	0.0419	**42.3%**	**36.9%**
Kearny Mesa (combined)[70]	0.1708 (1990-1992)	0.1258 (1990-1992)	0.0920	0.0816	0.0788	0.0442	**46.2%**	**35.1%**
Otay Mesa (combined)[71]	0.1312 (1991-1993)	0.1064 (1991-1993)	0.0879	0.0767	0.0433	0.0297	**33.0%**	**27.9%**
Camp Pendleton	0.1128 (1997-1999)	0.0952 (1997-1999)	0.0821	0.0713	0.0307	0.0238	**27.2%**	**25.0%**
San Diego – Sherman Elementary	0.0890 (2018-2021)	0.0725 (2018-2021)	0.0890	0.0725	0.0000	0.0000	**N/A**	**N/A**

The most substantial air quality improvement occurred at the five monitoring sites that have been in operation since the early 1990's (Alpine, El Cajon, Chula Vista, Kearny Mesa, and Otay Mesa) for both the one-hour and eight-hour standards. Peak ozone levels at all of these locations decreased over 33% for the one-hour standard, and nearly 28% for the eight-hour standard. The reduction in peak ozone levels at both inland and coastal monitoring sites is due in part to the reduced air pollution regionwide, as well as a decrease in transported pollution over the ocean from the South Coast Air Basin, located immediately north of the San Diego region.

The Alpine monitoring site typically encounters the highest ozone levels in the County. Though it did not have the highest ozone concentration for the 1990-1992 base period, it was a close second and far higher than other monitors throughout the region. Alpine had the highest ozone concentrations during the 2018-2021 end period for both the one-hour and eight-hour standards.[72] However, air quality at this site (and other inland sites) continued to improve at very similar rates throughout the region, demonstrating the District's overall ozone control strategy is working.

Newer monitoring sites, such as Camp Pendleton, also experienced improvement at a slower rate compared to the older monitoring sites. This is expected, as the base period for this site was in the late 1990's, after a significant period of substantial air quality improvement had occurred in the early/mid 1990's prior to beginning operation. Had this monitoring site been operational in the early 1990's, it is likely it would have exhibited similar improvement as the other (older) monitoring sites. The San Diego – Sherman

Elementary monitoring site is also new, having been put into operation in 2019. However, its inclusion in the 2022 RAQS is only for the purposes of reporting in future RAQS, as the level of improvement could not be calculated. The District will report percentages at this monitoring site in future RAQS Revisions.

Site-specific ozone EPDC trends at each of the long-term monitoring sites are presented in Figures D-1 through D-7 on the following pages. The charts present annual data back to the first year for which data are available for each site, and show ongoing improvement at all sites, with steady improvement.

(continued on next page)

Figure D-1
Expected Peak Day Concentration, Alpine Monitoring Site

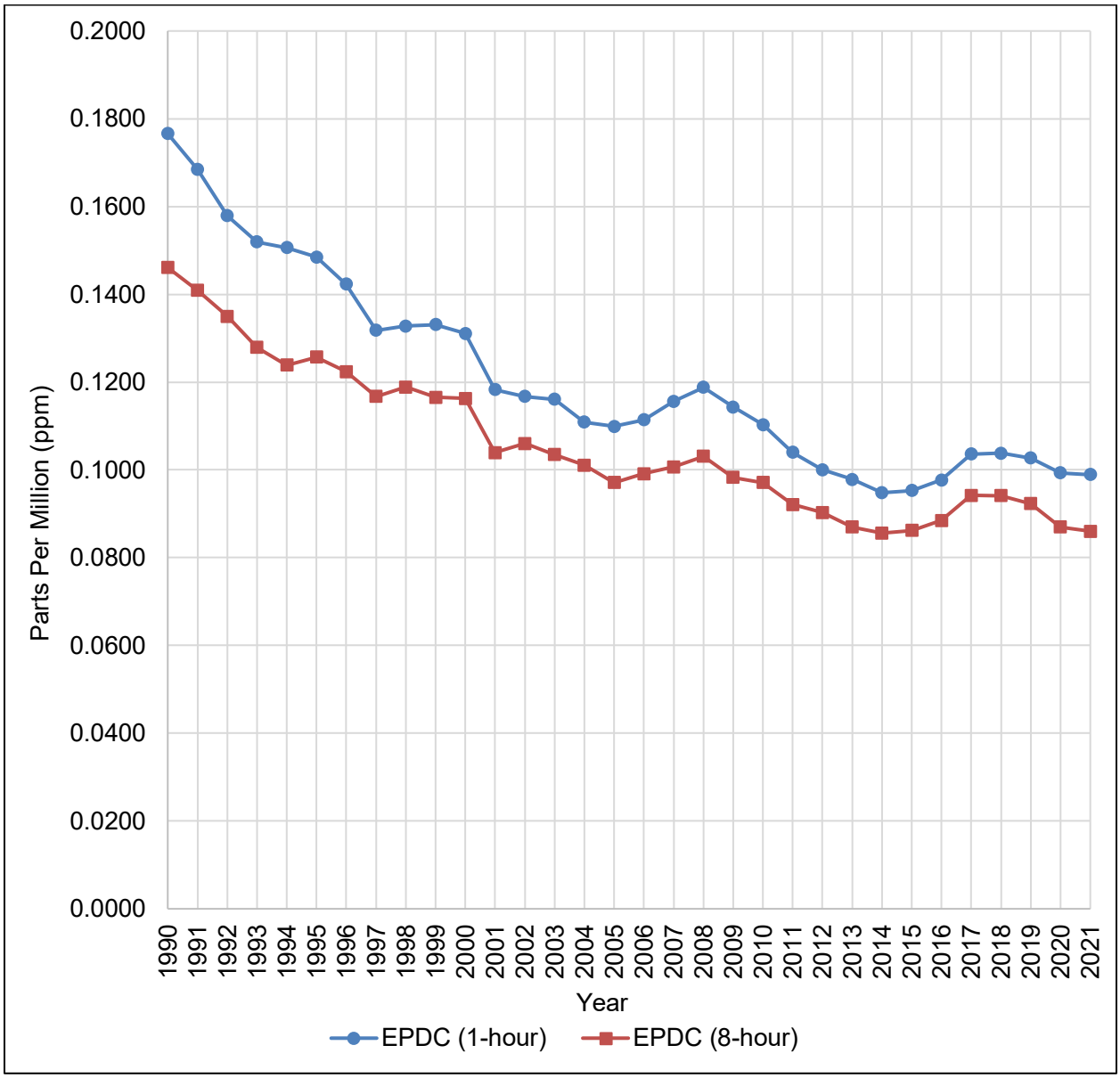
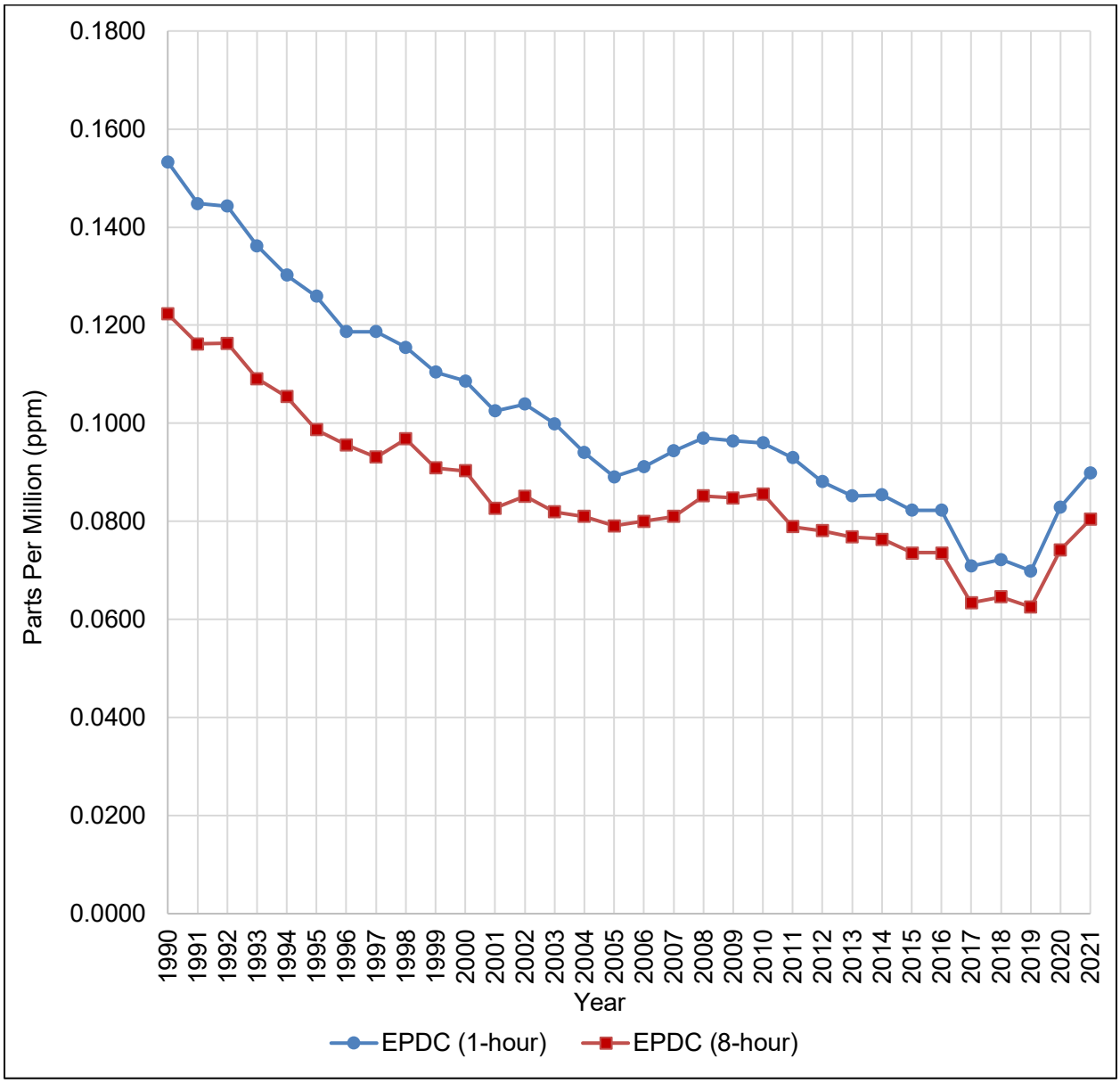


Figure D-2
Expected Peak Day Concentration, El Cajon Monitoring Site*



** 2014-2015 8-hour values interpolated due to relocation (Redwood Dr. to Floyd Smith to Lexington Elementary). Recent eight-hour EPDC values were not calculated by CARB for the El Cajon monitoring site due to a lack of representative data. Consequently, eight-hour EPDC values were forecast between 2015-2021 based on historical one-hour and eight-hour trends, and is not considered official data.*

Figure D-3
Expected Peak Day Concentration, Chula Vista Monitoring Site

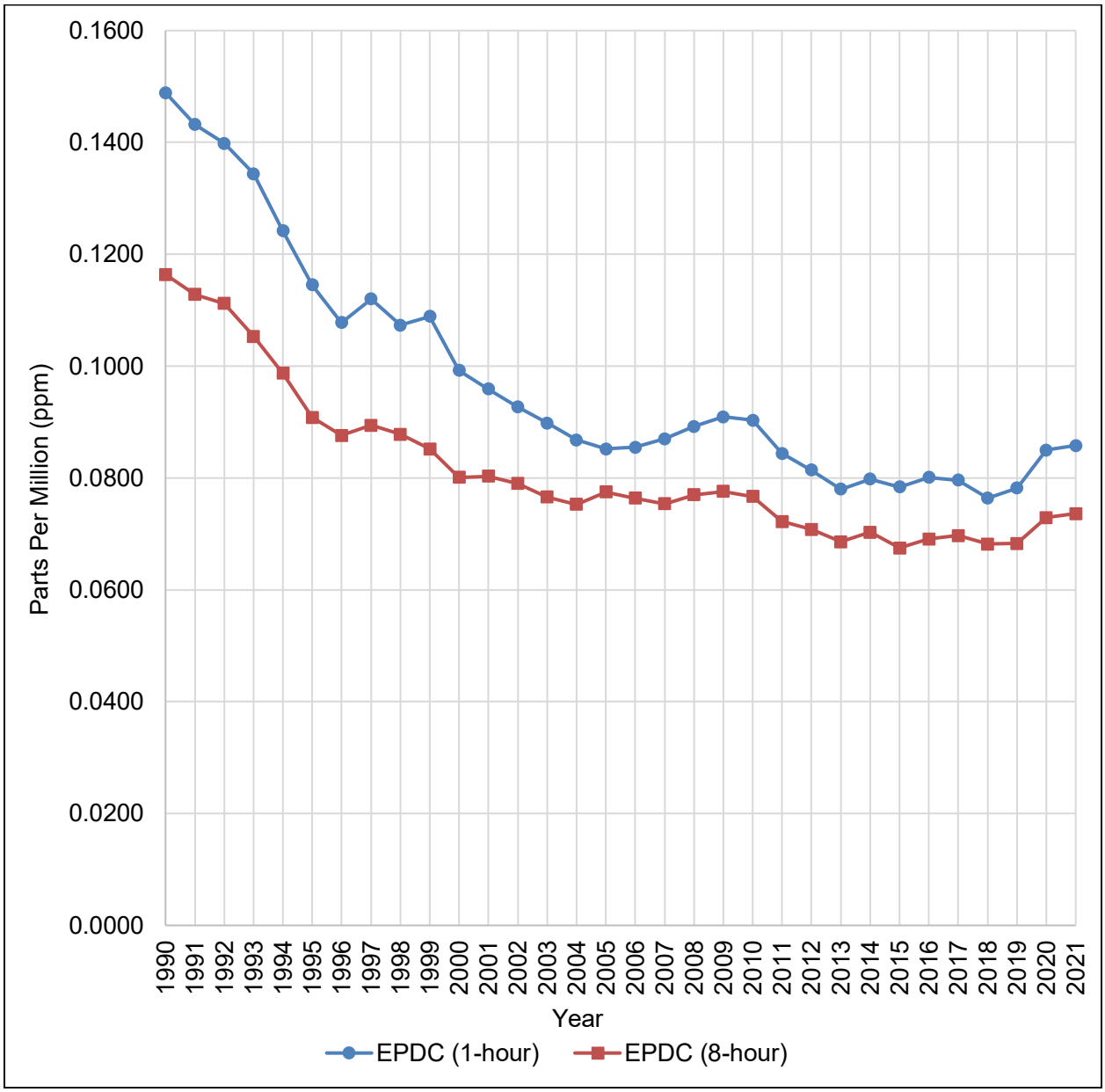
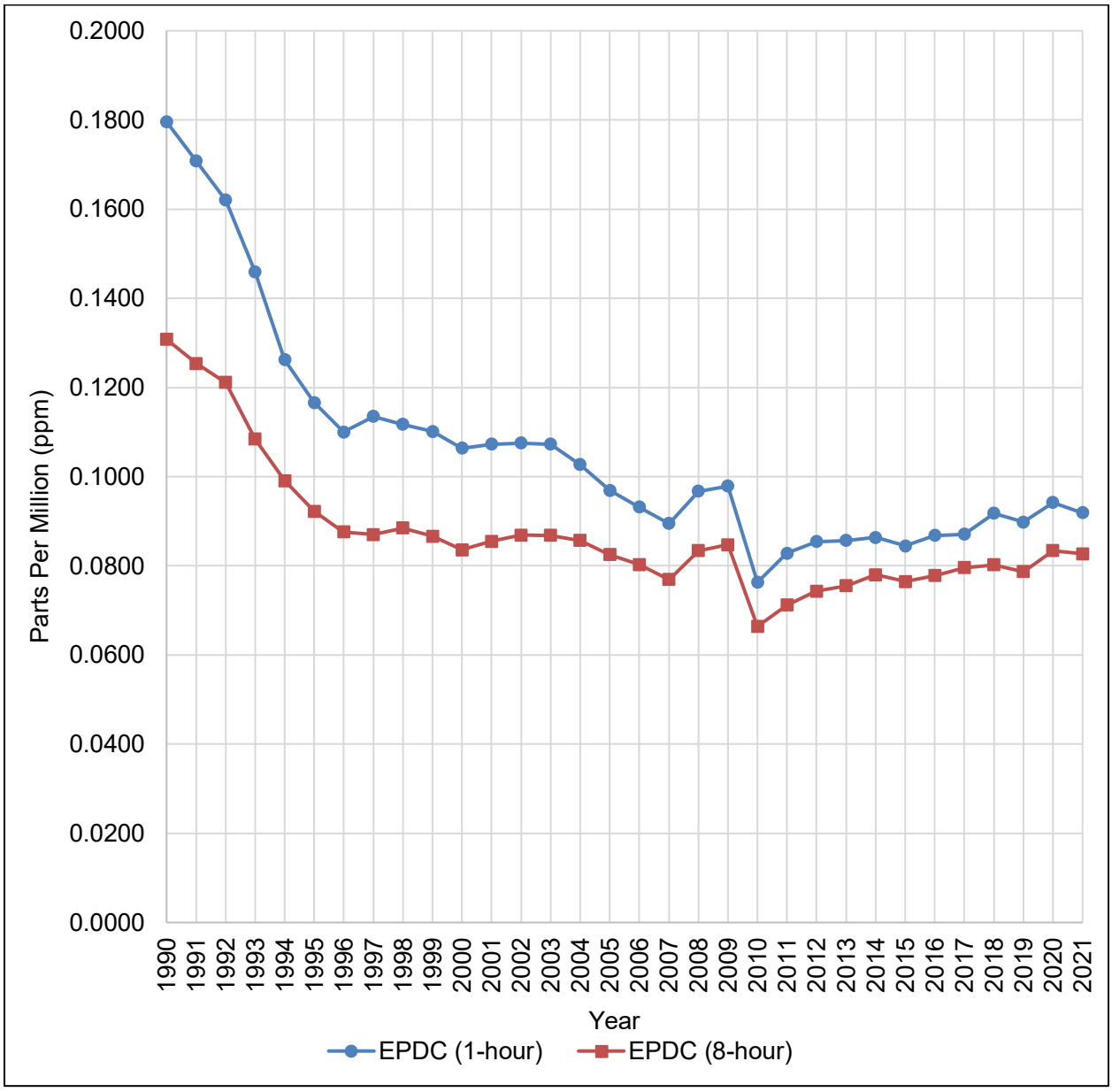
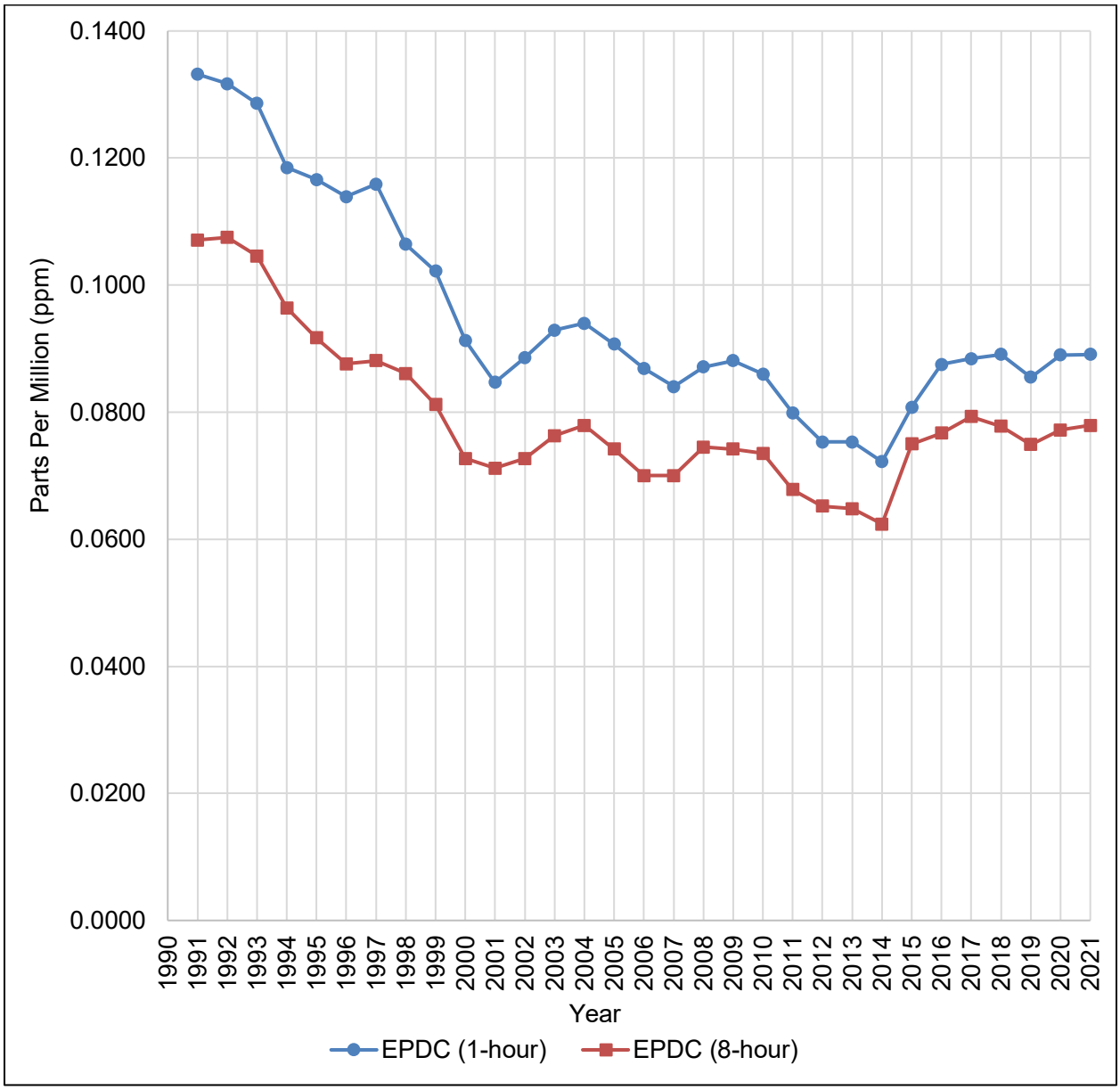


Figure D-4
Expected Peak Day Concentration, Kearny Mesa Monitoring Site*



** The monitor in Kearny Mesa (San Diego – Overland Avenue) was decommissioned in 2010. The Overland location previously housed only a wind profiler. In 2010, when the District permanently relocated the Overland monitoring site as well as the wind profiler, it was formally re-designated as San Diego – Kearny Villa Rd. Because of the close proximity between the two locations and no gaps in data, values for the two locations were combined for the purposes of the EPDC.*

Figure D-5
Expected Peak Day Concentration, Otay Mesa Monitoring Site*



** The original monitor in Otay Mesa (Paseo International) was decommissioned in 2014. When the District permanently relocated the Paseo International monitoring site in 2014, it was formally re-designated as Otay Mesa – Donovan. Because of the close proximity between the two locations and no gaps in data, values for the two locations were combined for the purposes of the EPDC.*

Figure D-6
Expected Peak Day Concentration, Camp Pendleton

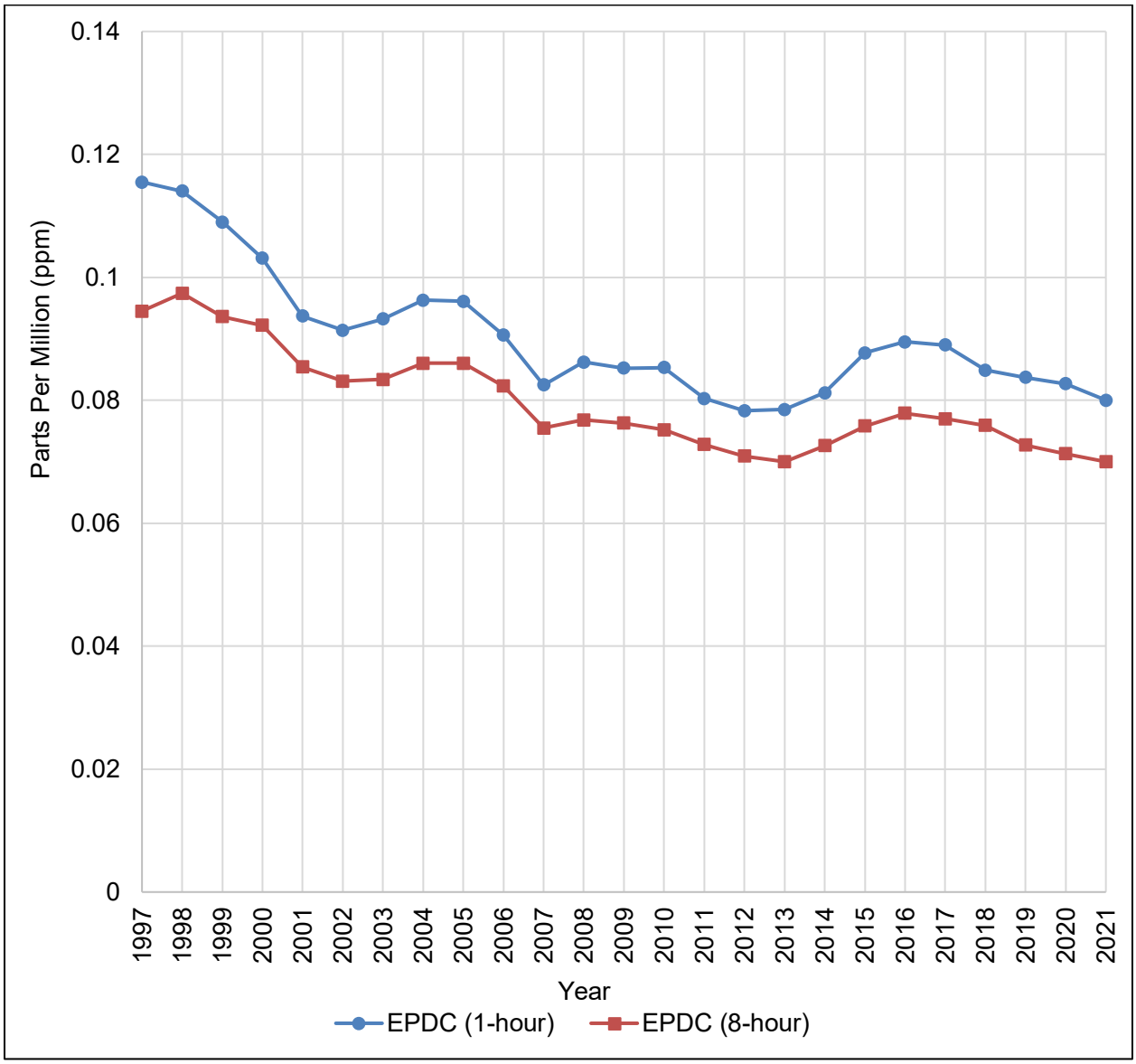
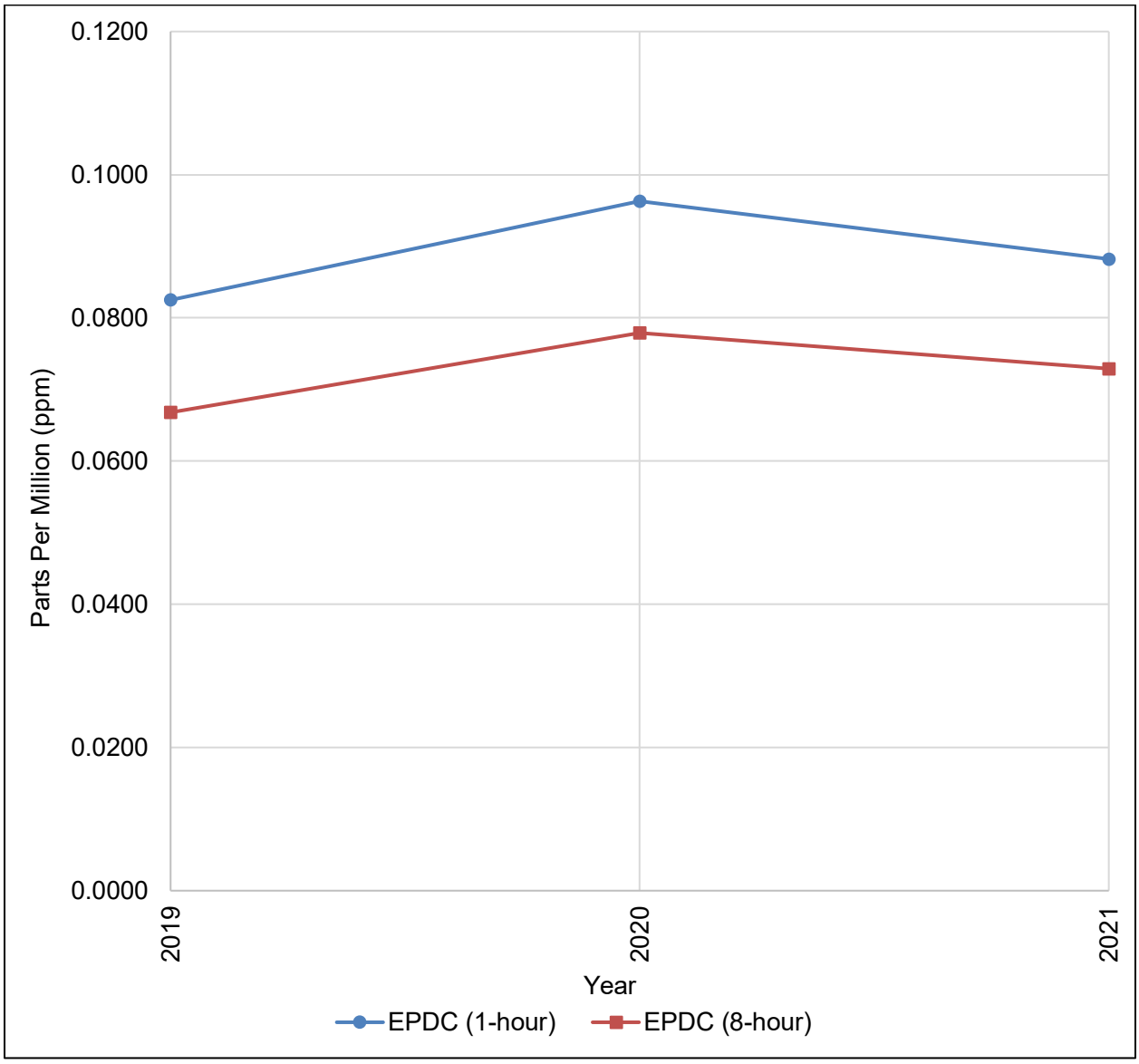


Figure D-7
Expected Peak Day Concentration, San Diego – Sherman Elementary



ATTACHMENT E

ANALYTICAL TOOLS USED TO DETERMINE ATTAINMENT

Air quality planning requires a solid technical foundation. As such, the District uses a variety of tools and analytical techniques to measure and characterize emissions and ambient concentrations of air pollutants, and to estimate the effects of air pollution on the health of San Diego County residents. Key tools include the region's extensive air quality monitoring network, emission inventories, and photochemical modeling, as described in the following sections.

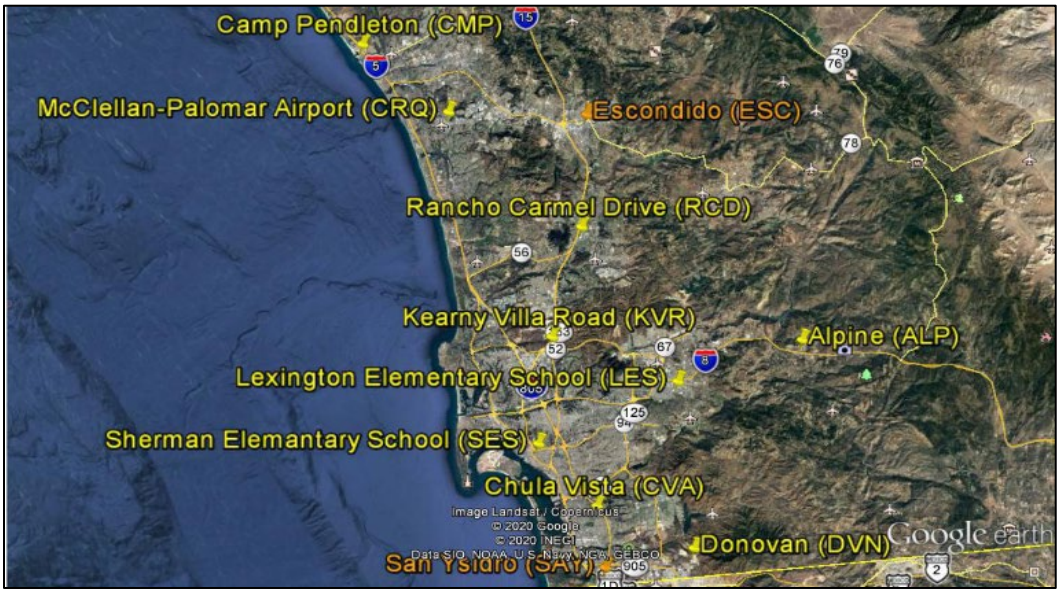
AIR QUALITY MONITORING NETWORK

The region's air monitoring network is designed to:

(1) Distinguish between areas where pollutant levels exceed CAAQS and NAAQS, and the areas where those standards are not exceeded,
(2) Provide air quality data to the public in a timely manner, and
(3) Support air pollution research and modeling studies.

The measured data also provides the public and the District with information about the status of the air quality, and the progress the region is making to improve air quality. The data is included within the District's Annual Air Quality Monitoring Network Report and is then annually submitted to the EPA.[73] The data is evaluated and updated on a regular basis in response to changes in monitoring requirements, shifts in population, and other factors. As of the end of 2021, the District operated nine (9) monitor sites collecting criteria air pollutant data, as denoted in Figure E-1 and Table E-1.[74]

Figure E-1
Monitoring Network Locations in San Diego County



*Orange= Under construction

Table E-1
List of Network Sites in San Diego County

Station Name	Address	Latitude/ Longitude	AQS-ID	Pollutants Monitored
Alpine-Padre Dam	2300 W. Victoria Dr.	32.842312° -116.768277°	06-073-1006	O3, NO2, PM2.5
Camp Pendleton	21441 W. B St.	33.217020° -117.396179°	06-073-1008	O3, NO2, PM2.5
Chula Vista	84 E. J St.	32.631243° -117.059086°	06-073-0001	O3, NO2, PM10, PM2.5, VOC, Metals, CR6, Aldehydes/ Carbonyls
Otay Mesa – Donovan	480 Alta Rd.	32.578162° -116.921388°	06-073-1014	O3, NO2, PM10, PM2.5, VOC, Metals, Aldehydes/ Carbonyls
Escondido*	600 E. Valley Pkwy.	33.127765° -117.075093°	06-073-1002	To be determined
Kearny Villa Rd.	6125A Kearny Villa Rd.	32.845713° -117.123979°	06-073-1016	O3, NO2, PM2.5
Lexington Elementary School	533 B. First St.	32.789569° -116.944308°	06-073-1022	O3, NO2, NCORE, PM10, PM2.5, VOC, Metals, CR6, Aldehydes/ Carbonyls
McClellan-Palomar Airport	2192 Palomar Airport Rd.	33.130898° -117.272392°	06-073-1023	Lead
Rancho Carmel Dr.	11403 Rancho Carmel Dr.	32.985428° -117.082213°	06-073-1017	NO2, CO, PM2.5
San Ysidro*	198 W. San Ysidro Blvd.	32.552809° -117.047328°	06-073-1025	To be determined
Sherman Elementary School	450B 24th St.	32.710177° -117.142665°	06-073-1026	O3, NO2, PM2.5, VOC, Metals, Aldehydes/ Carbonyls

**Still in the permitting process with the Cities of Escondido and San Diego, respectively*

Emission Inventories

Emission inventories are essential tools for air quality planning. Inventories identify source categories and provide estimates of emissions from each "anthropogenic" source. Inventories are then used to perform air quality modeling, identify source categories for emission reduction opportunities, estimate potential emission reductions from control measures, and other technical analyses. The District develops and maintains a local emissions inventory for a variety of air pollutants and TACs, including VOC, NOx, PM2.5, and PM10. The inventories provide detailed estimates of emissions from a wide range of sources, and are periodically updated to reflect changes in emission factors. Changes could include updated equipment, economic and demographic trends, and regulatory activity such as more stringent emission limits on certain sources.

For the purposes of the 2022 RAQS (and Revisions preceding it), the emission inventory, projections, and trends are based on ozone precursor emissions data compiled and maintained by CARB.[75] Supporting data were jointly developed by CARB, the District, and the San Diego Association of Governments (SANDAG), which each play a role in collecting and reviewing the data necessary to generate comprehensive planning emission inventories. The supporting data include socio-economic projections, industrial and travel activities, emission factors, and emission speciation profiles.

First, CARB compiles annual statewide emission inventories in its emission-related information database, the California Emission Inventory Development and Reporting System (CEIDARS). Emissions data for past and future years are generated using CARB's California Emission Projection Analysis Model (CEPAM) to track progress towards emission reduction goals and mandates. CEPAM utilizes the most current growth and emissions control data available (and agreed upon by the stakeholder agencies) to provide comprehensive projections of anthropogenic (human activity related) emissions for each year from 2022 to 2050.[76]

Local air districts are then responsible for compiling emissions data for all stationary sources and many areawide sources. For mobile sources, CEPAM integrates emission estimates from CARB EMFAC and OFFROAD models. Additionally, the Southern California Association of Governments (SCAG) and SANDAG incorporate data regarding highway and transit projects from their respective travel demand models for estimating and projecting VMT and speed. The CARB on-road emissions inventory (EMFAC) relies on these VMT and speed estimates. To complete the inventory, estimates of biogenic (naturally occurring) emissions are developed by CARB using the Biogenic Emission Inventory Geographic Information System (BEIGIS) model.

Photochemical Modeling

Ozone formation in the atmosphere is a complex photochemical process. As such, sophisticated photochemical air quality simulation is frequently used to help predict the amount of precursor emission reductions needed for attainment of ozone standards. When prepared, this modeling mathematically simulates each of the physical and chemical processes that govern air pollution in the lower atmosphere. A few of the

processes include, but are not limited to: (1) air pollutant releases into the air, (2) air pollutant transport and diffusion by the wind, (3) air pollutant creation and destruction in the air through chemical reactions, and (4) deposition of pollutants onto the ground.

The CCAA does not require air districts conduct photochemical modeling for state air quality plans. Such efforts would be resource-intensive and cost-prohibitive to complete on a triennial planning cycle. However, as part of the District's 2020 National Ozone Standard Plan, the District and CARB did recently complete a photochemical modeling demonstration required for the purposes of demonstrating attainment of the national 2015 ozone standard. Both state and federal eight-hour ozone standards are currently set at 0.070 ppm.

As such, the modeling used for federal purposes (which utilizes the same emission inventories and projections that are included in the 2022 RAQS) can reasonably predict when the region is expected to attain the state ozone standard as well.[77] Though circumstances currently allow the District (and stakeholders) to forecast a potential future attainment date of state ozone standards with these modeling results, the inclusion of such information should not be construed as the norm for future RAQS Revisions. The District will only incorporate such data into future RAQS only when appropriate and/or available.

CARB Criteria for Designating an Area as Attainment

CARB adheres to California Code of Regulations Sections 70300 through 70306 to determine state ambient air standards designations for each area and each pollutant. These guidelines, known as the "Area Designations Criteria",[78] mandate several requirements in order for CARB to consider a designation change for state standards. These include, but are not limited to, ensuring the data shows to violations of the standard in the area for a three-year period, and ensuring all collected air monitoring data meets stringent representativeness and completeness criteria set forth by CARB for the time period being assessed.

ATTACHMENT F

SAN DIEGO COUNTY CALENVIROSCREEN 4.0 SCORES AND OZONE PERCENTILES BY CENSUS TRACT

Table F-1
San Diego County CalEnviroscreen 4.0 Scores and Ozone Percentiles by Census Tracts

Census Tract	Total Population	ZIP, Nearby City (to help approximate location only)	Latitude, Longitude	Draft CES 4 Pctl Range	Ozone	Ozone Pctl
6073021206	3265	91901 Alpine	32.8647039, -116.7519581	1-5%	0.058	**80.25**
6073020902	2158	91916 Descanso	32.9424839, -116.6067039	15-20%	0.058	**79.17**
6073021202	3691	91901 Alpine	32.8244867, -116.647342	1-5%	0.058	**79.02**
6073021205	7126	91901 Alpine	32.8287974, -116.7811501	5-10%	0.058	**78.98**
6073021204	5803	91901 Alpine	32.8078834, -116.7641322	1-5%	0.057	**78.1**
6073020904	2036	92036 Julian	33.0526793, -116.6289159	25-30%	0.057	**77.76**
6073020903	2823	92086 Warner Springs	33.2564808, -116.6970824	30-35%	0.057	**76.58**
6073020811	6133	92065 Ramona	33.0025617, -116.7742268	5-10%	0.056	**76.35**
6073020810	5135	92065 Ramona	33.0348099, -116.7875799	5-10%	0.056	**75.4**
6073020807	2595	92065 Ramona	33.072914, -116.8231087	25-30%	0.055	**74**
6073021100	8374	91906 Campo	32.7026541, -116.456874	55-60%	0.055	**73.9**
6073016802	7236	92021 El Cajon	32.8701471, -116.8418297	20-25%	0.055	**73.73**
6073021000	2730	92004 Borrego Springs	33.1112185, -116.27356	40-45%	0.055	**73.71**
6073016902	2898	92040 Lakeside	32.9312875, -116.8538493	30-35%	0.055	**73.28**
6073015502	2828	92019 El Cajon	32.8013941, -116.8356541	1-5%	0.055	**73.22**
6073020809	6982	92065 Ramona	33.0396539, -116.8524089	15-20%	0.055	**72.73**

Census Tract	Total Population	ZIP, Nearby City (to help approximate location only)	Latitude, Longitude	Draft CES 4 Pctl Range	Ozone	Ozone Pctl
6073020806	5998	92065 Ramona	33.0384857, -116.8766106	30-35%	0.054	**71.74**
6073019107	1991	92082 Valley Center	33.2118604, -116.9122434	20-25%	0.054	**71.6**
6073019101	7499	92061 Pauma Valley	33.3358648, -117.0114926	45-50%	0.054	**71.31**
6073020805	3381	92065 Ramona	33.0328545, -116.8935971	15-20%	0.054	**70.93**
6073015501	5220	92021 El Cajon	32.8179291, -116.8631385	20-25%	0.054	**70.79**
6073019106	8883	92082 Valley Center	33.2533185, -116.9903688	30-35%	0.053	**69.93**
6073020801	5397	92065 Ramona	33.0052699, -116.9387595	5-10%	0.053	**69.61**
6073016811	4826	92040 Lakeside	32.8465129, -116.8973197	15-20%	0.053	**68.96**
6073019002	1752	92028 Fallbrook	33.3908759, -117.1450804	30-35%	0.053	**68.95**
6073020709	8050	92027 Escondido	33.1311558, -116.9769969	25-30%	0.053	**68.77**
6073016809	5755	92021 El Cajon	32.8295319, -116.8941897	25-30%	0.053	**68.66**
6073016804	7829	92040 Lakeside	32.8654251, -116.9141796	60-65%	0.053	**68.44**
6073016810	3100	92040 Lakeside	32.8479042, -116.9106547	20-25%	0.052	**67.89**
6073021302	7800	91935 Jamul	32.6637754, -116.7818507	30-35%	0.052	**67.77**
6073019103	5639	92082 Valley Center	33.2721347, -117.0811098	1-5%	0.052	**67.13**
6073019001	6314	92028 Fallbrook	33.4430775, -117.3143417	30-35%	0.052	**67.08**
6073016807	7412	92040 Lakeside	32.8364013, -116.9197122	20-25%	0.052	**66.65**
6073018903	4705	92028 Fallbrook	33.3971392, -117.2419463	45-50%	0.052	**66.19**
6073016402	8007	92021 El Cajon	32.8091378, -116.9101919	45-50%	0.051	**66.14**
6073016901	7291	92040 Lakeside	32.9015716, -116.9470083	35-40%	0.051	**65.36**
6073015602	2312	92019 El Cajon	32.794632, -116.9069289	15-20%	0.051	**65.34**
6073020103	10597	92027 Escondido	33.1878229, -117.05572	25-30%	0.051	**65.26**
6073016702	8101	92040 Lakeside	32.8444269, -116.9338156	45-50%	0.051	**65.07**

Census Tract	Total Population	ZIP, Nearby City (to help approximate location only)	Latitude, Longitude	Draft CES 4 Pctl Range	Ozone	Ozone Pctl
6073017021	3398	92065 Ramona	33.0040421, -116.9890364	1-5%	0.051	**64.95**
6073020210	4891	92027 Escondido	33.1455819, -117.0410689	30-35%	0.051	**64.94**
6073020710	1758	92025 Escondido	33.078589, -117.0160101	20-25%	0.051	**64.88**
6073016806	4691	92040 Lakeside	32.82831, -116.92865	15-20%	0.051	**64.87**
6073018904	6073	92028 Fallbrook	33.381264, -117.2415252	40-45%	0.051	**64.79**
6073015406	2580	92019 El Cajon	32.7723038, -116.8984176	5-10%	0.051	**64.63**
6073019105	5603	92026 Escondido	33.2304835, -117.0966729	15-20%	0.051	**64.47**
6073020209	5425	92027 Escondido	33.138326, -117.0476028	35-40%	0.051	**64.39**
6073017020	3608	92064 Poway	33.041943, -117.010947	5-10%	0.051	**64.37**
6073020208	2529	92027 Escondido	33.1461143, -117.0530788	25-30%	0.051	**64.26**
6073016401	5561	92021 El Cajon	32.8141917, -116.9270232	35-40%	0.051	**64.24**
6073018905	7270	92028 Fallbrook	33.3720233, -117.2431854	50-55%	0.051	**64.11**
6073020706	6404	92025 Escondido	33.0998055, -117.0388245	5-10%	0.051	**63.95**
6073020207	4987	92027 Escondido	33.1334707, -117.0539783	50-55%	0.051	**63.91**
6073017010	3288	92064 Poway	32.9600148, -116.9909735	5-10%	0.051	**63.88**
6073020206	5933	92027 Escondido	33.1414533, -117.0593149	40-45%	0.051	**63.77**
6073018802	8545	92028 Fallbrook	33.3337164, -117.1998988	5-10%	0.051	**63.57**
6073016608	2539	92040 Lakeside	32.8685871, -116.9617915	10-15%	0.051	**63.39**
6073018906	7178	92028 Fallbrook	33.3601098, -117.2433431	50-55%	0.051	**63.36**
6073020705	4817	92027 Escondido	33.116245, -117.0549135	10-15%	0.051	**63.35**
6073020109	5332	92027 Escondido	33.1446753, -117.069255	20-25%	0.051	**63.26**
6073020211	6968	92027 Escondido	33.1335333, -117.0640169	45-50%	0.051	**63.25**
6073016701	9848	92071 Santee	32.8358448, -116.9489803	25-30%	0.05	**63.09**

Census Tract	Total Population	ZIP, Nearby City (to help approximate location only)	Latitude, Longitude	Draft CES 4 Pctl Range	Ozone	Ozone Pctl
6073020107	3817	92027 Escondido	33.1535702, -117.0765852	10-15%	0.05	**63.07**
6073015601	5910	92019 El Cajon	32.7921847, -116.9264026	25-30%	0.05	**62.94**
6073018801	3957	92028 Fallbrook	33.3418007, -117.2348433	25-30%	0.05	**62.85**
6073016607	6972	92071 Santee	32.8524426, -116.9613512	15-20%	0.05	**62.8**
6073020202	6811	92025 Escondido	33.131406, -117.0724073	55-60%	0.05	**62.73**
6073015405	5434	92019 El Cajon	32.7752264, -116.9179144	5-10%	0.05	**62.71**
6073020602	6329	92025 Escondido	33.1189678, -117.0681038	50-55%	0.05	**62.63**
6073016502	7738	92021 El Cajon	32.8145361, -116.9431653	60-65%	0.05	**62.45**
6073020106	3816	92026 Escondido	33.1501424, -117.0867344	10-15%	0.05	**62.35**
6073020213	3850	92025 Escondido	33.1313346, -117.0781738	50-55%	0.05	**62.29**
6073020707	4982	92025 Escondido	33.1059882, -117.0693151	35-40%	0.05	**62.15**
6073020105	4044	92026 Escondido	33.1596959, -117.0971848	25-30%	0.05	**62.02**
6073016609	5403	92071 Santee	32.8753135, -116.978192	1-5%	0.05	**62**
6073020108	6369	92026 Escondido	33.137136, -117.0867921	45-50%	0.05	**61.94**
6073020708	3706	92025 Escondido	33.0905318, -117.0674538	20-25%	0.05	**61.83**
6073017053	3187	92064 Poway	33.0012075, -117.0315378	5-10%	0.05	**61.77**
6073020601	6303	92025 Escondido	33.1142976, -117.0779507	50-55%	0.05	**61.74**
6073020214	6183	92025 Escondido	33.1270112, -117.0844242	55-60%	0.05	**61.67**
6073016302	6083	92021 El Cajon	32.8039448, -116.9433532	60-65%	0.05	**61.64**
6073016503	3321	92021 El Cajon	32.8220794, -116.9554309	45-50%	0.05	**61.51**
6073021304	2571	91935 Jamul	32.6847916, -116.8687112	15-20%	0.05	**61.49**
6073017019	6402	92128 San Diego	33.0414758, -117.0511483	10-15%	0.05	**61.48**
6073015701	6405	92021 El Cajon	32.7977009, -116.9420918	50-55%	0.05	**61.43**

Census Tract	Total Population	ZIP, Nearby City (to help approximate location only)	Latitude, Longitude	Draft CES 4 Pctl Range	Ozone	Ozone Pctl
6073018803	4884	92003 Bonsall	33.2857623, -117.1904461	20-25%	0.05	**61.42**
6073015704	3873	92019 El Cajon	32.7909112, -116.9381289	40-45%	0.05	**61.41**
6073020308	5616	92026 Escondido	33.1374325, -117.0980269	40-45%	0.05	**61.14**
6073020403	4059	92025 Escondido	33.097045, -117.0804409	35-40%	0.05	**61.03**
6073013604	6602	92019 El Cajon	32.7537863, -116.9177769	15-20%	0.05	**60.93**
6073017009	4737	92064 Poway	32.9677095, -117.0283696	15-20%	0.05	**60.91**
6073016610	4185	92071 Santee	32.8584892, -116.9800224	10-15%	0.05	**60.86**
6073020305	6483	92026 Escondido	33.1505524, -117.1089828	15-20%	0.05	**60.85**
6073016504	7563	92021 El Cajon	32.8134188, -116.9558727	70-75%	0.05	**60.82**
6073020500	5252	92025 Escondido	33.1115032, -117.0899733	65-70%	0.05	**60.81**
6073017006	3014	92064 Poway	33.0121262, -117.0488065	1-5%	0.05	**60.7**
6073016615	4477	92071 Santee	32.8477575, -116.9795653	15-20%	0.05	**60.47**
6073015404	8112	92020 El Cajon	32.78024, -116.9383632	40-45%	0.05	**60.39**
6073016617	3491	92071 Santee	32.835197, -116.9721473	60-65%	0.049	**60.22**
6073021303	8861	91935 Jamul	32.7210437, -116.9017298	10-15%	0.049	**60.21**
6073020309	4481	92026 Escondido	33.1355986, -117.1090217	40-45%	0.049	**60.19**
6073020304	6898	92026 Escondido	33.1749098, -117.1308356	25-30%	0.049	**60.15**
6073017054	5963	92064 Poway	32.9895326, -117.045904	1-5%	0.049	**60.1**
6073020405	3447	92029 Escondido	33.0829769, -117.0871019	5-10%	0.049	**60.02**
6073015703	7066	92020 El Cajon	32.7912925, -116.9491346	55-60%	0.049	**60**
6073016301	5290	92020 El Cajon	32.8030833, -116.9564885	70-75%	0.049	**59.94**
6073017015	7763	92128 San Diego	33.0328463, -117.0696419	15-20%	0.049	**59.83**
6073017049	3248	92064 Poway	32.9423409, -117.0301187	35-40%	0.049	**59.66**

Census Tract	Total Population	ZIP, Nearby City (to help approximate location only)	Latitude, Longitude	Draft CES 4 Pctl Range	Ozone	Ozone Pctl
6073020024	4485	92069 San Marcos	33.1471367, -117.124725	20-25%	0.049	**59.5**
6073020404	4979	92029 Escondido	33.0970653, -117.1011559	40-45%	0.049	**59.42**
6073017041	5829	92064 Poway	32.9657965, -117.0440195	10-15%	0.049	**59.37**
6073019208	3313	92069 San Marcos	33.2134255, -117.1650168	20-25%	0.049	**59.32**
6073016612	6037	92071 Santee	32.8723023, -116.9941684	5-10%	0.049	**59.18**
6073017014	2475	92128 San Diego	33.0159951, -117.0682214	1-5%	0.049	**59.1**
6073015801	3584	92020 El Cajon	32.796887, -116.9593301	65-70%	0.049	**59.03**
6073016202	3657	92020 El Cajon	32.8149714, -116.9711319	90-95%	0.049	**58.99**
6073017051	5079	92128 San Diego	33.0037084, -117.0665065	1-5%	0.049	**58.84**
6073016614	3936	92071 Santee	32.8465152, -116.9900899	10-15%	0.049	**58.83**
6073020025	4752	92069 San Marcos	33.1395167, -117.1298502	40-45%	0.049	**58.81**
6073020401	2296	92029 Escondido	33.0672688, -117.0934081	1-5%	0.049	**58.73**
6073015802	5175	92020 El Cajon	32.7912947, -116.9599184	65-70%	0.049	**58.44**
6073017031	4125	92127 San Diego	33.0281424, -117.0847186	5-10%	0.049	**58.15**
6073017040	4551	92064 Poway	32.9677362, -117.0571307	10-15%	0.049	**58.12**
6073015301	3152	92020 El Cajon	32.7840225, -116.9579853	55-60%	0.049	**58.07**
6073015403	2545	92020 El Cajon	32.7707044, -116.9501576	30-35%	0.049	**57.98**
6073020022	7973	92069 San Marcos	33.1623466, -117.1529162	25-30%	0.049	**57.9**
6073017052	5480	92128 San Diego	33.0009657, -117.0749912	5-10%	0.049	**57.88**
6073020023	4245	92069 San Marcos	33.1460671, -117.146847	20-25%	0.049	**57.65**
6073017048	7199	92064 Poway	32.9466011, -117.0535531	35-40%	0.049	**57.5**
6073019207	9967	92084 Vista	33.2338179, -117.2039111	45-50%	0.049	**57.41**
6073016616	4435	92071 Santee	32.8315369, -116.9929396	30-35%	0.049	**57.4**

Census Tract	Total Population	ZIP, Nearby City (to help approximate location only)	Latitude, Longitude	Draft CES 4 Pctl Range	Ozone	Ozone Pctl
6073009504	6752	92071 Santee	32.9019274, -117.0284232	5-10%	0.049	**57.31**
6073020307	7447	92029 Escondido	33.0939803, -117.1270331	25-30%	0.049	**57.22**
6073017055	5231	92128 San Diego	32.9794748, -117.072852	1-5%	0.049	**57.21**
6073013605	6573	91941 La Mesa	32.7589751, -116.9481393	15-20%	0.049	**57.17**
6073015901	3733	92020 El Cajon	32.7904464, -116.9691572	80-85%	0.049	**57.11**
6073016613	1929	92071 Santee	32.8456215, -117.0043675	10-15%	0.049	**57.05**
6073017050	3101	92128 San Diego	32.9618675, -117.0776875	15-20%	0.048	**56.76**
6073013606	6232	92019 El Cajon	32.7472342, -116.9434877	15-20%	0.048	**56.63**
6073015902	5252	92020 El Cajon	32.7840084, -116.9696997	70-75%	0.048	**56.32**
6073020020	8244	92069 San Marcos	33.1663173, -117.1744455	15-20%	0.048	**56.25**
6073017056	4442	92128 San Diego	32.9799345, -117.0829654	1-5%	0.048	**56.13**
6073020306	9500	92078 San Marcos	33.1112121, -117.1487018	35-40%	0.048	**55.97**
6073016201	5207	92020 El Cajon	32.8138271, -116.9918628	45-50%	0.048	**55.96**
6073017032	15878	92127 San Diego	33.008998, -117.1044271	10-15%	0.048	**55.87**
6073017034	5172	92129 San Diego	32.9901496, -117.0908369	5-10%	0.048	**55.82**
6073018611	9606	92057 Oceanside	33.2819773, -117.2644348	30-35%	0.048	**55.79**
6073016606	3948	92071 Santee	32.841342, -117.0126279	15-20%	0.048	**55.53**
6073020028	4621	92069 San Marcos	33.1418052, -117.1700975	40-45%	0.048	**55.43**
6073015302	4362	92020 El Cajon	32.7743373, -116.9699985	15-20%	0.048	**55.28**
6073020021	6746	92069 San Marcos	33.1511693, -117.1773755	40-45%	0.048	**55.22**
6073016000	2290	92020 El Cajon	32.7886293, -116.9804886	65-70%	0.048	**55.17**
6073017045	2714	92131 San Diego	32.9301327, -117.067832	5-10%	0.048	**54.92**
6073016100	6483	92020 El Cajon	32.7999329, -116.9898526	45-50%	0.048	**54.88**

Census Tract	Total Population	ZIP, Nearby City (to help approximate location only)	Latitude, Longitude	Draft CES 4 Pctl Range	Ozone	Ozone Pctl
6073019203	2874	92084 Vista	33.237727, -117.2360535	15-20%	0.048	**54.79**
6073019903	5021	92084 Vista	33.1781581, -117.1972424	15-20%	0.048	**54.76**
6073017030	23397	92127 San Diego	33.031018, -117.1226724	15-20%	0.048	**54.59**
6073017039	7604	92128 San Diego	32.9526715, -117.0877455	10-15%	0.048	**54.37**
6073017035	3358	92129 San Diego	32.9749586, -117.0988796	20-25%	0.048	**54.06**
6073016605	7123	92071 Santee	32.8277308, -117.0146944	10-15%	0.048	**53.79**
6073018700	38932	92055 Camp Pendleton	33.3510594, -117.4205567	50-55%	0.048	**53.75**
6073019205	6460	92084 Vista	33.2241242, -117.2353782	30-35%	0.048	**53.74**
6073019601	6824	92084 Vista	33.2069221, -117.2241894	35-40%	0.048	**53.7**
6073019602	5100	92084 Vista	33.195293, -117.2174758	20-25%	0.048	**53.64**
6073017042	8045	92128 San Diego	32.9403015, -117.0854107	10-15%	0.048	**53.58**
6073020029	6128	92078 San Marcos	33.1392223, -117.189465	55-60%	0.048	**53.29**
6073018612	4115	92057 Oceanside	33.2550012, -117.2609565	25-30%	0.048	**53.15**
6073019303	7136	92084 Vista	33.2415689, -117.2567952	30-35%	0.048	**53.11**
6073017044	5696	92131 San Diego	32.9270444, -117.0805415	1-5%	0.048	**53.02**
6073019206	5932	92084 Vista	33.215823, -117.2372592	20-25%	0.048	**53.01**
6073020026	4630	92078 San Marcos	33.1292602, -117.1882353	10-15%	0.047	**52.93**
6073017018	4276	92129 San Diego	32.9615181, -117.1018883	30-35%	0.047	**52.88**
6073015100	4843	91942 La Mesa	32.7881451, -116.9947059	15-20%	0.047	**52.84**
6073017047	4091	92131 San Diego	32.9144857, -117.0766489	1-5%	0.047	**52.68**
6073017033	4893	92129 San Diego	32.9800714, -117.1150623	1-5%	0.047	**52.5**
6073019902	4229	92083 Vista	33.1732234, -117.2166255	25-30%	0.047	**52.21**
6073020018	8262	92078 San Marcos	33.1499789, -117.2062594	55-60%	0.047	**51.94**

Census Tract	Total Population	ZIP, Nearby City (to help approximate location only)	Latitude, Longitude	Draft CES 4 Pctl Range	Ozone	Ozone Pctl
6073019502	5851	92084 Vista	33.207787, -117.2406651	45-50%	0.047	**51.87**
6073009804	5024	92119 San Diego	32.8085467, -117.0134472	5-10%	0.047	**51.82**
6073013505	5433	91978 Spring Valley	32.7373196, -116.9642155	25-30%	0.047	**51.66**
6073013601	5418	91941 La Mesa	32.7537922, -116.9758103	15-20%	0.047	**51.65**
6073019404	3524	92083 Vista	33.21679, -117.251038	40-45%	0.047	**51.47**
6073020027	16237	92078 San Marcos	33.1159777, -117.1809654	5-10%	0.047	**51.23**
6073015200	3711	91941 La Mesa	32.7692636, -116.9893611	30-35%	0.047	**51.08**
6073019501	3749	92083 Vista	33.2084741, -117.2495976	35-40%	0.047	**50.95**
6073019503	5708	92083 Vista	33.1996277, -117.2443918	30-35%	0.047	**50.89**
6073013506	4392	91978 Spring Valley	32.7223766, -116.9605154	40-45%	0.047	**50.69**
6073017046	3778	92131 San Diego	32.9193342, -117.0954837	5-10%	0.047	**50.68**
6073009802	6532	92119 San Diego	32.7968558, -117.0140841	35-40%	0.047	**50.57**
6073019702	5020	92081 Vista	33.1869616, -117.2418366	30-35%	0.047	**50.54**
6073017036	3661	92129 San Diego	32.9597794, -117.1225603	5-10%	0.047	**50.39**
6073020017	3511	92081 Vista	33.1484964, -117.222755	50-55%	0.047	**50.35**
6073019904	7165	92081 Vista	33.1719277, -117.2369006	15-20%	0.047	**50.24**
6073017043	6581	92131 San Diego	32.9282044, -117.1057659	20-25%	0.047	**50.18**
6073017037	5776	92129 San Diego	32.9493661, -117.1190243	20-25%	0.047	**50.13**
6073019301	6931	92056 Oceanside	33.229935, -117.2750748	10-15%	0.047	**50.11**
6073020019	7149	92078 San Marcos	33.1321296, -117.2174731	20-25%	0.047	**50.03**
6073019905	4313	92081 Vista	33.1575866, -117.2317331	15-20%	0.047	**49.87**
6073015000	7048	91942 La Mesa	32.784615, -117.0092136	40-45%	0.047	**49.81**
6073018610	7796	92057 Oceanside	33.2591005, -117.3032478	30-35%	0.047	**49.79**

Census Tract	Total Population	ZIP, Nearby City (to help approximate location only)	Latitude, Longitude	Draft CES 4 Pctl Range	Ozone	Ozone Pctl
6073017110	11591	92029 Escondido	33.0651162, -117.1842996	10-15%	0.047	**49.78**
6073008336	2423	92129 San Diego	32.9678415, -117.1331584	1-5%	0.047	**49.65**
6073009805	4876	92119 San Diego	32.8156078, -117.0343554	5-10%	0.047	**49.56**
6073019403	5169	92056 Oceanside	33.2107453, -117.2669427	35-40%	0.047	**49.38**
6073013701	2385	91941 La Mesa	32.7561469, -116.9918436	5-10%	0.047	**49.27**
6073013503	6365	91977 Spring Valley	32.73925, -116.9812065	30-35%	0.047	**48.91**
6073019302	7966	92056 Oceanside	33.2179749, -117.2762264	45-50%	0.047	**48.9**
6073008354	9862	92129 San Diego	32.9332185, -117.1186741	20-25%	0.047	**48.87**
6073019406	4747	92083 Vista	33.1994118, -117.2642216	30-35%	0.047	**48.86**
6073008337	4288	92129 San Diego	32.9583944, -117.1357871	1-5%	0.047	**48.75**
6073018514	8650	92057 Oceanside	33.2318552, -117.2924241	20-25%	0.047	**48.67**
6073017022	5708	92131 San Diego	32.9050522, -117.1043719	10-15%	0.046	**48.48**
6073008335	10214	92129 San Diego	32.9666949, -117.155987	5-10%	0.046	**48.29**
6073019701	7450	92081 Vista	33.186867, -117.2637886	40-45%	0.046	**48.28**
6073009801	4951	92119 San Diego	32.7984505, -117.030735	5-10%	0.046	**48.26**
6073009505	7351	92071 Santee	32.8437051, -117.0656323	5-10%	0.046	**48.04**
6073014902	3163	91942 La Mesa	32.7707635, -117.0117565	45-50%	0.046	**47.92**
6073018609	6502	92057 Oceanside	33.2501756, -117.3150563	20-25%	0.046	**47.77**
6073013504	3711	91977 Spring Valley	32.7256572, -116.9791564	15-20%	0.046	**47.6**
6073019405	3906	92083 Vista	33.1965648, -117.2759939	25-30%	0.046	**47.53**
6073018608	2888	92057 Oceanside	33.2523944, -117.3237639	15-20%	0.046	**47.43**
6073018507	9068	92057 Oceanside	33.2385023, -117.3191571	30-35%	0.046	**47.34**
6073008353	5059	92126 San Diego	32.9328144, -117.133675	15-20%	0.046	**47.33**

Census Tract	Total Population	ZIP, Nearby City (to help approximate location only)	Latitude, Longitude	Draft CES 4 Pctl Range	Ozone	Ozone Pctl
6073008355	3387	92126 San Diego	32.9217552, -117.1266054	15-20%	0.046	**47.28**
6073019809	3963	92056 Oceanside	33.1752541, -117.2666754	10-15%	0.046	**47.21**
6073014803	5074	91942 La Mesa	32.7788537, -117.0229522	40-45%	0.046	**47.08**
6073008359	4668	92126 San Diego	32.9103179, -117.1204728	55-60%	0.046	**47.04**
6073014901	4307	91941 La Mesa	32.7619814, -117.0103336	45-50%	0.046	**46.99**
6073017029	9211	92014 Del Mar	32.9909105, -117.183626	5-10%	0.046	**46.94**
6073019808	4629	92056 Oceanside	33.1620932, -117.2628851	15-20%	0.046	**46.92**
6073014804	4210	91942 La Mesa	32.786443, -117.031084	15-20%	0.046	**46.8**
6073008365	3087	92129 San Diego	32.9411064, -117.144382	5-10%	0.046	**46.72**
6073018519	5707	92056 Oceanside	33.1943943, -117.2838101	45-50%	0.046	**46.6**
6073013702	5811	91977 Spring Valley	32.7405936, -116.9969521	50-55%	0.046	**46.56**
6073008352	3663	92126 San Diego	32.9272107, -117.1381437	20-25%	0.046	**46.47**
6073008366	6844	92129 San Diego	32.9525769, -117.160587	5-10%	0.046	**46.3**
6073020013	14446	92009 Carlsbad	33.1173821, -117.2488951	1-5%	0.046	**45.94**
6073008357	5218	92126 San Diego	32.9164937, -117.135326	25-30%	0.046	**45.85**
6073020015	4836	92009 Carlsbad	33.0914037, -117.2387904	5-10%	0.046	**45.7**
6073008356	4205	92126 San Diego	32.9209153, -117.1397621	10-15%	0.046	**45.68**
6073019806	12165	92010 Carlsbad	33.1585, -117.2771634	15-20%	0.046	**45.65**
6073008358	7252	92126 San Diego	32.9099606, -117.1335089	30-35%	0.046	**45.5**
6073013801	4763	91941 La Mesa	32.7480825, -117.0086151	25-30%	0.046	**45.48**
6073017109	6755	92009 Carlsbad	33.077855, -117.233336	5-10%	0.046	**45.43**
6073018518	3805	92056 Oceanside	33.1897718, -117.2916541	40-45%	0.046	**45.38**
6073019805	4043	92056 Oceanside	33.1803561, -117.286498	40-45%	0.046	**45.35**

Census Tract	Total Population	ZIP, Nearby City (to help approximate location only)	Latitude, Longitude	Draft CES 4 Pctl Range	Ozone	Ozone Pctl
6073018516	4166	92056 Oceanside	33.2001356, -117.2981757	40-45%	0.046	**45.34**
6073013905	4019	91977 Spring Valley	32.7222385, -116.9900814	10-15%	0.046	**45.25**
6073018513	9969	92056 Oceanside	33.2136656, -117.3079977	15-20%	0.046	**45.23**
6073020014	7927	92009 Carlsbad	33.0991711, -117.2469015	5-10%	0.046	**45.21**
6073008360	6676	92126 San Diego	32.8998788, -117.1295038	40-45%	0.046	**45.14**
6073009704	5973	92120 San Diego	32.8068307, -117.0607193	5-10%	0.046	**44.7**
6073017106	4786	92067 Rancho Santa Fe	33.0198637, -117.2118813	5-10%	0.046	**44.69**
6073013419	8700	91914 Chula Vista	32.6537849, -116.9524957	10-15%	0.046	**44.58**
6073018613	3978	92058 Oceanside	33.237618, -117.3334798	20-25%	0.046	**44.52**
6073014805	4545	91942 La Mesa	32.7765263, -117.0386117	25-30%	0.045	**44.29**
6073008349	3759	92126 San Diego	32.9166879, -117.1487913	10-15%	0.045	**44.17**
6073009706	7516	92120 San Diego	32.7864961, -117.0489527	5-10%	0.045	**44.14**
6073014806	2690	91942 La Mesa	32.7713036, -117.0352057	60-65%	0.045	**44.13**
6073018614	5872	92058 Oceanside	33.2306185, -117.3318904	30-35%	0.045	**43.96**
6073018517	4777	92056 Oceanside	33.1879915, -117.3027415	40-45%	0.045	**43.9**
6073009507	3773	92124 San Diego	32.8149696, -117.0747667	5-10%	0.045	**43.86**
6073013909	5081	91977 Spring Valley	32.7116102, -116.9898629	25-30%	0.045	**43.77**
6073008347	7037	92126 San Diego	32.9234425, -117.1578602	5-10%	0.045	**43.71**
6073018512	3935	92057 Oceanside	33.2187427, -117.3272179	15-20%	0.045	**43.51**
6073014601	4554	91941 La Mesa	32.7606911, -117.0300534	25-30%	0.045	**43.43**
6073013314	20437	91915 Chula Vista	32.6100121, -116.9557609	15-20%	0.045	**43.32**
6073020016	9657	92009 Carlsbad	33.0779769, -117.2527759	5-10%	0.045	**43.3**
6073014602	5471	91941 La Mesa	32.7533455, -117.0248015	35-40%	0.045	**43.26**

Census Tract	Total Population	ZIP, Nearby City (to help approximate location only)	Latitude, Longitude	Draft CES 4 Pctl Range	Ozone	Ozone Pctl
6073009400	4565	92145 San Diego	32.8653406, -117.1173287	50-55%	0.045	**43.25**
6073008351	4336	92126 San Diego	32.9071751, -117.1501108	20-25%	0.045	**43.12**
6073013802	3250	91977 Spring Valley	32.734589, -117.0104099	55-60%	0.045	**43.05**
6073017104	3848	92024 Encinitas	33.0487896, -117.2397938	5-10%	0.045	**43.01**
6073017107	2932	92024 Encinitas	33.0624939, -117.251696	1-5%	0.045	**42.6**
6073013906	5228	91977 Spring Valley	32.7267911, -117.0071856	50-55%	0.045	**42.59**
6073013907	4417	91977 Spring Valley	32.7202478, -117.0027482	45-50%	0.045	**42.38**
6073019803	4865	92010 Carlsbad	33.175329, -117.3081967	15-20%	0.045	**42.3**
6073008348	5985	92126 San Diego	32.9147375, -117.1629598	10-15%	0.045	**42.24**
6073021500	10079	92130 San Diego	32.9511062, -117.1889651	5-10%	0.045	**42.17**
6073018515	4924	92056 Oceanside	33.1916919, -117.3197917	25-30%	0.045	**42.08**
6073009506	4436	92124 San Diego	32.8247352, -117.0924729	1-5%	0.045	**42.07**
6073017108	4785	92024 Encinitas	33.0526994, -117.2532768	5-10%	0.045	**41.75**
6073002905	4278	92115 San Diego	32.7711381, -117.0496451	35-40%	0.045	**41.59**
6073008328	7012	92130 San Diego	32.9681969, -117.2061538	1-5%	0.045	**41.52**
6073013311	11303	91915 Chula Vista	32.6390207, -116.960394	15-20%	0.045	**41.49**
6073014700	7873	91942 La Mesa	32.7618944, -117.0421575	20-25%	0.045	**41.46**
6073022100	10228	92008 Carlsbad	33.124262, -117.2924294	25-30%	0.045	**41.18**
6073009703	3401	92120 San Diego	32.795586, -117.0736093	1-5%	0.045	**41.13**
6073019804	4433	92010 Carlsbad	33.163745, -117.3117343	1-5%	0.045	**41.07**
6073013903	4243	91977 Spring Valley	32.7017506, -116.996053	50-55%	0.045	**40.9**
6073014001	4518	91945 Lemon Grove	32.7369483, -117.023685	55-60%	0.045	**40.87**
6073018510	2958	92054 Oceanside	33.2158066, -117.3364699	30-35%	0.045	**40.81**

Census Tract	Total Population	ZIP, Nearby City (to help approximate location only)	Latitude, Longitude	Draft CES 4 Pctl Range	Ozone	Ozone Pctl
6073017403	5423	92024 Encinitas	33.0362413, -117.2529532	1-5%	0.045	**40.72**
6073009502	4095	92124 San Diego	32.8336423, -117.1102052	15-20%	0.045	**40.54**
6073013410	7911	91902 Bonita	32.6833235, -116.9849399	5-10%	0.045	**40.45**
6073013908	4041	91977 Spring Valley	32.7112382, -117.0050292	50-55%	0.045	**40.42**
6073017808	6041	92011 Carlsbad	33.0980696, -117.2875241	1-5%	0.045	**40.25**
6073010015	3079	92154 San Diego	32.560142, -116.9530603	55-60%	0.045	**40.14**
6073014400	4153	91945 Lemon Grove	32.7435374, -117.0341068	75-80%	0.045	**40.12**
6073018511	5382	92054 Oceanside	33.204411, -117.343109	35-40%	0.045	**40.04**
6073009602	4009	92120 San Diego	32.7987225, -117.0846348	15-20%	0.045	**40.02**
6073014002	4672	91945 Lemon Grove	32.7249965, -117.0195675	25-30%	0.045	**39.99**
6073009705	4243	92120 San Diego	32.78497, -117.073373	5-10%	0.045	**39.96**
6073017604	7427	92024 Encinitas	33.0553213, -117.2731463	15-20%	0.045	**39.95**
6073017601	5515	92024 Encinitas	33.0812238, -117.2787053	1-5%	0.045	**39.89**
6073002904	9674	92115 San Diego	32.7715642, -117.0626516	45-50%	0.045	**39.71**
6073017305	3247	92075 Solana Beach	33.0027873, -117.2420769	1-5%	0.045	**39.64**
6073018601	5339	92058 Oceanside	33.229909, -117.355054	45-50%	0.045	**39.6**
6073017810	4675	92008 Carlsbad	33.1483685, -117.3205365	1-5%	0.045	**39.48**
6073014500	4094	91941 La Mesa	32.7495164, -117.0438659	55-60%	0.045	**39.45**
6073017306	2586	92014 Del Mar	32.989035, -117.2402519	1-5%	0.044	**39.33**
6073009509	4352	92124 San Diego	32.8089036, -117.0870148	30-35%	0.044	**39.25**
6073008346	5045	92121 San Diego	32.9125478, -117.1877825	5-10%	0.044	**39.23**
6073008350	7008	92121 San Diego	32.8914561, -117.1716969	35-40%	0.044	**39.13**
6073017809	2322	92008 Carlsbad	33.1575405, -117.3266984	5-10%	0.044	**39.1**

Census Tract	Total Population	ZIP, Nearby City (to help approximate location only)	Latitude, Longitude	Draft CES 4 Pctl Range	Ozone	Ozone Pctl
6073017811	7107	92011 Carlsbad	33.1143888, -117.3081307	1-5%	0.044	**39.03**
6073018504	7191	92054 Oceanside	33.1869954, -117.3390811	30-35%	0.044	**39.02**
6073009510	4946	92124 San Diego	32.8171162, -117.109307	35-40%	0.044	**38.88**
6073017404	6805	92024 Encinitas	33.0221644, -117.2649644	15-20%	0.044	**38.86**
6073017801	6755	92008 Carlsbad	33.1753118, -117.3441023	10-15%	0.044	**38.84**
6073008330	6014	92130 San Diego	32.9512328, -117.2211586	5-10%	0.044	**38.72**
6073002902	7406	92115 San Diego	32.7604105, -117.058923	35-40%	0.044	**38.69**
6073017502	3894	92024 Encinitas	33.0422361, -117.2770112	30-35%	0.044	**38.68**
6073018603	6775	92058 Oceanside	33.2115108, -117.3586267	70-75%	0.044	**38.54**
6073013418	6629	91913 Chula Vista	32.6499238, -116.977811	5-10%	0.044	**38.47**
6073008327	5844	92130 San Diego	32.9677976, -117.2420969	5-10%	0.044	**38.23**
6073017603	2382	92024 Encinitas	33.0576984, -117.2904158	20-25%	0.044	**38.21**
6073008333	15726	92130 San Diego	32.9260179, -117.2092215	5-10%	0.044	**38.13**
6073014300	4315	91945 Lemon Grove	32.7375847, -117.0418316	65-70%	0.044	**38.12**
6073003108	3898	91977 Spring Valley	32.7074478, -117.0155941	55-60%	0.044	**38.07**
6073013417	2123	91913 Chula Vista	32.6590401, -116.9844864	5-10%	0.044	**37.96**
6073008331	2524	92130 San Diego	32.9426037, -117.2241058	1-5%	0.044	**37.87**
6073002903	4004	92115 San Diego	32.7498573, -117.0553352	55-60%	0.044	**37.85**
6073018509	5061	92054 Oceanside	33.1995448, -117.3606844	60-65%	0.044	**37.75**
6073009604	3578	92120 San Diego	32.7867685, -117.0917261	30-35%	0.044	**37.7**
6073014101	3502	91945 Lemon Grove	32.7243261, -117.0325983	35-40%	0.044	**37.66**
6073017701	5241	92024 Encinitas	33.0772389, -117.3060959	20-25%	0.044	**37.59**
6073009511	4324	92124 San Diego	32.8036915, -117.1085759	25-30%	0.044	**37.56**

Census Tract	Total Population	ZIP, Nearby City (to help approximate location only)	Latitude, Longitude	Draft CES 4 Pctl Range	Ozone	Ozone Pctl
6073017813	4113	92011 Carlsbad	33.1220083, -117.3269889	10-15%	0.044	**37.55**
6073017401	5714	92007 Cardiff By the Sea	33.0216822, -117.2792618	10-15%	0.044	**37.37**
6073017900	7049	92008 Carlsbad	33.1595744, -117.3445439	25-30%	0.044	**37.34**
6073002801	3262	92115 San Diego	32.7755353, -117.0837903	50-55%	0.044	**37.31**
6073017702	3550	92024 Encinitas	33.0572295, -117.2996671	10-15%	0.044	**37.24**
6073002804	5602	92115 San Diego	32.7647357, -117.0739019	45-50%	0.044	**37.21**
6073017501	3039	92024 Encinitas	33.0402437, -117.2920275	10-15%	0.044	**37.19**
6073017303	2760	92075 Solana Beach	33.0018126, -117.2636285	1-5%	0.044	**37.14**
6073017304	6094	92075 Solana Beach	32.9903701, -117.2633676	10-15%	0.044	**37**
6073008329	7220	92130 San Diego	32.944286, -117.235812	1-5%	0.044	**36.98**
6073018000	3293	92008 Carlsbad	33.1547915, -117.3499851	10-15%	0.044	**36.83**
6073003107	6039	92114 San Diego	32.7062651, -117.0230027	40-45%	0.044	**36.74**
6073018100	6432	92054 Oceanside	33.1771015, -117.3611032	30-35%	0.044	**36.71**
6073014200	6455	91945 Lemon Grove	32.7274195, -117.0431132	55-60%	0.044	**36.66**
6073018200	6760	92054 Oceanside	33.1896924, -117.3702384	65-70%	0.044	**36.48**
6073008511	4610	92123 San Diego	32.8259958, -117.1415783	55-60%	0.044	**36.47**
6073003105	4685	92114 San Diego	32.710698, -117.0295699	40-45%	0.044	**36.43**
6073002702	6539	92115 San Diego	32.7542098, -117.0728017	40-45%	0.044	**36.34**
6073008324	7222	92014 Del Mar	32.9516034, -117.2502783	5-10%	0.044	**36.29**
6073002803	5117	92115 San Diego	32.7638379, -117.0835961	40-45%	0.044	**36.27**
6073009306	5774	92123 San Diego	32.7997476, -117.1197526	50-55%	0.044	**36.23**
6073018400	3275	92054 Oceanside	33.1990594, -117.3796249	45-50%	0.044	**36.14**
6073010014	19418	92154 San Diego	32.5754388, -116.9784514	55-60%	0.044	**36.13**

Census Tract	Total Population	ZIP, Nearby City (to help approximate location only)	Latitude, Longitude	Draft CES 4 Pctl Range	Ozone	Ozone Pctl
6073002703	7073	92115 San Diego	32.7451078, -117.0658125	60-65%	0.044	**36.1**
6073009603	5436	92108 San Diego	32.7859743, -117.1067006	20-25%	0.044	**36.08**
6073014102	4199	92114 San Diego	32.7163209, -117.0381036	30-35%	0.044	**35.99**
6073017200	4316	92014 Del Mar	32.9625651, -117.2641232	5-10%	0.044	**35.89**
6073003214	5376	91977 Spring Valley	32.6944869, -117.0201686	40-45%	0.044	**35.86**
6073013416	3921	91913 Chula Vista	32.6481404, -116.9935066	5-10%	0.044	**35.56**
6073018300	2280	92054 Oceanside	33.201527, -117.3896198	15-20%	0.043	**35.51**
6073002002	2738	92115 San Diego	32.7645572, -117.0929252	10-15%	0.043	**35.47**
6073002708	5646	92115 San Diego	32.7531727, -117.0830585	60-65%	0.043	**35.3**
6073009301	5140	92123 San Diego	32.8015574, -117.1342573	30-35%	0.043	**35.21**
6073002711	3443	92105 San Diego	32.7392175, -117.0715691	70-75%	0.043	**35.18**
6073008339	2053	92121 San Diego	32.9028483, -117.231235	50-55%	0.043	**35.15**
6073002001	3329	92116 San Diego	32.7699149, -117.104299	1-5%	0.043	**35.07**
6073003003	5755	92114 San Diego	32.7250639, -117.0575534	70-75%	0.043	**35**
6073008340	9799	92122 San Diego	32.8680772, -117.2035171	20-25%	0.043	**34.97**
6073009305	4630	92123 San Diego	32.7912089, -117.1278103	20-25%	0.043	**34.95**
6073008344	3598	92122 San Diego	32.8583742, -117.1962537	5-10%	0.043	**34.86**
6073002707	5767	92105 San Diego	32.7529867, -117.0895143	45-50%	0.043	**34.79**
6073002301	3012	92115 San Diego	32.7573492, -117.0947635	40-45%	0.043	**34.71**
6073008345	4106	92122 San Diego	32.8501753, -117.1916155	20-25%	0.043	**34.61**
6073003103	6431	92114 San Diego	32.7070141, -117.0441008	55-60%	0.043	**34.45**
6073008505	6576	92117 San Diego	32.8402976, -117.1850238	60-65%	0.043	**34.42**
6073013415	1482	91910 Chula Vista	32.6383744, -116.9983443	10-15%	0.043	**34.34**

Census Tract	Total Population	ZIP, Nearby City (to help approximate location only)	Latitude, Longitude	Draft CES 4 Pctl Range	Ozone	Ozone Pctl
6073009201	5882	92123 San Diego	32.8015387, -117.146338	60-65%	0.043	**34.32**
6073002710	4518	92105 San Diego	32.7439483, -117.0844892	55-60%	0.043	**34.31**
6073013313	18145	91915 Chula Vista	32.6023181, -116.9847218	30-35%	0.043	**34.23**
6073008507	7789	92117 San Diego	32.8262504, -117.1737801	40-45%	0.043	**34.16**
6073002302	7233	92105 San Diego	32.7525425, -117.0963988	45-50%	0.043	**34.1**
6073008341	8054	92037 La Jolla	32.8692105, -117.2175075	30-35%	0.043	**34.04**
6073003213	4462	92139 San Diego	32.688526, -117.0307834	30-35%	0.043	**33.99**
6073002712	5151	92105 San Diego	32.7297628, -117.0732171	75-80%	0.043	**33.91**
6073013310	32326	91913 Chula Vista	32.6261904, -116.9977852	35-40%	0.043	**33.88**
6073003115	7088	92114 San Diego	32.6955807, -117.0379718	50-55%	0.043	**33.84**
6073002709	4250	92105 San Diego	32.7439931, -117.0896386	50-55%	0.043	**33.83**
6073008305	1877	92037 La Jolla	32.8797622, -117.2318176	30-35%	0.043	**33.74**
6073001900	3131	92116 San Diego	32.7696657, -117.1196457	10-15%	0.043	**33.68**
6073002100	5319	92116 San Diego	32.7586957, -117.1084678	30-35%	0.043	**33.62**
6073008343	5052	92122 San Diego	32.8626551, -117.2175882	10-15%	0.043	**33.6**
6073008510	7259	92111 San Diego	32.8083089, -117.1629093	45-50%	0.043	**33.57**
6073008506	4596	92117 San Diego	32.8302338, -117.1867776	35-40%	0.043	**33.53**
6073013411	5286	91902 Bonita	32.6602275, -117.0130151	15-20%	0.043	**33.5**
6073003114	3532	92114 San Diego	32.6998002, -117.0450027	30-35%	0.043	**33.48**
6073008509	7795	92111 San Diego	32.8149643, -117.1718159	35-40%	0.043	**33.45**
6073008363	5269	92122 San Diego	32.8654716, -117.2229262	15-20%	0.043	**33.44**
6073002705	4151	92105 San Diego	32.7338692, -117.0835759	55-60%	0.043	**33.32**
6073008307	3870	92122 San Diego	32.8521593, -117.2117936	10-15%	0.043	**33.3**

Census Tract	Total Population	ZIP, Nearby City (to help approximate location only)	Latitude, Longitude	Draft CES 4 Pctl Range	Ozone	Ozone Pctl
6073002202	5473	92105 San Diego	32.7523973, -117.1051018	65-70%	0.043	**33.27**
6073002601	5820	92105 San Diego	32.7449119, -117.0966252	45-50%	0.043	**33.25**
6073009202	6221	92123 San Diego	32.7860364, -117.1428842	15-20%	0.043	**33.24**
6073003004	5177	92114 San Diego	32.7130823, -117.0607339	55-60%	0.043	**33.23**
6073001800	5852	92116 San Diego	32.7628849, -117.1186054	40-45%	0.043	**33.18**
6073008312	3720	92037 La Jolla	32.9053825, -117.252727	25-30%	0.043	**32.98**
6073008361	2671	92037 La Jolla	32.8680044, -117.2341464	20-25%	0.043	**32.93**
6073008364	6180	92122 San Diego	32.8599014, -117.2274041	15-20%	0.043	**32.86**
6073002402	5212	92105 San Diego	32.7468137, -117.1052315	70-75%	0.043	**32.83**
6073008701	3112	92111 San Diego	32.7980374, -117.1638831	25-30%	0.043	**32.78**
6073009304	9276	92108 San Diego	32.773662, -117.1371758	45-50%	0.043	**32.77**
6073002201	3358	92105 San Diego	32.7524807, -117.1124957	65-70%	0.043	**32.76**
6073008502	6993	92117 San Diego	32.8373057, -117.206765	20-25%	0.043	**32.68**
6073001700	4370	92116 San Diego	32.7582452, -117.1207142	30-35%	0.043	**32.63**
6073008702	5261	92123 San Diego	32.7883567, -117.155885	50-55%	0.043	**32.61**
6073008504	6134	92117 San Diego	32.8226369, -117.195777	25-30%	0.043	**32.52**
6073003001	4692	92114 San Diego	32.7174916, -117.0753816	70-75%	0.043	**32.51**
6073003209	5663	92139 San Diego	32.6835898, -117.0387603	40-45%	0.043	**32.5**
6073008362	3338	92037 La Jolla	32.8589728, -117.2334092	20-25%	0.043	**32.48**
6073002602	4444	92105 San Diego	32.7357597, -117.0972747	50-55%	0.043	**32.46**
6073003112	4680	92114 San Diego	32.7058788, -117.0628402	45-50%	0.043	**32.38**
6073001100	3238	92116 San Diego	32.7652989, -117.133414	10-15%	0.043	**32.35**
6073003207	6468	91902 Bonita	32.6716968, -117.0309545	35-40%	0.042	**32.25**

Census Tract	Total Population	ZIP, Nearby City (to help approximate location only)	Latitude, Longitude	Draft CES 4 Pctl Range	Ozone	Ozone Pctl
6073008306	3205	92122 San Diego	32.8472028, -117.2264811	10-15%	0.042	**32.2**
6073002401	4864	92104 San Diego	32.7470742, -117.1151978	55-60%	0.042	**32.15**
6073001600	5272	92104 San Diego	32.7521609, -117.1213219	60-65%	0.042	**32.13**
6073008513	2792	92111 San Diego	32.8034143, -117.1810994	10-15%	0.042	**32.08**
6073008512	4725	92111 San Diego	32.8093223, -117.1881489	10-15%	0.042	**32.06**
6073002501	5583	92105 San Diego	32.7400405, -117.1096419	75-80%	0.042	**31.92**
6073001200	6186	92116 San Diego	32.7580745, -117.1317978	20-25%	0.042	**31.89**
6073008313	2195	92037 La Jolla	32.8551617, -117.2409319	1-5%	0.042	**31.82**
6073013414	7444	91910 Chula Vista	32.6311503, -117.0127578	20-25%	0.042	**31.76**
6073003401	6711	92102 San Diego	32.7249834, -117.0950788	55-60%	0.042	**31.67**
6073008800	6928	92111 San Diego	32.7824761, -117.165353	50-55%	0.042	**31.66**
6073003109	3477	92114 San Diego	32.6918459, -117.0556229	35-40%	0.042	**31.64**
6073001000	4677	92116 San Diego	32.7603326, -117.1417318	10-15%	0.042	**31.49**
6073008501	5866	92117 San Diego	32.8318456, -117.2237382	1-5%	0.042	**31.47**
6073008600	7296	92111 San Diego	32.7908268, -117.1779398	50-55%	0.042	**31.46**
6073001300	6329	92104 San Diego	32.7512721, -117.1323173	25-30%	0.042	**31.41**
6073001500	3682	92104 San Diego	32.7437342, -117.1233872	35-40%	0.042	**31.33**
6073009102	3726	92117 San Diego	32.8035298, -117.1955335	30-35%	0.042	**31.3**
6073003113	5085	92114 San Diego	32.6961845, -117.0644799	40-45%	0.042	**31.29**
6073003208	6701	92139 San Diego	32.6786956, -117.0452492	60-65%	0.042	**31.26**
6073013421	4424	91910 Chula Vista	32.6453703, -117.0210214	15-20%	0.042	**31.24**
6073008503	6859	92117 San Diego	32.8176578, -117.2135819	45-50%	0.042	**31.16**
6073002502	6538	92105 San Diego	32.7281564, -117.1080241	70-75%	0.042	**31.08**

Census Tract	Total Population	ZIP, Nearby City (to help approximate location only)	Latitude, Longitude	Draft CES 4 Pctl Range	Ozone	Ozone Pctl
6073003111	6897	92114 San Diego	32.7050468, -117.0807478	65-70%	0.042	**31**
6073013420	3413	91910 Chula Vista	32.6400015, -117.021233	15-20%	0.042	**30.99**
6073000500	3271	92116 San Diego	32.7606645, -117.1521772	30-35%	0.042	**30.96**
6073000900	5578	92104 San Diego	32.7518529, -117.141957	20-25%	0.042	**30.91**
6073001400	3380	92104 San Diego	32.74474, -117.1330809	10-15%	0.042	**30.9**
6073003404	4942	92102 San Diego	32.7139554, -117.0939094	80-85%	0.042	**30.82**
6073009101	6188	92117 San Diego	32.800198, -117.2039519	25-30%	0.042	**30.69**
6073009000	4571	92111 San Diego	32.7782882, -117.1788279	40-45%	0.042	**30.65**
6073008901	5440	92111 San Diego	32.7726384, -117.1727594	40-45%	0.042	**30.62**
6073004200	6180	92104 San Diego	32.7293167, -117.1194261	20-25%	0.042	**30.52**
6073003101	4242	92114 San Diego	32.6994123, -117.0801318	55-60%	0.042	**30.49**
6073003304	4230	92102 San Diego	32.7067366, -117.0902817	65-70%	0.042	**30.47**
6073000600	3446	92103 San Diego	32.7529964, -117.1518924	20-25%	0.042	**30.45**
6073003201	5446	92139 San Diego	32.6836181, -117.0608884	45-50%	0.042	**30.43**
6073004300	3937	92104 San Diego	32.7353586, -117.1293851	25-30%	0.042	**30.42**
6073009103	3845	92110 San Diego	32.7878017, -117.1956419	15-20%	0.042	**30.4**
6073000800	5026	92104 San Diego	32.7447819, -117.1420277	10-15%	0.042	**30.39**
6073003211	3489	92139 San Diego	32.6775705, -117.0547677	35-40%	0.042	**30.35**
6073008303	3571	92037 La Jolla	32.8407682, -117.2571877	1-5%	0.042	**30.34**
6073008301	2996	92109 San Diego	32.81621, -117.2324258	1-5%	0.042	**30.23**
6073008310	6536	92037 La Jolla	32.8253173, -117.2458162	1-5%	0.042	**30.14**
6073007800	6179	92109 San Diego	32.8039041, -117.2243397	15-20%	0.042	**30.06**
6073009104	3232	92110 San Diego	32.7798721, -117.1959381	10-15%	0.042	**29.99**

Census Tract	Total Population	ZIP, Nearby City (to help approximate location only)	Latitude, Longitude	Draft CES 4 Pctl Range	Ozone	Ozone Pctl
6073003403	3920	92102 San Diego	32.7136131, -117.1085408	80-85%	0.042	**29.98**
6073000700	4593	92103 San Diego	32.7447633, -117.1513148	40-45%	0.042	**29.96**
6073000400	3758	92103 San Diego	32.7533323, -117.1630579	35-40%	0.042	**29.92**
6073008200	2900	92037 La Jolla	32.845504, -117.2757498	5-10%	0.042	**29.77**
6073008902	2218	92108 San Diego	32.7635585, -117.179893	35-40%	0.042	**29.76**
6073003305	5920	92113 San Diego	32.697889, -117.0900688	75-80%	0.042	**29.71**
6073003212	4306	92139 San Diego	32.6696208, -117.0537791	35-40%	0.042	**29.67**
6073004400	4187	92102 San Diego	32.7243369, -117.129657	20-25%	0.041	**29.6**
6073009107	5142	92110 San Diego	32.7677269, -117.1885238	25-30%	0.041	**29.58**
6073000201	1915	92103 San Diego	32.7540028, -117.1733775	15-20%	0.041	**29.38**
6073003301	3916	92113 San Diego	32.7027556, -117.1018968	85-90%	0.041	**29.37**
6073011902	5501	91950 National City	32.6883686, -117.0816035	60-65%	0.041	**29.35**
6073008002	2944	92109 San Diego	32.8083069, -117.2422494	1-5%	0.041	**29.31**
6073000300	5094	92103 San Diego	32.7447803, -117.1622682	45-50%	0.041	**29.28**
6073013412	5054	91902 Bonita	32.6499247, -117.0387029	25-30%	0.041	**29.27**
6073008311	3048	92037 La Jolla	32.8253212, -117.2633257	1-5%	0.041	**29.23**
6073009106	4939	92110 San Diego	32.7712924, -117.1982516	35-40%	0.041	**29.22**
6073007903	4220	92109 San Diego	32.8025162, -117.2397403	10-15%	0.041	**29.12**
6073007908	3498	92109 San Diego	32.7981576, -117.2344938	20-25%	0.041	**29.11**
6073005600	4549	92101 San Diego	32.7303885, -117.1472238	40-45%	0.041	**29.1**
6073012003	3510	91950 National City	32.6801039, -117.0744466	60-65%	0.041	**29.05**
6073013312	2736	91911 Chula Vista	32.6009941, -117.0326038	60-65%	0.041	**29.02**
6073008101	3859	92037 La Jolla	32.8329093, -117.2778263	5-10%	0.041	**28.96**

Census Tract	Total Population	ZIP, Nearby City (to help approximate location only)	Latitude, Longitude	Draft CES 4 Pctl Range	Ozone	Ozone Pctl
6073003202	4563	92139 San Diego	32.6719721, -117.0643688	50-55%	0.041	**28.94**
6073010013	5871	92173 San Ysidro	32.5555517, -117.047455	80-85%	0.041	**28.91**
6073003501	4766	92113 San Diego	32.706039, -117.1145576	90-95%	0.041	**28.89**
6073012002	3828	91950 National City	32.6817745, -117.0792559	60-65%	0.041	**28.84**
6073004100	7371	92102 San Diego	32.714833, -117.1292493	70-75%	0.041	**28.8**
6073010009	6918	92173 San Ysidro	32.5473763, -117.0528794	70-75%	0.041	**28.76**
6073000202	4583	92103 San Diego	32.7453846, -117.1751643	20-25%	0.041	**28.71**
6073007907	3670	92109 San Diego	32.7965191, -117.2417581	15-20%	0.041	**28.7**
6073003303	4847	92113 San Diego	32.6928057, -117.0986406	75-80%	0.041	**28.67**
6073000100	3250	92103 San Diego	32.7530053, -117.1858941	5-10%	0.041	**28.66**
6073005500	280	92134 San Diego	32.7241215, -117.1468406	NA	0.041	**28.61**
6073007702	4093	92109 San Diego	32.7898373, -117.2350137	1-5%	0.041	**28.6**
6073013309	6520	91911 Chula Vista	32.6183278, -117.0337536	50-55%	0.041	**28.56**
6073006000	4243	92103 San Diego	32.7360508, -117.164543	15-20%	0.041	**28.55**
6073004501	2570	92102 San Diego	32.717632, -117.1381735	45-50%	0.041	**28.54**
6073008003	4120	92109 San Diego	32.8047692, -117.254695	1-5%	0.041	**28.53**
6073013409	5197	91910 Chula Vista	32.6331941, -117.0358624	55-60%	0.041	**28.5**
6073010003	6138	92154 San Diego	32.5788424, -117.0440935	55-60%	0.041	**28.44**
6073010005	8187	92173 San Ysidro	32.5641527, -117.0496159	75-80%	0.041	**28.43**
6073004000	4828	92102 San Diego	32.708779, -117.127118	80-85%	0.041	**28.4**
6073008102	3542	92037 La Jolla	32.8191521, -117.2734661	1-5%	0.041	**28.39**
6073008006	3971	92037 La Jolla	32.8086093, -117.2628601	1-5%	0.041	**28.34**
6073007905	2895	92109 San Diego	32.7996991, -117.2526157	5-10%	0.041	**28.29**

Census Tract	Total Population	ZIP, Nearby City (to help approximate location only)	Latitude, Longitude	Draft CES 4 Pctl Range	Ozone	Ozone Pctl
6073003502	4537	92113 San Diego	32.6986004, -117.1134902	85-90%	0.041	**28.25**
6073007701	3864	92109 San Diego	32.7883849, -117.2400754	5-10%	0.041	**28.18**
6073003602	3213	92113 San Diego	32.6929366, -117.1074107	80-85%	0.041	**28.1**
6073022000	4311	91950 National City	32.6798189, -117.0871662	70-75%	0.041	**28.06**
6073006100	2280	92103 San Diego	32.7364189, -117.1737119	45-50%	0.041	**28.05**
6073005900	3209	92101 San Diego	32.7293426, -117.1642671	50-55%	0.041	**28**
6073013306	4266	91911 Chula Vista	32.6036598, -117.0400229	65-70%	0.041	**27.9**
6073003901	4406	92113 San Diego	32.7035568, -117.1267377	90-95%	0.041	**27.88**
6073007910	2993	92109 San Diego	32.7943988, -117.2539836	5-10%	0.041	**27.87**
6073004600	1968	92102 San Diego	32.7151851, -117.1449018	55-60%	0.041	**27.85**
6073011802	7734	91950 National City	32.684033, -117.096668	80-85%	0.041	**27.8**
6073010004	5067	92154 San Diego	32.5709007, -117.0523008	50-55%	0.041	**27.79**
6073007600	4746	92109 San Diego	32.7815696, -117.2254607	20-25%	0.041	**27.73**
6073005700	1612	92101 San Diego	32.7252818, -117.1625607	75-80%	0.041	**27.72**
6073006500	3285	92110 San Diego	32.7521188, -117.2008368	55-60%	0.041	**27.7**
6073004800	3879	92102 San Diego	32.708456, -117.1381401	80-85%	0.041	**27.68**
6073003204	3392	91902 Bonita	32.656474, -117.0578802	30-35%	0.041	**27.65**
6073010012	5121	92173 San Ysidro	32.5607791, -117.0584994	70-75%	0.041	**27.64**
6073012102	3652	91950 National City	32.6703501, -117.0785905	75-80%	0.041	**27.6**
6073005200	6616	92101 San Diego	32.7155275, -117.1521097	65-70%	0.041	**27.57**
6073003603	4010	92113 San Diego	32.6866623, -117.1075924	90-95%	0.041	**27.53**
6073003601	2877	92113 San Diego	32.6909862, -117.1165151	95-100%	0.041	**27.48**
6073004700	1711	92102 San Diego	32.7083889, -117.1450748	75-80%	0.041	**27.44**

Census Tract	Total Population	ZIP, Nearby City (to help approximate location only)	Latitude, Longitude	Draft CES 4 Pctl Range	Ozone	Ozone Pctl
6073005800	3541	92101 San Diego	32.7249027, -117.1705898	45-50%	0.041	**27.42**
6073013308	3497	91911 Chula Vista	32.591757, -117.0490687	65-70%	0.041	**27.41**
6073003902	4055	92113 San Diego	32.696749, -117.1263197	95-100%	0.041	**27.39**
6073010011	3976	92154 San Diego	32.5795147, -117.0547796	25-30%	0.041	**27.34**
6073004900	5391	92113 San Diego	32.7018526, -117.138677	95-100%	0.041	**27.26**
6073012200	3557	91950 National City	32.6639283, -117.0738536	55-60%	0.041	**27.23**
6073005300	5570	92101 San Diego	32.7156831, -117.1615102	70-75%	0.041	**27.22**
6073011801	4106	91950 National City	32.6804224, -117.1041616	75-80%	0.041	**27.21**
6073006600	1805	92110 San Diego	32.745617, -117.2061684	50-55%	0.041	**27.17**
6073006300	3715	92140 San Diego	32.7377186, -117.1977435	NA	0.041	**27.13**
6073013307	4982	91911 Chula Vista	32.5988025, -117.0502967	75-80%	0.041	**27.08**
6073010001	4299	92154 San Diego	32.586813, -117.0554913	55-60%	0.041	**27.07**
6073010111	3461	92173 San Ysidro	32.5641819, -117.0662396	75-80%	0.041	**27.06**
6073006200	23	92101 San Diego	32.7317286, -117.1904453	NA	0.041	**27.03**
6073011700	6112	91950 National City	32.6738101, -117.0970458	85-90%	0.041	**27.01**
6073006802	5400	92106 San Diego	32.7501717, -117.218481	55-60%	0.041	**26.94**
6073005100	6711	92113 San Diego	32.7037376, -117.1528082	80-85%	0.041	**26.75**
6073006801	2861	92107 San Diego	32.7547551, -117.2292656	30-35%	0.041	**26.73**
6073005400	7717	92101 San Diego	32.7119409, -117.1666546	60-65%	0.041	**26.72**
6073003800	6252	92136 San Diego	32.6835337, -117.1207979	NA	0.041	**26.68**
6073013303	5199	91911 Chula Vista	32.6077631, -117.0502312	55-60%	0.041	**26.65**
6073010010	5260	92154 San Diego	32.5783698, -117.0636964	50-55%	0.041	**26.63**
6073012101	2128	91950 National City	32.6651034, -117.0878571	65-70%	0.041	**26.57**

Census Tract	Total Population	ZIP, Nearby City (to help approximate location only)	Latitude, Longitude	Draft CES 4 Pctl Range	Ozone	Ozone Pctl
6073005000	2360	92113 San Diego	32.6948502, -117.1411746	95-100%	0.041	**26.55**
6073013302	4797	91911 Chula Vista	32.6155251, -117.048661	50-55%	0.041	**26.5**
6073006900	5762	92106 San Diego	32.7430417, -117.2219519	15-20%	0.04	**26.29**
6073011601	5699	91950 National City	32.6663314, -117.0964015	80-85%	0.04	**26.27**
6073010106	5985	92154 San Diego	32.5717846, -117.0723177	55-60%	0.04	**26.22**
6073013301	5453	91911 Chula Vista	32.623861, -117.0510608	45-50%	0.04	**26.01**
6073007501	4049	92107 San Diego	32.751974, -117.243159	10-15%	0.04	**26**
6073007400	7505	92107 San Diego	32.7451404, -117.235253	15-20%	0.04	**25.94**
6073012303	3383	91910 Chula Vista	32.6512908, -117.0732999	50-55%	0.04	**25.92**
6073010109	5077	92154 San Diego	32.5494881, -117.0884184	60-65%	0.04	**25.89**
6073013204	3938	91911 Chula Vista	32.5982825, -117.0637049	70-75%	0.04	**25.87**
6073010112	5168	92154 San Diego	32.5689086, -117.0804032	50-55%	0.04	**25.86**
6073011602	3964	91950 National City	32.6599903, -117.0941732	80-85%	0.04	**25.77**
6073021400	7144	92106 San Diego	32.7323401, -117.219952	35-40%	0.04	**25.74**
6073013401	4280	91910 Chula Vista	32.6353409, -117.0562074	55-60%	0.04	**25.48**
6073007502	3175	92107 San Diego	32.747805, -117.2489105	1-5%	0.04	**25.46**
6073012304	3548	91910 Chula Vista	32.6439929, -117.0701179	55-60%	0.04	**25.44**
6073013203	6351	91911 Chula Vista	32.6067804, -117.0642137	55-60%	0.04	**25.4**
6073012401	3651	91950 National City	32.6511008, -117.0905516	70-75%	0.04	**25.39**
6073011000	3817	92118 Coronado	32.6938849, -117.170224	5-10%	0.04	**25.38**
6073010107	7101	92154 San Diego	32.5820941, -117.0793152	55-60%	0.04	**25.34**
6073010110	8082	92154 San Diego	32.5703957, -117.0885683	60-65%	0.04	**25.2**
6073011100	4529	92118 Coronado	32.6973819, -117.1785782	15-20%	0.04	**25.19**

Census Tract	Total Population	ZIP, Nearby City (to help approximate location only)	Latitude, Longitude	Draft CES 4 Pctl Range	Ozone	Ozone Pctl
6073013206	7519	91911 Chula Vista	32.5991876, -117.0722501	65-70%	0.04	**25.1**
6073007002	2967	92106 San Diego	32.7323705, -117.235636	5-10%	0.04	**25.07**
6073009902	0	92118 Coronado	32.7122439, -117.1887005	NA	0.04	**24.92**
6073007302	2220	92107 San Diego	32.7357705, -117.2446667	1-5%	0.04	**24.89**
6073007301	5393	92107 San Diego	32.7408214, -117.252275	1-5%	0.04	**24.88**
6073010104	3744	92154 San Diego	32.5673601, -117.0970321	60-65%	0.04	**24.79**
6073013102	6359	91911 Chula Vista	32.6166605, -117.0657271	40-45%	0.04	**24.78**
6073010900	2078	92118 Coronado	32.6854276, -117.1703733	5-10%	0.04	**24.75**
6073012302	1649	91910 Chula Vista	32.6409446, -117.080293	45-50%	0.04	**24.73**
6073021900	6194	91950 National City	32.6564826, -117.1150589	80-85%	0.04	**24.72**
6073012402	5050	91910 Chula Vista	32.6430592, -117.0878962	70-75%	0.04	**24.65**
6073010800	2784	92118 Coronado	32.6906311, -117.182643	5-10%	0.04	**24.62**
6073012800	4028	91910 Chula Vista	32.6358462, -117.0709931	50-55%	0.04	**24.6**
6073013205	2449	91911 Chula Vista	32.5966578, -117.0802103	85-90%	0.04	**24.53**
6073012900	3154	91910 Chula Vista	32.6274203, -117.0676039	30-35%	0.04	**24.37**
6073021800	2316	92118 Coronado	32.686581, -117.1850758	1-5%	0.04	**24.34**
6073013104	6357	91911 Chula Vista	32.6131276, -117.0779491	55-60%	0.04	**24.29**
6073021600	3195	92118 Coronado	32.6572021, -117.1561371	25-30%	0.04	**24.23**
6073011300	2775	92135 San Diego	32.6992345, -117.2096422	NA	0.04	**24.22**
6073012700	5083	91910 Chula Vista	32.6341315, -117.0851125	75-80%	0.04	**24.19**
6073010402	6298	91932 Imperial Beach	32.5727796, -117.1057746	60-65%	0.04	**24.16**
6073007100	4701	92106 San Diego	32.7171992, -117.2390197	5-10%	0.04	**24.09**
6073013000	6213	91910 Chula Vista	32.6248441, -117.0798163	50-55%	0.04	**24**

Census Tract	Total Population	ZIP, Nearby City (to help approximate location only)	Latitude, Longitude	Draft CES 4 Pctl Range	Ozone	Ozone Pctl
6073012501	3118	91910 Chula Vista	32.6335939, -117.0936978	85-90%	0.04	**23.91**
6073012502	4200	91910 Chula Vista	32.6421028, -117.1094056	90-95%	0.04	**23.9**
6073013103	2695	91911 Chula Vista	32.6092325, -117.0887814	70-75%	0.04	**23.85**
6073010401	2505	91932 Imperial Beach	32.5794072, -117.1072875	45-50%	0.04	**23.82**
6073007200	6082	92106 San Diego	32.7215901, -117.2533174	1-5%	0.04	**23.81**
6073010103	6367	92154 San Diego	32.5996184, -117.0958327	60-65%	0.04	**23.8**
6073010200	7263	91932 Imperial Beach	32.5653537, -117.1145672	55-60%	0.04	**23.63**
6073010300	4323	91932 Imperial Beach	32.575638, -117.1144635	65-70%	0.04	**23.61**
6073010502	5396	91932 Imperial Beach	32.5860463, -117.1129542	65-70%	0.04	**23.5**
6073012600	4894	91910 Chula Vista	32.6205359, -117.1032969	80-85%	0.04	**23.47**
6073010501	1471	91932 Imperial Beach	32.5854741, -117.1255468	45-50%	0.039	**23.1**
6073010601	2126	92118 Coronado	32.623646, -117.1291938	5-10%	0.039	**22.81**
6073009901	809	92106 San Diego	32.6853619, -117.2455744	NA	0.039	**22.55**

ATTACHMENT G

RAQS IMPLEMENTATION PROGRESS SINCE 2016

Ozone control measures identified in the 2016 RAQS Revision, or measures identified since the 2016 RAQS Revision, that have been adopted as rules or rule revisions are summarized in Table G-1. A discussion of each measure follows Table G-1.

Table G-1
Ozone Control Measures Adopted, 2016-2022

Pollutant/ Control Measure	2016 RAQS Adoption Schedule	2022 RAQS Status	Year of Full Implement-ation	2016 RAQS Expected Emission Reductions (tons/day)	2022 RAQS Revised Emission Reductions (tons/day)	Cost-Effective-ness ($/lb)
VOC/ Further Control of Cold Solvent Cleaning and Stripping Operations (Amended Rule 67.6.1)	N/A	Amended 2/10/2021	2021	N/A	N/A	N/A
VOC/ Further Control of Vapor Degreasing Operations (Amended Rule 67.6.2)	N/A	Amended 2/10/2021	2021	N/A	N/A	N/A
VOC/ Further Control of Architectural Coatings (Amended Rule 67.0.1)	N/A	Amended 2/10/2021	2022	N/A	0.22	$1.57
NOx/ Further Control of New/Replacement Stationary Reciprocating Internal Combustion Engines (Amended Rule 69.4.1)	2017 (High Priority)	Amended 7/8/2020	2030	0.12	0.80	$5.21
NOx/ Control of New Water Heaters, Small Boilers, Process Heaters, and Steam Generators between 75,000 and 600,000 BTU/hour (Amended Rule 69.2.1)	2017 (High Priority)	Adopted 7/8/2020	2036	0.80	0.76	$4.72
NOx/ Control of Medium Boilers, Process Heaters, and Steam Generators between 2-5 million BTU/hour (Adopted New Rule 69.2.2)	Delayed until cost-effective	Adopted 7/8/2020	2041	0.25	0.53	$6.33
NOx/ Further Control of Stationary Gas Turbine Engines (Amended Rule 69.3.1)	N/A	Amended 12/9/2021	2021	N/A	N/A	N/A

Further Control of Cold Solvent Cleaning and Stripping Operations
(Amended Rule 67.6.1)

Solvent cleaning control measures address VOC emissions generated by the application of solvents (held in a tank or reservoir) to remove unwanted materials, such as dirt and oils, from a surface. Since initial rule adoption, Rule 67.6.1 limited the VOC content of solvent utilized in cold solvent cleaning operations to 50 grams per liter of material or less, in addition to other requirements. Amendments to Rule 67.6.1 reduced this limit to 25 grams per liter of material or less, and also made other minor revisions necessary to meet federal requirements as needed. Rule 67.6.1 was amended by the Board in February 2021. Because the changes were primarily administrative to comply with federal requirements, the amended rule did not significantly reduce measurable VOC emissions.

Further Control of Vapor Degreasing Operations
(Amended Rule 67.6.2)

As mentioned above, solvent cleaning measures address VOC emissions generated by the application of solvents (held in a tank or reservoir) to remove unwanted materials, such as dirt and oils, from a surface. Rule 67.6.2 previously limited the VOC content of solvent used in vapor degreasing and cleaning operations to 50 grams per liter of material or less. Similar to Rule 67.6.1, amendments to Rule 67.6.2 were adopted by the Board in February 2021 to reduce this limit to 25 grams per liter of material or less. Other minor revisions necessary to meet federal requirements as needed were also incorporated. Because the changes were primarily administrative to comply with federal requirements, the amended rule did not significantly reduce measurable VOC emissions.

Further Control of Architectural Coatings
(Amended Rule 67.0.1)

Architectural coatings include house paints, stains, industrial maintenance coatings, and other coatings. These coatings contain VOC that evaporate as the coating is applied and dries, contributing to ozone pollution in the region. At time of initial adoption, Rule 67.0.1 incorporated more stringent VOC limits as found in ARB's 2007 statewide Suggested Control Measures (SCM).[79] However, in 2019 CARB updated the statewide SCM once again to generally align with South Coast AQMD Rule 1113.[80] The amendment lowered VOC content limits for nine coating categories, and VOC limits for three new coating categories and colorants. Consequently, the District amended Rule 67.0.1 in February 2021 to incorporate the lower VOC limits for all applicable categories. The District also incorporated a contingency measure provision pursuant to federal Clean Air Act requirements should the region fail to attain the 2008 or 2015 federal ozone standards by required federal deadlines. Amended Rule 67.0.1 will reduce VOC emissions by 82 tons per year (0.22 tons per day), with an estimated cost-effectiveness of $1.57 per pound of VOC reduced.

Architectural coatings emit VOC throughout the County

Further Control of New and Replacement Stationary Reciprocating Internal Combustion Engines
(Amended Rule 69.4.1)

Rule 69.4.1 (Stationary Reciprocating Internal Combustion Engines) applies to both gas and liquid-fueled stationary reciprocating internal combustion engines. Since initial rule adoption, other California air districts have tightened their emission limits in comparable rules, and have also been more prescriptive in the equipment subject to regulation. Furthermore, amendments were needed to ensure consistency with federal New Source Performance Standards (NSPS) IIII and state Stationary Diesel Engine Air Toxic Control Measure requirements. Consequently, the District amended Rule 69.4.1 in July 2020 to establish more stringent emission limits and incorporate other federal requirements as needed. Requirements found within previous District Rule 69.4 were also incorporated into amended Rule 69.4.1, establishing one comprehensive and simplified stationary engine rule meeting state and federal standards. As such, Rule 69.4 was repealed in July 2020 as well, as Rule 69.4 was found to be duplicative and no longer necessary. Upon full implementation, amended Rule 69.4.1 will reduce NOx emissions by 292 tons per year (0.80 tons per day) once existing units reach the end of their useful life and are replaced with new equipment, with an estimated cost-effectiveness of $5.21 per pound of NOx reduced.

Control of New Water Heaters, Small Boilers, Process Heaters, and Steam Generators between 75,000 and 600,000 BTU/hour
(Amended Rule 69.2.1)

District Rule 69.2.1 (Small Boilers, Process Heaters, and Steam Generators) is a point-of-sale rule that previously regulated water heaters and boilers between 600,000 BTU/hour and 2 million BTU/hour. Conversely, District Rule 69.5.1 regulates residential water heaters up to 75,000 BTU/hour. Consequently, this left a historical regulatory “gap” of uncontrolled units between 75,000 and 600,000 BTU/hour. At previous rule workshops, industry had requested District staff to consider NOx limits in the uncontrolled size range, to prevent such units from being purchased in San Diego County and exported to the South Coast Air Basin, where limits had been applicable. Consequently, the District amended Rule 69.2.1 in July 2020 to establish NOx limits of 20 ppm (gaseous) and 30 ppm (liquid) for new and replacement equipment between 75,000 and 600,000 BTU/hour. At the time of amendment, the revisions applied to approximately 12,300 existing units found throughout San Diego County. Upon full implementation, amended Rule 69.2.1 will reduce NOx emissions by 278 tons per year (0.76 tons per day) once existing units reach the end of their useful life and are replaced with new equipment, with an estimated cost-effectiveness of $4.72 per pound of NOx reduced.

Control of Medium Boilers, Process Heaters, and Steam Generators between 2-5 million BTU/hour
(Adopted New Rule 69.2.2)

Rule 69.2.2 now requires medium-sized boilers to be certified to comply with emission limits in San Diego County.

The 2009 and 2016 RAQS Revisions included a measure that would apply point-of-sale NOx control requirements to new medium-sized boilers, process heaters, and steam generators between 2-5 million BTU/hour. However, the measure was determined infeasible in 2012 due to poor cost-effectiveness. Since that time, several California air districts have controlled units in the same size range, and compliant units are now available at much lower costs. As such, the District re-evaluated the measure in 2019 and determined new compliant units were now readily available and cost-effective to purchase. Consequently, the District adopted new Rule 69.2.2 in July 2020, controlling NOx emissions from new units for sale with heat input ratings of 2-5 million BTU/hour. New units are now required to be certified to comply with NOx limits of 30 ppm (gaseous) and 40 ppm (liquid). The new rule does not require owners of existing units to procure District permits, though they are allowed to do so if requested. Instead, owners of such equipment are required to register and conduct annual tune-up's of new, existing, or relocated units. At the time of rule adoption, the rule applied to approximately 900 units countywide; all of which would require replacement with lower-emitting models at the end of their 20-year useful life. Upon full implementation, new Rule 69.2.2 will reduce NOx emissions by 194 tons per year (0.53 tons per day) once existing units reach the end of their useful life and are replaced with new equipment, with an average cost-effectiveness of $6.33 per pound of NOx reduced.

Further Control of Stationary Gas Turbine Engines
(Amended Rule 69.3.1)

Existing Rule 69.3.1 regulates NOx emissions from stationary gas turbine engines. These units burn fuel, typically natural gas, to produce electricity at facilities such as power plants, hospitals, and college campuses. There are approximately 36 existing units in San Diego County subject to Rule 69.3.1. In 2016, the District submitted Rule 69.3.1 for approval through the California Air Resources Board (CARB) to the U.S. Environmental Protection Agency (EPA) as part of the San Diego County portion of the State Implementation Plan (SIP) for attaining and maintaining federal air quality standards. The submittal to the EPA was necessary to demonstrate compliance with federal requirements to implement "Reasonably Available Control Technology" (RACT) for stationary gas turbine engines. The EPA identified various updates to Rule 69.3.1 that were necessary to assure federal approval of the rule. Specifically, amendments were needed to: (1) modify the applicability of the rule to apply to all gas turbine engines (both existing and

new) with a power rating of 0.3 megawatts or greater, (2) add NOx emission standards that apply during extended startups, (3) revise definitions to remove Air Pollution Control Officer discretion, (4) remove requirements specific to old peaking units, and (5) incorporate all current federal and state standards as applicable to render previous District Rule 69.3 duplicative and obsolete. As such, the District amended Rule 69.3.1 in December 2021 to incorporate these provisions, as well as repealed previous District Rule 69.3. Because the changes were primarily administrative to comply with federal requirements, the amended rule did not significantly reduce measurable NOx emissions.

ATTACHMENT H

RE-EVALUATION OF ALL FEASIBLE STATIONARY SOURCE MEASURES

The District previously adopted and continues to implement dozens of health-protective VOC and NOx emission control rules addressing all significant stationary source categories in San Diego County. Nevertheless, additional feasible control measures eventually become available as regulatory programs move forward, control technologies improve, or control costs are reduced. State law requires plan updates to include an updated schedule for expeditiously adopting feasible control measures for ozone-precursor emission sources under an air district's purview.[81] In developing an adoption and implementation schedule for a specific control measure, the District must consider the relative cost-effectiveness of the measure, and other factors including technological feasibility, total emission reduction potential, the rate of emission reduction, public acceptability, and enforceability.

To ensure that the RAQS continues to include all feasible control measures applicable to sources under the District authority, the District reevaluated the control measures listed in the 2016 RAQS Revision that have not yet been adopted. The District also reviewed adopted rules of other California air districts to determine if there are any other feasible control measures to incorporate into the RAQS in the future, and also considered measures that were required to fulfill existing state or federal requirements. As a result, the control measures found in Table H-1 are scheduled in this 2022 RAQS for further evaluation and, if warranted, development and consideration of adoption as rules during the next three years. Measures are prioritized for adoption based on a number of factors, which include but are not limited to: need to meet state/federal requirements, administrative work required for evaluation and implementation, estimated cost-effectiveness, feasibility, and possible emission reductions.

These scheduled measures will potentially reduce VOC emissions by approximately 0.04 tons per day and NOx emissions by approximately 0.59 tons per day . Estimated emission reductions are subject to refinement during the actual rule development process. A detailed discussion of each feasible control measure is presented following Table H-1.

Table H-1
Adoption Schedule for Feasible Measures

Control Measure Number	Pollutant/ Control Measure	Other District Rule Number*	Estimated Emission Reduction Potential (Tons/Day) **	Estimated Cost-Effective-ness ($/lb)**	Adoption Schedule	Year of Full Implement-ation	2022 RAQS Priority	Notes
S-1	NOx/ Control of Emissions from Landfill Flares (Proposed New Rule 69.7)	SC 1118 SJV 4311	0.04	$6-7	March 2023	2024	High	Federal Mandate (RACT)
S-2	NOx/ Further Control of Stationary Combustion Turbines (Amend Rule 69.3.1)	SC 1134 SC 429	< 0.01	To Be Determined	2023	2024	High	Federal Mandate (RACT)
S-3	NOx/ Further Control of Stationary Reciprocating Internal Combustion Engines (Amend Rule 69.4.1)	SC 1110.1 SC 1110.2 SC 429	< 0.01	To Be Determined	2023	2024	High	Federal Mandate (RACT)
S-4	NOx/ Indirect Sources (Adopt Possible New Rule)	SC 2305 SJV 9510	< 0.39	To Be Determined	2024	To Be Determined	Medium	AB 423
S-5	VOC/ Control of Emissions from Large Poultry Operations (Adopt Possible New Rule)	SJV 4570 BA 2-10 SC 223 SAC 496	< 0.01	$3	2024	2025	Medium	State Mandate (SB700)
S-6	VOC & PM/ Control of Emissions from Restaurant Cooking Operations (Adopt Possible New Rule)	SJV 4692 BA 6-2 SC 1138 VEN 74.25	0.02	$7	2024	2025	Medium	AB617 Action C3
S-7	NOx/ Further Control of Natural Gas-Fired Fan-Type Central Furnaces (Amend Rule 69.6)	SC 1111 SJV 4905	0.14	$4 - $9	2025	2050	Medium	
S-8	VOC/ Further Control of Marine Coatings (Amend Rule 67.18)	SC 1106 SC 1106.1	< 0.01	To Be Determined	2025	2026	Low	AB617 Action C3

* SC = South Coast AQMD; BA = Bay Area AQMD; SJV = San Joaquin Valley APCD; VEN = Ventura County APCD; SAC = Sacramento Metropolitan AQMD

** Estimated emission reductions, cost-effectiveness, and tentatively assigned rule numbers are subject to refinement during rule development.

Control of Emissions from Landfill Flares
(Proposed New Rule 69.7)

Flares produce NOx emissions, but they are also critical safety devices in an emergency

Flaring is a high temperature oxidation process used to burn mostly hydrocarbons of waste gases from industrial or landfill operations. Flares serve two basic functions; as an emission control device and as a safety device during unforeseeable and unpreventable emergency situations. Operators typically consider feasible alternatives to flaring because it is generally costly, and therefore avoided whenever possible. In addition, unreasonable restrictions on flaring operations can potentially result in catastrophic consequences, which can lead to explosions resulting is loss of property, injury, and potentially loss of human life. In San Diego County, flares at landfills and sewage treatment plants countywide combine to emit approximately 108 tons of NOx per year, but about two-thirds of those emissions emanate from four local landfill sources.[82]

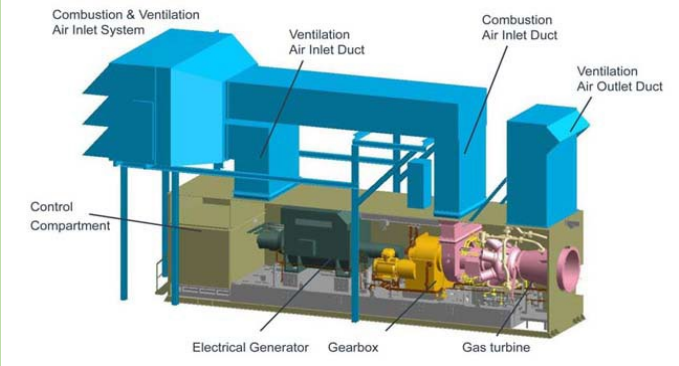
Several air districts in California have had oil and gas production and refinery flare rules for over two decades. Examples include SCAQMD Rule 1118 (Control of Emissions from Refinery Flares), SJVAPCD Rule 4311 (Flares),[83] and Santa Barbara County APCD Rule 359 (Flares and Thermal Oxidizers). San Diego County does not have any active oil/gas/refinery operations; thus, a flare rule covering such operations has been, and still is, unwarranted. More recently, in January 2019, South Coast AQMD adopted a non-refinery NOx flare rule (Rule 1118.1 – Control of Emissions from Non-Refinery Flares). Flares subject to Rule 1118.1 include flares that consume produced gas, digester gas, and landfill gas. BAAQMD is also considering a non-refinery flare rule, as enumerated in recent air quality plans.[84] Both Rule 1118.1, and the proposed BAAQMD measure, endeavor controlling non-refinery flare NOx emissions at an “ultra-low” level of 0.025 lbm/MMBtu, where feasible and cost-effective.[85] However, in most cases an achievable level of NOx control at landfills specifically is generally recognized to be 0.06 lbm/MMBtu.[86] This level of control represents an approximate 94% reduction in NOx emissions compared to uncontrolled conditions with no flares being present.

A preliminary analysis of flare technology in place at the four largest landfill facilities in San Diego County indicate some (or all) may already comply with the generally recognized NOx control level of 0.06 lbm/MMBtu, though more evaluation is needed. Because the District does not have a rule, nor a NOx limit assigned to the affected flares, emission reductions have never been credited nor claimed by the District for the technology that may already be operational today. Consequently, mandating a minimum level of NOx control at the 0.06 lbm/MMBtu level through a District rule is preliminarily envisioned, though other elements of federal regulations may also be incorporated.[87]

As such, the District has scheduled Board consideration of proposed new rule 69.7 in March 2023 to fulfill federal requirements. The proposed new landfill flare rule is anticipated to reduce NOx emissions by 14 tons per year (0.04 tons per day), with an estimated cost-effectiveness between $6 to $7 per pound of NOx reduced depending on the unit controlled. Concurrent to the proposed action, the District will also assess the feasibility and cost-effectiveness of requiring "ultra-low" NOx controls during rule development as well, though preliminary estimates suggest such controls for landfill flares may not yet be cost-effective.[88]

Further Control of Stationary Gas Turbine Engines
(Possible Amendment to Rule 69.3.1)

Existing Rule 69.3.1 regulates NOx emissions from stationary gas turbine engines. These units burn fuel, typically natural gas, to produce electricity at facilities such as power plants, hospitals, and college campuses. There are approximately 36 existing units in San Diego County subject to Rule 69.3.1. In December 2021, the District amended Rule 69.3.1 to address several administrative provisions necessary to comply with federal requirements, as well as to repeal District Rule 69.3 which was considered obsolete.



Stationary Gas Turbines are frequently used for power generation

In the late stages of rulemaking during the previous rule amendment, a memorandum was signed by the EPA Assistant Administrator (dated September 30, 2021) affecting startup, shutdown, and malfunction (SSM) requirements for stationary gas turbines and stationary reciprocating internal combustion engines.[89] The memorandum announced the return of EPA's previous 2015 policy explaining that local rule provisions that provide exemptions from air pollutant emissions limits during periods of SSM are not consistent with the federal Clean Air Act, and such provisions would generally not be approvable for inclusion in federal State Implementation Plans (SIPs). To date, the EPA has yet to formally request that the District update Rule 69.3.1 to align with the requirements of the recently reinstated 2015 SSM policy. However, in anticipation of such a request forthcoming and pursuant to future EPA guidance expected in the future, the District will evaluate the potential impacts of this recent policy revision. If requested by EPA and if it is determined that the rule's exemptions for periods of SSM are now inconsistent with the recently reinstated 2015 policy, the District will evaluate adoption of a proposed amendment to Rule 69.3.1 and, if warranted, will schedule consideration of the proposed measure with the Governing Board during the next three years. Estimated cost-effectiveness would be evaluated at the time of rule development.

Further Control of Stationary Reciprocating Internal Combustion Engines
(Possible Amendment to Rule 69.4.1)
Existing Rule 69.4.1 regulates NOx emissions from stationary reciprocating internal combustion engines. Rule 69.4.1 applies to both gas and liquid-fueled stationary reciprocating internal combustion engines. The District amended Rule 69.4.1 in July 2020 to establish more stringent emission limits and incorporate other federal requirements as needed. Requirements found in previous District Rule 69.4 were also incorporated into amended Rule 69.4.1, establishing one comprehensive and simplified stationary engine rule meeting state and federal standards. As such, Rule 69.4 was repealed in July 2020 as well, as it was found to be duplicative and no longer necessary.

On September 30, 2021, a memorandum was signed by the EPA Assistant Administrator affecting startup, shutdown, and malfunction (SSM) requirements for stationary gas turbines and stationary reciprocating internal combustion engines.[90] The memorandum announced the return of EPA's previous 2015 policy explaining that local rule provisions that provide exemptions from air pollutant emissions limits during periods of SSM are not consistent with the federal Clean Air Act, and such provisions would generally not be approvable for inclusion in federal State Implementation Plans (SIPs). To date, the EPA has yet to formally request that the District update Rule 69.4.1 to align with the requirements of the recently reinstated 2015 SSM policy. However, in anticipation of such a request forthcoming and pursuant to future EPA guidance expected in the future, the District will evaluate the potential impacts of this recent policy revision. If requested by EPA and if it is determined that the rule's exemptions for periods SSM are now inconsistent with the recently reinstated 2015 policy, the District will evaluate adoption of a proposed amendment to Rule 69.4.1 and, if warranted, will schedule consideration of the proposed measure with the Governing Board during the next three years. Estimated cost-effectiveness would be evaluated at the time of rule development.

Indirect Sources
(Possible New Rule)
As further discussed in the "Ozone Pollution and Mobile Sources" section of the 2022 RAQS and pursuant to AB 423 requirements, the District is currently engaging with stakeholders in consideration of a possible future Indirect Source Rule (ISR) that may apply to ports, warehouses, and distribution centers in San Diego County. Other air districts in California (notably SCAQMD) are also in the process (or have already adopted) ISRs in these categories, including recently adopted SCAQMD Rule 2305 affecting large warehouses and distribution centers, and proposed Rule 2304 affecting commercial marine ports. The District continues to monitor such activities for possible feasibility in the San Diego region. An informational update was presented to the Governing Board on June 9, 2022, regarding possible concepts to be further explored and evaluated in San Diego County. Given the complexity of rulemaking, the District will return to the Governing Board in 2023 for another informational update, and again in 2024 for consideration and possible adoption. Possible emission reductions and cost-effectiveness from an ISR will be further evaluated during the rule development process. However, preliminary

estimates suggest an ISR in San Diego County could reduce NOx emissions by as much as 0.39 tons per day. Pursuant to direction by the Governing Board, the District will continue evaluating a proposed ISR pursuant to requirements found in AB 423 and, if warranted, will schedule consideration of the proposed measure with the District Governing Board during the next three years.

Control of Emissions from Large Poultry Operations
(Possible New Rule)

Large poultry operations can emit high levels of VOC

Prior to 2004, large agricultural and poultry facilities were exempt from obtaining a federal air permit, also known as a Title V permit, that is implemented through state and local air districts. However, Senate Bill 700 (Florez, 2004) amended California Health and Safety Code Section 42310 (among other sections) to eliminate the exemption for certain large agricultural operations due to the amount of emissions being emitted from such facilities.[91] Thus, SB 700 harmonized state and federal permitting requirements, to recognize the contribution to the state's air pollution from agricultural operations. As a result, all agricultural sources in California that are subject to one of the scenarios listed below may now be required to obtain air quality permits through local air districts to comply with the legislation:

- An agricultural source with a potential to emit air contaminants (excluding fugitive emissions) of a magnitude that would be subject to federal Title V permits in the region (i.e., 25 tons/year of VOC or NOx in San Diego County);
- An agricultural source with actual emissions equal to or greater than one-half of the federal Title V emission threshold of the implementing local air district (excluding fugitive dust and emissions from soil amendments and fertilizers) (i.e., 12.5 tons/year of VOC or NOx in San Diego County).

The requirement applies to equipment traditionally permitted at other sources of air pollution, as well as confined animal facilities such as dairies and poultry farms. Virtually all of the agricultural sources in San Diego County are not subject to these thresholds, and will thus remain exempt from all permitting requirements. However, the District revised its federal Title V permitting threshold down to 25 tons of VOC or NOx per year to comply with federal air quality planning requirements on July 2, 2021. Based on recent inventory data, the District believes there may be one facility located within the County that may now be subject to one of the two scenarios above due to recent growth and expansion.

Several large air districts adopted rules affecting large confined animal facilities (LCAFs) in 2006 pursuant to SB700 requirements. These include SJVAPCD (Rule 4570),

BAAQMD (Rule 2-10), SCAQMD (Rule 223), and Sacramento Metropolitan AQMD (Rule 496). Because the rules were administrative in nature (i.e., requiring permits and recordkeeping), significant emission reductions were not expected, nor achieved. It was also commonplace for most poultry facilities affected to have already installed mitigation to control VOC emissions to the lowest possible level. Consequently, additional costs to comply with the new regulation were relatively low and were largely limited to the District's permitting fees. The District anticipates the same scenario may apply in San Diego County for facilities potentially affected by a future rulemaking, and would likely be cost-effective to implement.

Nonetheless, because of the changing circumstances and the possible need to comply with state law, the District will evaluate possible adoption of the proposed measure in relation to large poultry facilities and, if warranted, will schedule consideration of the proposed measure with the Governing Board during the next three years if necessary.

Control of Emissions from Restaurant Cooking Operations
(Possible New Rule)

Commercial charbroiling activities emit PM2.5 and VOC emissions that is largely uncontrolled

Restaurants typically cook meat using one of two types of commercial charbroilers: chain-driven and under-fired. Chain-driven charbroilers, most common in fast food restaurants, are semi-enclosed broilers designed to move food mechanically on a grated grill through the device as the food cooks. Food cooks quickly because chain-driven charbroilers have fuel burners located both above and below the grilling surface. Conversely, under-fired charbroilers employ a metal "grid", a heavy-duty grill similar to that of a home barbeque, that cook food largely one side at a time. Under-fired charbroilers are typically fueled by natural gas, but can also be fueled via charcoal or electric heating elements. As food cooks on either type of device, fat drippings burn on the heating elements, creating flame and smoke. The resulting smoke and vapors is primarily composed of particulate matter (i.e., PM) and water, but also includes measurable amounts of VOC.[92] Absent a secondary emission control device being installed on the charbroiling unit, such VOC is typically exhausted into the atmosphere and surrounding communities.

Several air districts in California have regulated commercial charbroilers since 2002, largely as a control measure to reduce PM in their respective areas. Examples include SJVAPCD Rule 4692 (Commercial Charbroiling), BAAQMD Rule 6-2 (Commercial Cooking Equipment), SCAQMD Rule 1138 (Control of Emissions from Restaurant Operations) and Ventura County APCD Rule 74.25 (Restaurant Cooking Operations). San Diego County has historically been in attainment with federal PM air quality standards, thus avoiding the need for additional regulatory controls. However, other air districts that have implemented such measures have also been able to reduce VOCs as

a co-benefit. Today, emission control devices are readily available that can achieve at least 83% reductions in VOC and PM. Consequently, the opportunity presents itself that San Diego County, which does not require any emission controls currently, could reduce VOC emissions from such devices if similar measures were locally adopted.

SJVAPCD Rule 4692 estimated that their rule would affect approximately 150 restaurants in their region, and combined would reduce VOC emissions by approximately 0.033 tons/day.[93] A preliminary estimate of at least 100 restaurants in San Diego County are believed to have conveyorized charbroilers.[94] If utilizing a simple ratio and the same emission factors, a similar control measure in San Diego County might expect to reduce annual VOC emissions by approximately 8 tons (or 0.02 tons per day). Cost-effectiveness of such VOC controls varies, but estimates in Ventura estimated cost-effectiveness around $14,000 per ton ($7 per pound) of VOC reduced in 2004. Estimates in San Diego County would need to be refined to reflect current costs of control devices and the number of equipment affected by such a measure. Commercial charbroiling, in total, emits about 0.4 tons of VOC per day and 0.3 tons of PM per day in San Diego County; numbers that are projected to steadily rise through 2035. As such, evaluating the feasibility of controlling emissions from charbroiling activities was identified as Action C3 in the 2021 Portside Community Emissions Reduction Plan.[95]

Taken together, the District will evaluate adoption of the proposed measure and, if warranted, will schedule consideration of the proposed measure with the Governing Board during the next three years. As part of the evaluation, the District will also evaluate whether any potential measure may also apply to microenterprise home kitchen operations; a new category of retail food operations adopted in state law in 2018 (AB626, E. Garcia).

Further Control of Natural Gas-Fired Fan-Type Central Furnaces
(Possible Amendment to Rule 69.6)

The District adopted Rule 69.6 (Natural Gas-Fired Fan-Type Central Furnaces) on June 17, 1998, establishing NOx emission limits of 40 ng/J for new residential furnaces. In 2014, SCAQMD amended their equivalent rule (Rule 1111 – Reductions of NOx Emissions from Natural-Gas-Fired, Fan-Type Central Furnaces) mandating a NOx limit of 14 ng/J on complying units, and established an optional per unit mitigation fee for noncompliant units. Because Rule 1111 was technology forcing at the time of adoption, complying units were generally not available at the time of the 2016 RAQS Revision. Thus, the District committed to monitoring the forthcoming availability of complying units to evaluate whether a proposed amendment to Rule 69.6 would be necessary.

Since the last analysis, SCAQMD Rule 1111 had undergone several revisions in relation to the availability of compliant and noncompliant units. These included the introduction of increased mitigation fees for manufacturers of noncompliant units, establishing a voluntary incentive program (i.e., “Clean*air* Furnace Rebate Program”) to encourage adoption of complying units in the South Coast air basin, and time extensions for manufacturers of unique furnace applications to develop compliant units. As of 2018, over

90 units were certified by SCAQMD to now meet the 14 ng/J limit; a number that has significantly increased four years later. In 2021, SCAQMD sunset compliance mitigation fees for all furnace categories in Rule 1111 except mobile home furnaces, which were extended to September 2023 to allow manufacturers to continue developing compliant units. As a result, SCAQMD anticipates there will be units complying with the 14 ng/J limit for all furnace categories by the end of 2023.

In 2009 (prior to any such devices being developed), SCAQMD estimated a cost-effectiveness between $4.30 and $9.50 for switching to a 14 ng/J limit furnace. Given the proliferation of compliant units since that time, the District now anticipates a proposed amendment to Rule 69.6 to incorporate the 14 ng/J limit could now be cost-effective to achieve. Preliminary estimates for annual emission reductions in San Diego County, if similar controls are found to be feasible and cost-effective, are approximately 53 tons per year (0.14 tons per day), about a 65% reduction in NOx emissions. Full implementation would be expected 25 years after rule adoption, considering an existing unit's useful of 25 years. As such, the District will evaluate adoption of the proposed measure and, if warranted, will schedule consideration of the proposed measure with the Governing Board during the next three years.

Further Control of Marine Coatings
(Possible Amendment to Rule 67.18)
District Rule 67.18 (Marine Coating Operations) sets VOC limits for primers, coatings, topcoats, and sealers used in the coating of marine and fresh water vessels, oil drilling platforms, navigational aids, and structures intended for exposure to a marine environment. Limits vary depending on the material, but range between 275 and 700 grams of VOC per liter of coating. These limits generally align with other air districts' standards. The rule was last amended on May 15, 1996.

The District determined in the 2016 RAQS Revision that an amendment was a low priority due to the minimal emission reduction potential. However, as part of the 2021 Portside Community Emissions Reduction Plan, Action C3 committed the District to re-evaluating the source categories for potential emission reductions, given that the majority of marine coating activity occurs in an under-resourced community (Portside Community). Additional evaluation was also conducted to ensure existing VOC content limits, control efficiency, and transfer efficiency aligned with other air districts in California, as well as to align to federal Control Technique Guidelines for Miscellaneous Metal and Plastic Parts Coatings.

The initial assessment determined four product categories (high gloss, high temp, PC high gloss, and solvent cleaning materials) could potentially achieve lower limits than what existing Rule 67.18 currently contains. That said, because these limits potentially affect coatings that fall under military specifications, modifying such limits could be difficult to achieve in practice. The current rule's control device capture and control efficiency could also potentially increase from 85 to 90% to align with other air district rules (SJVAPCD). Additionally, the possible inclusion of an application transfer efficiency

requirement (i.e., High Volume Low Pressure (HVLP) spray gun or equivalent) was possible, as existing Rule 67.18 does not currently contain any emission limit for such activity. Though no limits are currently found in the rule for control or transfer efficiency, the District believe most facilities already utilize equipment that would comply if such limits were included. Thus, any potential emission reductions from amending Rule 67.18 would be solely attributable to lowering any applicable product VOC limits.

Nonetheless, because the action was included in the recent Portside CERP and the possible need to ensure the rule meets federal requirements in the future, the District will evaluate adoption of the proposed measure and, if warranted, will schedule consideration of the proposed measure with the Governing Board during the next three years.

ATTACHMENT I

FURTHER STUDY MEASURES

CARB requires air districts to compare their respective rules and plans for rulemaking to the most stringent corresponding rule among California air districts. Control measures for which cost-effective emission reduction potential have already been determined are addressed in Attachment H (Re-Evaluation of All Feasible Stationary Source Measures). However, additional measures require a more-detailed analysis and more time to assess a number of factors, including the number and nature of the affected sources, estimated emissions and emission reduction potential, technological feasibility, and cost-effectiveness.

At this time, the VOC and NOx measures identified in Table I-1 require a more detailed analysis and more time to assess potential adoption/implementation in San Diego County. These measures are classified as “further study measures” and will be evaluated during the next three years by District staff. If any of the further study measures are determined as possibly being feasible and cost-effective to implement in San Diego County, they will be scheduled for potential adoption in the next subsequent RAQS Revision. A screening will be conducted to determine if these possible measures merit further evaluation and priority status for San Diego County. District resources permitting, rule development would be pursued prior to that time if resulting emission reductions would be significant.

(continued on next page)

Table I-1
Possible Further Study Measures to be Evaluated Between 2023-2026

Control Measure Number	Pollutant/ Control Measure	Other District Rule Number*	Potential Evaluation Schedule	Notes
FS-1	VOC/ Control of Emissions from Composting Operations (Non-Residential) (Possible New Rule)	SC 1133 SC 1133.1 SC 1133.2 SC 1133.3 SJV 4565 SJV 4566	2023	
FS-2	VOC & PM/ Further Control of Emissions from Wood-Burning Activities (Possible New Rule)	SC 445 SJV 4901	2023	
FS-3	VOC/ Further Control of Receiving and Storing VOC at Bulk Plants and Bulk Terminals (Possible Amendment to Rule 61.1)	SC 1178	2023	AB617 Action C3
FS-4	NOx/ Control of Emissions from Miscellaneous NOx Sources (Possible New Rule)	SC 1147 SC 1153.1 SJV 4309 SAC 419	2024	
FS-5	VOC/ Control of Emissions from Metalworking Fluids & Direct-Contact Lubricants (Possible New Rule)	SC 1144 VEN 74.31	2024	
FS-6	VOC & NOx/ State Emission Offset Permitting Rule(s) (Possible New Rule(s))	N/A	2024	CARB EO# G-97-007-2
FS-7	NOx/ Zero-Emission Residential Water Heaters (Possible Amendment to Rule 69.5.1 or New Rule)	N/A	2025	
FS-8	VOC/ Further Control of Adhesive Materials Application Operations (Possible Amendment to Rule 67.21)	SC 1168	2025	
FS-9	VOC/ Control of Emissions from Vacuum Truck Operations (Possible New Rule)	SC 1149 BA 8-53	2025	
FS-10	NOx/ Zero-Emission Central Furnaces (Possible Amendment to Rule 69.6 or New Rule)	N/A	2026	
FS-11	VOC/ Further Control of Metal Parts and Products Coating Operations (Possible Amendment to Rule 67.3)	N/A	2026	
FS-12	VOC/ Further Control of Aerospace Coatings (Possible Amendment to Rule 67.9)	SC 1124 SC 4605	2026	
FS-13	VOC/ Further Control of Miscellaneous Surface Coating Operations and Other Processes Emitting VOC (Possible Amendment to Rule 66.1)	SC 1145 SAC 468	2026	
FS-14	Alternative Approaches to Reducing Criteria Pollutants and GHGs within District's Regulatory Authority	N/A	2023-2026	

* SC = South Coast AQMD; BA = Bay Area AQMD; SJV = San Joaquin Valley APCD; VEN = Ventura County APCD; SAC = Sacramento Metropolitan AQMD

Control of Emissions from Composting Operations (Non-Residential)

Composting produces VOC through decomposition of organic material

Currently, the District does not specifically regulate emissions from composting operations. However, these operations emit VOC through decomposition of organic materials (such as green and wood waste, animal manure, and food waste) during chipping/grinding, stockpiling, and composting activities. Moreover composting activities are expected to increase in response to federal, state, and local mandates for waste diversion and waste reduction. Accordingly, the District has been (and continues to) evaluate whether a measure to control VOC emissions from these sources is necessary/feasible. Controls have been developed through other air district composting rules.[96] However, these rules were developed prior to statewide legislation in 2016 mandating waste agencies divert organic waste from California landfills.[97] Other public agencies within California (including the California Department of Resources Recycling and Recovery and solid waste local enforcement agencies) are engaged in or have adopted regulations affecting composting activities to address other environmental objectives. State requirements in effect now require substantial diversion of organic waste from landfills, which enhances the need for facilities that can handle compost.

While more material is anticipated to be composted, the regulatory environment to control the material has substantially matured since the District initially identified this as a potential measure in the 2016 RAQS. Consequently, it is now unclear whether a District rule, that potentially would be duplicative to existing statewide/local regulations, would provide any quantitative benefit for the region and/or the facilities that might be subject to such a rule. In other words, if facilities are already adhering to emission control techniques through existing regulations, there may be no need for a District rule to be adopted, which would otherwise further burden an already impacted industry. As a result of the dynamic regulatory environment, the District will continue to evaluate the proposed measure, and if warranted, will schedule the possible measure for consideration/adoption in a subsequent RAQS Revision. District resources permitting, rule development may be pursued before then if resulting emission reductions would be significant.

Further Control of Emissions from Wood-Burning Activities

Woodstoves and fireplaces are found throughout San Diego County. The District has limited prohibitions in place to control outdoor residential open burning. However, the District does not have any controls in place to control residential indoor burning using wood burning devices, such as woodstoves and fireplaces. Wood burning for aesthetic and heating use is albeit limited in Southern California due to moderate weather conditions. But due to the large number of sources and their locations inside and adjacent to residential areas, the emissions and odors such devices create are not insignificant.

Wood burning devices are primarily a source of PM when woody material is burned. However, the combustion of wood also generates significant amounts of VOC,[98] which is a precursor to ozone. Combined, woodstoves and fireplaces in San Diego County emit approximately 167 tons per year of VOC (0.45 tons per day), an amount that is expected to remain constant through 2050. San Diego County has been designated as an attainment area for national PM standards for decades. Consequently, the control of emissions from woodstoves and fireplaces has not been prioritized to date. However, federal PM standards are anticipated to be decreased in the near future, which may necessitate the need for the District to explore additional opportunities for PM reduction. At the same time, the region must continue to strive to meet ozone standards at the state and federal level. Thus, the ability to control PM and VOC emissions from wood burning devices is now more significant than it has been historically.

Infographic describing San Joaquin Valley APCD's Residential Wood Burning Rule 4901

Other air districts in California that have PM nonattainment issues have regulated wood burning device activity for decades. Such examples include SCAQMD Rule 445 (Wood-Burning Devices) adopted in 2008, and SJVAPCD Rule 4901 (Wood Burning Fireplaces and Wood Burning Heaters) adopted in 1993. Among other requirements, these rules generally include point-of-sale requirements that a cleaner (or EPA-certified) device be installed in existing or new developments where a permanent indoor/outdoor wood burning device is installed. Examples include an EPA Phase II-certified fireplace insert, a pellet-fueled wood burning heater, masonry heaters, or dedicated gaseous-fueled devices. Such rules also prohibit burning of non-fuel sources (i.e., trash) in the device, and require commercial firewood establishments to only sell "seasoned" (i.e., low moisture content) firewood for most of the year. The rules also establish regionwide wood burning curtailment programs (i.e., "no burn days") on days when forecasted high PM pollution is anticipated, typically during the winter.

When SCAQMD Rule 445 was adopted in 2008, staff estimated that within six years of adoption, the measure would reduce regionwide VOC by 0.39 tons/day, NOx by 0.06 tons/day, and PM2.5 by 0.89 tons/day. Equating possible reductions that could be anticipated in San Diego County using a population-based ratio, the region could expect possible VOC reductions of 0.08 tons/day, 0.01 tons/day of NOx, and 0.17 tons/day of PM2.5, if a similar measure were adopted in San Diego County. Cost-effectiveness was estimated between $5 and $9 per ton of emissions reduced. Consequently, the District will continue to evaluate the proposed measure, and if warranted, will schedule the possible measure for consideration/adoption in a subsequent RAQS Revision. District resources permitting, rule development may be pursued before then if resulting emission reductions would be significant.

Further Control of Receiving and Storing Volatile Organic Compounds at Bulk Plants and Bulk Terminals

This source category is regulated by District Rule 61.1 (Receiving and Storing Volatile Organic Compounds at Bulk Plants and Bulk Terminals), which is applicable to large storage tanks for gasoline and other high volatility motor vehicle fuels. In past RAQS Revisions, the District eliminated various Rule 61.1 amendments from further consideration/evaluation due to limited emission reduction potential. These included amendments to avoid equipment leaks (2009 and 2016 RAQS Revisions) as well as requiring control technology to align with South Coast AQMD Rule 1178 (Further Reductions of VOC Emissions from Storage Tanks at Petroleum Facilities) (2004 and 2009 RAQS).

Fuel Storage tanks, like the one pictured, store thousands of gallons of liquids containing high levels of VOC

However, recent state law has placed renewed emphasis on reducing emissions in under-resourced communities that are especially burdened by air pollution. Two of the three facilities in San Diego County that are subject to Rule 61.1 are located within one of these communities, heightening the need for additional emission reductions where feasible and cost-effective. While Rule 61.1 is currently in compliance with all state and federal regulations, the District plans to re-evaluate it once again not only for potential VOC emission reduction opportunities, but also to clarify and amend old or ambiguous language found within the rule itself. This includes further clarifying the control technology requirements for tank degassing operations, as well as clarifying the administrative process and timing of such operations during and outside peak ozone season (i.e., May through October).

Past estimates of emission reduction potential from possible adoption of the two previously eliminated measures (equipment leaks and further controls) were around 0.03 tons of VOC per day combined. However, a new analysis is needed to determine if this estimate is still valid, and to determine whether any additional control technology or operations could be incorporated into the rule. Consequently, the District will continue to evaluate the proposed measure, and if warranted, will schedule the possible measure for consideration/adoption in a subsequent RAQS Revision. District resources permitting, rule development may be pursued before then if resulting emission reductions would be significant.

Control of Emissions form Miscellaneous NOx Sources

The District already regulates emissions from a variety of large NOx sources, such as boilers, power plants, and stationary engines. However, a number of smaller gaseous and liquid-fueled combustion equipment used in various industrial, commercial, and institutional facilities, are not required to upgrade to the cleanest technology available. These include, but are not limited to, ovens, dryers, dehydrators, kilns, incinerators,

asphalt plants, cookers, roasters, and fryers. Since 2005, other California air districts have adopted (and since amended) rules requiring the use of low-NOx burners for such equipment, including SCAQMD (Rule 1147-NOx Reductions from Miscellaneous Sources, and Rule 1153.1-Emissions of Oxides of Nitrogen from Commercial Food Ovens), SJVAPCD (Rule 4309-Dryers, Dehydrators, and Ovens), and most recently, Sacramento Metropolitan Air Quality Management District (Sac Metro AQMD) (Rule 419-NOx from Miscellaneous Combustion Units).

Such rules vary in regards to their method of implementation and compliance demonstration. Some rules require source-testing, while others provide options for vendors to certify equipment to air district standards/protocol (i.e., point-of-sale). As part of its evaluation, the District will assess all methods of possible implementation and compliance demonstration. Sacramento Metropolitan AQMD estimated a reduction of 5.6 tons of NOx per year (0.015 tons per day) from 19 permitted units subject to Rule 419, with cost-effectiveness estimated at $7.66 per pound of NOx reduced. Preliminary estimates for annual emission reductions and cost-effectiveness in San Diego County, if similar controls are found to be feasible, are anticipated to be comparable to Sacramento estimates, given the similarities in population size and industries affected. Consequently, the District will continue to evaluate the proposed measure, and if warranted, will schedule the possible measure for consideration/adoption in a subsequent RAQS Revision. District resources permitting, rule development may be pursued before then if resulting emission reductions would be significant.

Control of Emissions from Metalworking Fluids and Direct-Contact Lubricants

Metalworking fluids are used to reduce heat and friction, as well as to remove metal particles during industrial machining and grinding operations. A variety of fluids are used during these processes, including vanishing oils, lubricants, and rust inhibitors. Products vary in their formulations, including straight oils (such as petroleum-based oils) and water/vegetable-based fluids. Operations that typically use such fluids include steel tube and spring manufacturers, aerospace manufacturers, and automobile parts manufacturers and rebuilders. Fluids and lubricants are also used frequently by machine shops for broaching, drilling, drawing, heading, honing, forging, milling, stamping, tapping, threading, and turning.

Reducing VOC emissions from metalworking fluids and direct-contact lubricants is a measure that will be evaluated during the next three years

Until a decade ago, air pollution controls in the metalworking industry focused primarily on the reduction of PM. However, a SCAQMD study conducted in 2006 determined such fluids were a larger source of VOC than what was previously thought. Consequently, in 2009, SCAQMD adopted Rule 1144 (Metalworking Fluids and Direct-Contact Lubricants), which established a sales prohibition of noncompliant fluids by manufacturers and

suppliers. Four years later, VCAPCD adopted Rule 74.31 (Metalworking Fluids and Direct-Contact Lubricants), mirroring the requirements set forth in SCAQMD Rule 1144, and was supported by the local trade association.[99]

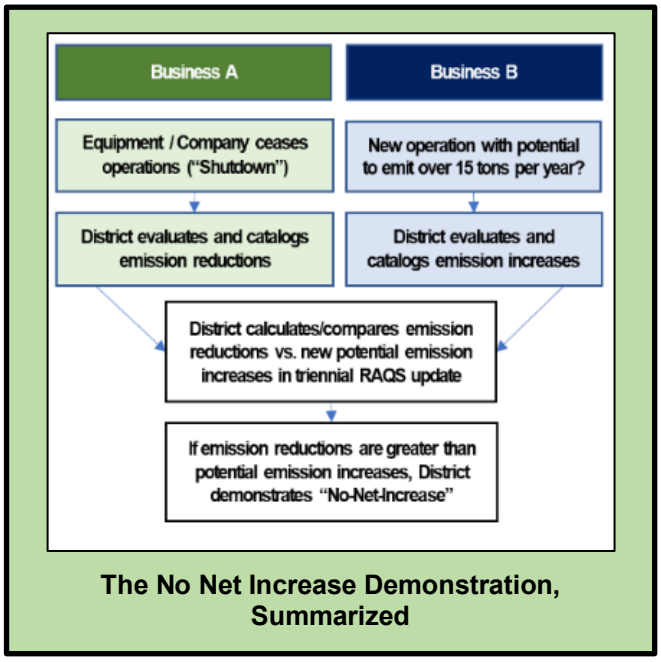
At the time of Rule 1144's initial adoption in 2009, establishing limits only for vanishing oils and rust inhibitors, SCAQMD conservatively estimated cost-effectiveness at $8,189 per ton of VOC emissions reduced ($4 per pound). An amendment to Rule 1144 completed in 2010 established lower limits on other metalworking fluids and lubricants, with an estimated cost-effectiveness at $796 per ton of VOC reduced ($0.40 per pound). Total emission reductions estimated from both the initial and amended versions of Rule 1144, were estimated to reduce VOC's by approximately 1,300 tons of VOC per year (3.5 tons per day). VCAPCD estimated reductions in their region of up to 41 tons of VOC per year (0.1 tons per day). If a similar measure were adopted in San Diego County, possible emission reductions would more likely resemble Ventura County's estimates.

The current extent of metalworking fluid and direct-contact lubricant use in San Diego County is unknown. It is possible that lower-VOC content liquids and lubricants are already being sold through local distributors and retail establishments, as product distribution channels typically apply to Southern California at large. Thus, SCAQMD and VCAPCD compliant products may already be available and in-use by local businesses. However, because no limit applies in San Diego County, manufacturers have no incentive or requirement to sell lower-VOC content products, despite the relatively low cost difference between high and low VOC content products. Consequently, the District will continue to evaluate the proposed measure, and if warranted, will schedule the possible measure for consideration/adoption in a subsequent RAQS Revision. District resources permitting, rule development may be pursued before then if resulting emission reductions would be significant.

State Emission Offset Permitting Rule(s)

The EPA requires regions to ensure new sources of air pollution do not contribute to worsening air quality. Thus, for federal purposes, the District implements an existing offset program that triggers when a new/modified business has the potential to emit 25 tons or more per year of NOx or VOC; consistent with the region's federal major source threshold. Emission offsets occur when a new or expanding business (Business B) financially compensates another business (Business A) that may possess validated emission reduction credits. Emission reduction credits are created by stationary sources that elect to install more stringent emission controls than required by regulation for existing equipment, or voluntarily ceasing operations (i.e., shutdowns).

Prior to 1998, the District had a more stringent emission offset requirement within the District's New Source Review rules (i.e., Rules 20.1 through 20.4) that satisfied state requirements. At the time, businesses that had the potential to emit 15 tons or more per year of VOC or NOx were subject to the rules. However, the more stringent provisions rarely resulted in actual emission reductions stemming from changing business practices. Consequently, the more stringent state offset requirements were repealed from Rules



The No Net Increase Demonstration, Summarized

20.1 through 20.4 in 1998 in favor of a No Net Increase Demonstration analysis (Attachment L - Emission Offsets (No Net Increase (NNI) Demonstration)) prepared pursuant to CARB requirements.[100] These requirements include tracking emission increases associated with applicable permitting actions that would have triggered state offset requirements, and demonstrating within each RAQS Revision (via Governing Board Resolution) that the program's repeal would not halt or reverse the trends of decreasing regionwide emissions. San Diego County is now the only air district in California that conducts such an analysis. Other air districts have instead opted to adopt more stringent state offset requirements. CARB has indicated that, outside of reinstituting a state emission offset permitting program, there are no opportunities at this time to streamline existing No Net Increase Demonstration requirements.

Administrative costs to setup and implement a more stringent state emission offset permitting program in San Diego County are expected to be high. Such a program would require approximately 540 hours for rule development activity/outreach, up to 1,200 hours per year for Engineering to administer, and up to 18 months to setup. Additionally, higher costs would be borne to prospective businesses looking to grow or move operations into San Diego County. For example, the cost of acquiring a credit for 1 ton of NOx reductions on the open market today is approximately $90,000. Consequently, a new small business proposing to emit 15 tons of NOx per year could be required to pay upwards of $1.5 million in credits to comply with more stringent offsetting requirements.

Historically, equipment shutdowns in San Diego County were ubiquitous, making a No Net Increase Demonstration feasible and possible. However, in recent years there has been a steady decline in shutdowns; a trend that is expected to continue in future years. This dynamic could jeopardize the District's ability to continue preparing the Demonstration in a future RAQS Revision pursuant to CARB requirements, which could lead to reinstituting more stringent state emission offsets in the future. Though CARB requirements for San Diego County's No Net Increase Demonstration are more onerous than what California Health and Safety Code requires, and administrative costs are high, the District nonetheless prepared a No Net Increase Demonstration for the 2022 RAQS to satisfy state requirements. Doing so avoided further delays in the mandatory RAQS

Revision submission to CARB, and allows for the advancement of proposed emission reduction measures that the 2022 RAQS contains.

However, in consideration of possible challenges associated with its future preparation, the 2022 RAQS also includes a further study measure to evaluate a possible future state emission offset permitting measure, and if warranted, will schedule the possible measure for consideration/adoption in a subsequent RAQS Revision. The study measure will concurrently evaluate opportunities to both streamline existing administrative burdens with CARB, and/or evaluate the future development of a more stringent state emission offset permitting program rule. District resources permitting, rule development may be pursued before then if resulting emission reductions would be significant, or adoption of the rule is necessary to satisfy state requirements.

Zero-Emission Residential Water Heaters

Typical residential water heaters combust natural gas, which emit NOx into the air. District Rule 69.5.1 regulates NOx emissions from such units with a rated heat input capacity of less than 75,000 British Thermal Units (BTU) per hour. The rule is a "point-of-sale" rule that applies when an existing natural gas-fired water heater reaches the end of its useful life and is replaced, or when any new unit is installed. The rule prohibits the manufacture, sale, offer for sale, or installation within San Diego County of any new unit that does not comply with the specified emission standards. Since July 2016, Rule 69.5.1 has required that any new residential natural-gas fired water heater installed shall not emit more than 10 nanograms of NOx per joule of heat output, and any new mobile home water heater operating on natural gas shall not emit more than 40 nanograms of NOx per joule of heat output.

Zero-emission technology has significantly progressed in this sector. For example, in 2020, CARB directed staff (via Resolution 20-32) to support 100% electrification of natural gas appliances that would reduce GHGs from residential buildings. Those appliances include stoves, ovens, furnaces, space heaters, and water heaters. Subsequently, in August 2021,[101] the California Energy Commission updated the Energy Code and adopted the following requirements: (1) zero-emission heat pumps for water and space heating in new homes, (2) new homes to be made "electric-ready" for various types of electric appliances, and (3) the same standards to "substantial upgrades" being done at existing homes and businesses. As such, any building permit applications applied for on or after January 1, 2023, will be required to comply with the new zero-emission standards for new construction and/or substantial upgrades. Notably, the updates do not address simple water heater replacements in existing homes when they reach the end of their useful life.

In CARB's 2022 State SIP Strategy,[102] CARB proposed to develop a statewide rule in the 2025 timeframe to enact zero-emission standards for space and water heaters by 2030 using its regulatory authority for GHG reductions (as well as criteria pollutant benefits). As envisioned, CARB would not mandate retrofits in existing buildings in a certain timeframe. However, the proposed statewide rule could require 100% of new space and

water heaters in new construction, and/or replacements in existing buildings, to meet a zero-emission standard in the future. Consequently, if adopted, a CARB rule would likely encroach upon existing NOx emission limits found in existing District Rule 69.5.1 in San Diego County, and other similar rules in other California air districts.

The possible incorporation of zero-emission standards for all new/existing water heaters has the potential to reduce NOx emissions by at least 149 tons per year (0.4 tons per day), if such limits were determined to be feasible, cost-effective, and adopted. As a result, the District will continue to evaluate the proposed measure, and if warranted, will schedule the possible measure for consideration/adoption in a subsequent RAQS Revision. District resources permitting, rule development may be pursued before then if resulting emission reductions would be significant.

Further Control of Adhesive Materials Application Operations

District Rule 67.21 (Adhesive Materials Application Operations) regulates VOC emissions from the use of adhesives and sealants. VOC limits found in Rule 67.21 are generally similar to the comparable adhesive rule found at San Joaquin Valley APCD (SJVAPCD) Rule 4653 (Adhesives and Sealants). In 2017, South Coast AQMD amended their adhesive Rule 1168 (Adhesive and Sealant Applications) and reduced VOC contents for a variety of products, including certain flooring adhesives, plastic welding products, and various types of sealants. Other Southern California air districts soon followed with similar rule amendments, due in part to adhesive suppliers providing all of Southern California with the same products.

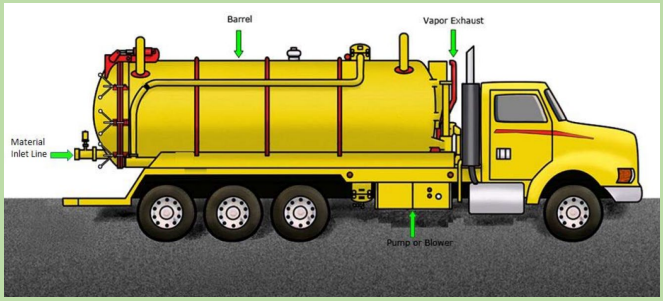
Adhesive emissions are controlled by CARB and local air districts

The possible incorporation of more stringent VOC limits in San Diego County for the identified product categories are estimated they could reduce emissions by less than 36 tons per year (< 0.1 tons per day), if such limits were determined to be feasible, cost-effective, and adopted. As a result, the District will continue to evaluate the proposed measure, and if warranted, will schedule the possible measure for consideration/adoption in a subsequent RAQS Revision. District resources permitting, rule development may be pursued before then if resulting emission reductions would be significant.

Control of Emissions from Vacuum Truck Operations

A vacuum truck is an industrial vacuum on wheels used to collect materials, primarily liquids and semi-solids, and transfer them to another location. Vacuum trucks are widely used to remove trash from parking lots, clean out sewers and water mains for maintenance work, and remove waste from septic tanks and portable toilets. However, if

the materials transferred contain petroleum, petroleum products, or other hydrocarbon liquids, vacuum truck operations have potential to release VOC into the ambient atmosphere. Emissions typically come from materials containing hydrocarbons contained in sludge, recovered oil, slop oil, crude oil, gasoline, petroleum distillates, feed stock, blending stock, water used to clean tanks and vessels, wastewater, and various mixtures and slurries. The District does not currently have a rule controlling emissions from vacuum trucks. Regulatory authority to control emissions of the propulsion engine unit of the truck lies with CARB. However, emissions emanating from a non-vehicular source such as the tank affixed to the vacuum truck (and/or upon its connection to a stationary source like a storage tank), are within the regulatory authority of the local air district.



Emissions from vacuum truck tanks are largely uncontrolled in San Diego County

At least two air districts in California have adopted or amended regulations to control VOC emissions from vacuum truck operations, including SCAQMD Rule 1149 (Storage Tank and Pipeline Cleaning and Degassing) and BAAQMD Rule 8-53 (Vacuum Truck Operations). Both rules require facilities to use vacuum trucks equipped with on-board emission controls or by coupling emission control technology to an uncontrolled truck. Carbon adsorption systems (either on-board or portable) are the most typical emission control systems utilized. Though vacuum trucks are used in a wide variety of applications, the rules are only applicable to industries that transport volatile organic liquids, such as refineries, bulk plants, bulk terminals, marine terminals, and organic liquid pipeline facilities. Rule 8-53 estimated VOC emissions could be reduced by up to 1.05 tons per day (or 85% of vacuum truck emissions) at the time of rule adoption in 2012. Cost-effectiveness was also estimated between $2,500 and $3,100 per ton reduced.

Preliminary estimates for annual emission reductions and cost-effectiveness in San Diego County are not available, but are likely to be lower than what was anticipated in the Bay Area. San Diego County has far fewer bulk liquid terminals and no petroleum refineries in the region. However, the region does have numerous fueling depots (on-road and marine) where such vacuum truck activity could still be occurring. Thus, the District will continue to evaluate the proposed measure, and if warranted, will schedule the possible measure for consideration/adoption in a subsequent RAQS Revision. District resources permitting, rule development may be pursued before then if resulting emission reductions would be significant.

Zero-Emission Central Furnaces

Typical fan-type central furnaces combust natural gas, which then emit NOx into the air. District Rule 69.6 has regulated NOx emissions from natural gas-fired, fan-type central

furnaces since 1998, establishing a NOx emission limit of 40 ng/J for the purchase/installation of any new residential furnace. The rule is a "point-of-sale" rule that applies when an existing natural gas-fired, fan-type central furnace reaches the end of its useful life and is replaced, or when any new unit is installed. The rule prohibits the manufacture, sale, offer for sale, or installation within San Diego County of any new unit that does not comply with the specified emission standard. As discussed in Attachment H (Re-Evaluation of All Feasible Stationary Source Measures), other air districts in California have recently lowered respective NOx standards to 14 ng/J, which may now potentially be cost-effective to implement in San Diego County. As such, the District has scheduled consideration of a possible proposed amendment to Rule 69.6 within the next three years to possibly lower the existing NOx limit.

However, zero-emission technology has significantly progressed in this sector. For example, in 2020, CARB directed staff (via Resolution 20-32) to support 100% electrification of natural gas appliances that would reduce GHGs from residential buildings. Those appliances include stoves, ovens, furnaces, space heaters (i.e., central furnaces), and water heaters. Subsequently, in August 2021,[103] the California Energy Commission updated the Energy Code and adopted the following requirements: (1) zero-emission heat pumps for water and space heating (i.e., central furnaces) in new homes, (2) new homes to be made "electric-ready" for various types of electric appliances, and (3) the same standards to "substantial upgrades" being done at existing homes and businesses. As such, any building permit applications applied for on or after January 1, 2023, will now be required to comply with the new zero-emission standards for new construction and/or substantial upgrades. Notably, the updates do not address simple fan-type central furnace replacements in existing homes when they reach the end of their useful life.

In CARB's 2022 State SIP Strategy,[104] CARB proposed to develop a statewide rule in the 2025 timeframe to enact zero-emission standards for space heaters (i.e., central furnaces) and water heaters by 2030 using its regulatory authority for GHG reductions (as well as criteria pollutant benefits). As envisioned, CARB would not mandate retrofits in existing buildings in a certain timeframe. However, the proposed statewide rule could require 100% of new space heaters (i.e., central furnaces) and water heaters in new construction, and/or replacements in existing buildings, to meet a zero-emission standard in the future. Consequently, if adopted, a CARB rule would likely encroach upon existing NOx emission limits found in existing/amended District Rule 69.6 in San Diego County, and other similar rules in other California air districts.

The possible incorporation of zero-emission standards for all new/existing fan-type central furnaces has the potential to reduce NOx emissions by at least 112 tons per year (0.3 tons per day), if such limits were determined to be feasible, cost-effective, and adopted. As a result, the District will continue to evaluate the proposed measure, and if warranted, will schedule the possible measure for consideration/adoption in a subsequent RAQS Revision. District resources permitting, rule development may be pursued before then if resulting emission reductions would be significant.

Further Control of Metal Parts and Products Coating Operations

District Rule 67.3 (Metal Parts and Products Coating Operations) controls VOC emissions for the source category by limiting the VOC content of paints and cleaning solvents and specifies methods to minimize VOC emissions during equipment cleaning operations. VOC is emitted from the application and curing of metal part and product coatings, mainly from surface preparation materials and from cleaning of coating equipment. Rule 67.3 also requires the use of high-transfer efficiency application equipment.

One specialty coating limit found in Rule 67.3 (chemical agent resistant coatings or CARC) has a VOC limit that exceeds federal Control Technique Guideline requirements. Rule 67.3 requires CARC to not exceed 420 grams of VOC per liter when air-dried, or 420 grams of VOC per liter when baked. Limits for CARC are not specified directly in applicable federal guidelines; thus, it can be construed that CARC limits already adhere to the "general" coating limit of 340 grams of VOC per liter (air-dried) or 280 grams of VOC per liter when baked. There is limited use of CARC in San Diego County that produces a negligible impact to total countywide VOC emissions.

Nonetheless, the category limit could be reduced further. The emission reduction potential of lowering the VOC limit for CARC is about 0.003 tons of VOC per day. Nonetheless, the District will continue to evaluate the proposed measure, and if warranted, will schedule the possible measure for consideration/adoption in a subsequent RAQS Revision. District resources permitting, rule development may be pursued before then if resulting emission reductions would be significant.

Further Control of Aerospace Coatings

Emissions in this source category have greatly declined in San Diego County since 1990 due to three factors: the implementation of District Rule 67.9 (Aerospace Coating Operations), the decline in government funding for aerospace operations and, in particular, the closing of one large facility. The District determined in the 2016 RAQS Revision that an amendment to Rule 67.9 was a low priority to determine if emission limits required updating to meet federal requirements.

At the time, the District conducted a reassessment to determine if a rule revision was warranted. The reassessment concluded that existing Rule 67.9 already meets all federal requirements, and thus doesn't require amending for federal purposes during the timeframe identified in the 2016 RAQS Revision. Furthermore, almost all of the regulated product categories found in Rule 67.9 were found to be as stringent as comparable air district rules, with minor exceptions found in certain categories found in SCAQMD Rule 1124 (Aerospace Assembly and Component Manufacturing Operations). These include adhesive bonding primers, antichafe coatings, dry lubricative materials (nonfastener), form release coatings, fuel tank coatings, paint strippers, and sealants. However, the District expects that even if the product categories were updated, estimated VOC emission reductions from the amendment would be low at less than two tons per year (0.005 tons per day).

Consequently, due to the limited emission reduction potential, unnecessary need to revise the rule to meet federal requirements, and the administrative burden of a rulemaking in light of higher priority rulemaking, the District deprioritized this proposed control measure from the RAQS measure adoption schedule. Nonetheless, the District will continue to evaluate the proposed measure, and if warranted, will schedule the possible measure for consideration/adoption in a subsequent RAQS Revision. District resources permitting, rule development may be pursued before then if resulting emission reductions would be significant.

Further Control of Miscellaneous Surface Coating Operations and Other Processes Emitting Volatiles Organic Compounds

Solvent cleaning and surface coating operations that are not covered by source-specific rules are regulated under Rule 66.1 (Miscellaneous Surface Coating Operations and Other Processes Emitting Volatile Organic Compounds), last amended on May 11, 2016. It has been historically used as a "catch-all" regulation for a variety of industrial operations, including but not limited to plastic, glass, and rubber coating operations. Consequently, the rule did not enumerate specific product category VOC limits, as is typically done with other District prohibitory rules. Instead, the facility is deemed to be in compliance with the rule as long as it satisfies one of three criteria: (1) VOC emissions from such operations are less than five tons per calendar year (excluding emissions from cleaning operations); (2) VOC emissions are reduced by air pollution control equipment; or (3) surface coating operations are conducted using air dried coating with VOC content less than or equal to 420 grams per liter, or baked coating with VOC content less than or equal to 360 grams liter. While some facilities comply with the second and third options listed above, a number of facilities simply utilize the "less than five tons per year of surface coating/cleaning" option above, allowing them to use whatever product they desire.

Facilities countywide use a variety of solvents for cleaning and degreasing

Conversely, other large air districts in California have taken a more prescriptive approach to achieve additional emission reductions by instead limiting emissions at the product category level. Examples include South Coast AQMD Rule 1145 (Plastic, Rubber, Leather, and Glass Coatings, amended December 4, 2009) and Sacramento Metropolitan AQMD Rule 468 (Surface Coating of Plastic Parts and Products, adopted March 22, 2018). If such an approach was adopted by the District in the future, it could result in additional VOC emission reductions on a per product category basis, though exact reduction and cost-effectiveness estimates are unknown. Consequently, the District will

continue to evaluate the proposed measure, and if warranted, will schedule the possible measure for consideration/adoption in a subsequent RAQS Revision. District resources permitting, rule development may be pursued before then if resulting emission reductions would be significant.

Alternative Approaches to Reducing Criteria Pollutants and GHGs within District's Regulatory Authority

The 2022 RAQS statutorily focuses on reductions of ozone precursors, while also seeking to achieve GHG and PM reductions as co-benefits. The District does not have the regulatory authority to regulate certain sectors (such as mobile sources) that could encourage additional reductions of GHGs. However, the District can nonetheless support and advocate for specific voluntary strategies that could achieve further criteria pollutant and/or GHG or PM reductions within our regulatory authority. Examples of such activities could include, but are not limited to: possible future rulemaking activities, enhanced education and outreach, the promotion of and providing additional incentive funding opportunities, enhanced legislative advocacy, enhanced CEQA review for local projects, the development (or promotion) of regionwide best management practices, and enhancing partnerships at the local, state, and federal levels.

While possible stationary source control measures the District may pursue are listed within Attachments H and I, examples of other possible sectors/categories in which the District could be further involved are included in Table I-2 (Alternative Approaches to Reduce Air Pollution, by Sector). Notably, not all of these activities in Table I-2 may require rule development to further pursue. For example, opportunities to enhance education and outreach to San Diego County could be pursued without additional rulemaking, and would support the District's recently adopted Public Participation Plan.[105] Additionally, pursuing additional grant opportunities at the state or federal levels could be pursued on an as-needed basis (in line with Governing Board authority and AB 423 requirements). Such opportunities would need to be prioritized and scheduled based on available workload of existing staff, and may require long-term strategic planning and budgeting to further pursue.

Nonetheless, to ensure all opportunities are explored to the fullest extent and to align with recent Governing Board direction, the District has scheduled evaluation of an ongoing further study measure that would schedule or consider such strategies (as applicable) either in a subsequent RAQS Revision or on an as-needed basis. District resources permitting, rule development (if applicable) may be pursued before then if resulting emission reductions would be significant.

Table I-2
Alternative Approaches to Reduce Air Pollution, by Sector

Control Measure Number	Control Measure	Possible Implementation Tools				
		Rulemaking	Funding	Facilitate Best Policies	Outreach & Education	Advocacy
Transportation						
T-1	Indirect Sources	X		X	X	X
T-2	Teleworking Initiatives		X	X	X	X
T-3	Trip Reduction Programs			X	X	X
T-4	Enhancing Local and Regional Transit Service					X
T-5	Enhanced Transit Efficiency and Use		X		X	X
T-6	Enhanced Freeway and Arterial Operations					X
T-7	Safe Routes to Schools		X	X	X	X
T-8	Ridesharing		X	X	X	X
T-9	Last-Mile Connections		X	X	X	X
T-10	Bicycle and Pedestrian Improvements		X	X	X	X
T-11	Land Use Strategies			X	X	X
T-12	Autonomous Vehicles		X	X	X	X
T-13	Parking Policies			X	X	X
T-14	Cars and Light Trucks		X		X	X
T-15	Aircraft		X		X	X
T-16	Goods Movement		X		X	X
T-17	Medium and Heavy-duty Trucks		X		X	X
T-18	Ocean Going Vessels		X		X	X
T-19	Commercial Harbor Craft		X		X	X
T-20	Locomotives		X		X	X
T-21	Construction Equipment		X		X	X
T-22	Agricultural Equipment		X		X	X
T-23	Lawn and Garden Equipment		X		X	X
T-24	Infrastructure supporting Zero/Near-Zero Vehicles		X	X	X	X
T-25	CEQA Review			X	X	
Buildings						
B-1	Green Buildings		X	X	X	X

Control Measure Number	Control Measure	Possible Implementation Tools				
		Rulemaking	Funding	Facilitate Best Policies	Outreach & Education	Advocacy
B-2	Decarbonize Buildings	X	X	X	X	X
B-3	CEQA Review			X	X	
Energy						
E-1	Decarbonize Electricity Production	X		X	X	X
E-2	Decrease Electricity Demand			X	X	X
E-3	CEQA Review			X	X	
Agriculture						
A-1	Agricultural Burning and Best Practices	X		X	X	X
A-2	Dairy Digesters	X		X	X	X
A-3	Enteric Fermentation			X	X	X
A-4	Livestock & Poultry Waste	X		X	X	X
A-5	CEQA Review			X	X	
Natural and Working Lands						
L-1	Carbon Sequestration		X	X	X	X
L-2	Urban Tree Planting		X	X	X	X
L-3	Wildfire Prevention and Best Practices	X	X	X	X	X
L-4	CEQA Review			X	X	
Waste						
W-1	Landfills	X		X	X	X
W-2	Composting and Anaerobic Digesters	X		X	X	X
W-3	Green Waste Diversion			X	X	X
W-4	Recycling and Waste Reduction			X	X	X
W-5	CEQA Review			X	X	
GHGs						
G-1	Short-Lived Climate Pollutants		X		X	X
G-2	Guidance for Local Planners			X	X	
G-3	GHG Monitoring and Emissions Measurements			X	X	
G-4	CEQA Review			X	X	

ATTACHMENT J

INCENTIVE PROGRAMS

Since 1999, the District has implemented numerous grant programs to upgrade high-emitting equipment to newer, lower-emitting technologies in advance of or beyond regulatory requirements. Approximately $157 million has been granted to equipment owners during that timeframe, resulting in combined pollutant and GHG emission reductions (VOC, NOx, Carbon Monoxide (CO), PM, and GHGs) of approximately 13 tons per day, equivalent to removing approximately six million cars from operating on the road.

Table J-1 summarizes the District funds that have been allocated and liquidated by program between July 1999 and July 2022, as well as the estimated annual emission reductions that will be obtained over the lives of the funded projects. A brief discussion of each program is presented after Table J-1.

"The Carl Moyer Program enabled me to update my 41 year old engines with state of the art engines. Not only did this make me fuel efficient but also more productive which directly contributed to a successful season. Without this program, I never could have afforded this re-powering on my own."

– Bob J. Blocker, Captain/Owner
Her Grace Fisheries, Inc., San Diego, CA

Table J-1
Incentive Programs,
Annual Funding Allocations and Emission Reductions

Program	Amount Funded	Annual Emission Reduction (tons/year)			
FY1999-2000		**VOC**	**NOx**	**CO**	**PM**
Carl Moyer MY1	$1,059,880		29.04		0.02
Carl Moyer Match (VRF)	$542,831				
Lawnmower Exchange	$109,610	0.60	0.12	10.67	
TOTAL	$1,712,321	0.60	29.16	10.67	0.02
FY2000-2001		**VOC**	**NOx**	**CO**	**PM**
Carl Moyer MY2	$1,037,358		4.72		0.25
Carl Moyer Match (VRF)	$404,749				
Lawnmower Exchange	$113,000	0.62	0.13	11.00	
TOTAL	$1,555,107	0.62	4.85	11.00	0.25
FY2001-2002		**VOC**	**NOx**	**CO**	**PM**
Carl Moyer MY3	$1,851,826		3.47		0.28
Carl Moyer Match (VRF)	$503,495				
VRF	$3,184,984				
Lawnmower Exchange	$135,600	0.75	0.15	13.20	
TOTAL	$5,675,905	0.75	3.62	13.20	0.28
FY2002-2003		**VOC**	**NOx**	**CO**	**PM**
Carl Moyer MY4	$714,147		21.34		0.60
Carl Moyer Match (VRF)	$357,073				
VRF	$3,168,122				
Air Quality Power Generation Mitigation Fund (Other)	$5,445,059				
Lawnmower Exchange	$99,600	0.52	0.11	9.13	
TOTAL	$9,784,001	0.52	21.45	9.13	0.60
FY2003-2004		**VOC**	**NOx**	**CO**	**PM**
Carl Moyer MY5	$867,328		20.85		0.70
Carl Moyer Match	$433,664				
VRF	$2,279,365				
Air Quality Power Generation Mitigation Fund (Other)	$970,528				
Lawnmower Exchange	$96,000	0.50	0.10	8.80	
TOTAL	$4,646,885	0.50	20.95	8.80	0.70
FY2004-2005		**VOC**	**NOx**	**CO**	**PM**
Carl Moyer MY6	$919,738		28.00		2.17
Carl Moyer Match (VRF)	$503,495				
VRF	$2,274,142				
Air Quality Power Generation Mitigation Fund (Other)	$395,225				
Lawnmower Exchange	$76,560	0.40	0.08	7.02	
TOTAL	$4,169,160	0.40	28.08	7.02	2.17
FY2005-2006		**VOC**	**NOx**	**CO**	**PM**
Carl Moyer MY7	$1,107,792		13.22		2.70
Carl Moyer Multi-District	$542,330				
Carl Moyer Match (VRF)	$459,165				
VRF	$1,898,499				
Air Quality Power Generation Mitigation Fund (Other)	$2,029,506				
Lawnmower Exchange	$96,000	0.50	0.10	8.80	
TOTAL	$6,133,292	0.50	13.32	8.80	2.70
FY2006-2007		**VOC**	**NOx**	**CO**	**PM**
Carl Moyer MY8	$4,364,589				
Carl Moyer Match (VRF)	$582,309				
VRF	$805,987				
Air Quality Power Generation Mitigation Fund (Other)	$360,426	29.38	251.75		8.93
Lawnmower Exchange	$96,000	0.50	0.10	8.80	
TOTAL	$6,209,311	29.88	251.85	8.80	8.93

Table J-1 (continued)
Incentive Programs
Annual Funding Allocations and Emission Reductions

Program	Amount Funded	Annual Emission Reduction (tons/year)			
FY2007-2008		**VOC**	**NOx**	**CO**	**PM**
Carl Moyer MY9	$3,786,473	14.41	129.71		5.43
Carl Moyer Match (VRF)	$1,119,504				
Air Quality Power Generation Mitigation Fund (Moyer, LESB, Other)	$373,443				
Lawnmower Exchange	$95,910	0.52	0.10	9.17	
TOTAL	$5,375,330	14.93	129.81	9.17	5.43
FY2008-2009		**VOC**	**NOx**	**CO**	**PM**
Carl Moyer MY10	$4,411,889	4.20	80.84		2.51
Carl Moyer Match (VRF)	$608,585				
Air Quality Power Generation Mitigation Fund (Moyer, LESB, Other)	$859,989				
Lawnmower Exchange	$95,871	0.57	0.11	10.10	
TOTAL	$5,976,334	4.77	80.95	10.10	2.51
FY2009-2010		**VOC**	**NOx**	**CO**	**PM**
Carl Moyer MY11	$3,115,588	2.40	62.28		1.97
Carl Moyer Match (VRF)	$963,361				
VIP (VRF, Multi-District)	$690,000	0.21	12.78		0.36
Air Quality Power Generation Mitigation Fund (ARRA/LESB, Moyer Match, Other)	$2,233,956	0.92	0.78	6.10	0.50
Lawnmower Exchange	$106,000	0.98	0.20	17.27	
Lawn and Garden Equipment Replacement (LGER)	$57,500				
TOTAL	$7,166,405	4.51	76.04	23.37	2.83
FY2010-2011		**VOC**	**NOx**	**CO**	**PM**
Carl Moyer MY12	$2,051,967	1.03	25.61		0.64
Carl Moyer Match (VRF)	$374,625				
VIP (Moyer, VRF, Multi-District)	$1,504,609	0.55	28.34		0.28
Proposition 1B (GMERP) - YR 1 (Drayage)	$4,899,000		68.35		3.09
ARRA National Clean Diesel Program	$1,482,420	0.92	0.78	6.10	0.50
Air Quality Power Generation Mitigation Fund (ARRA/LESB, Moyer Match)	$1,081,566				
School Bus (LESB)	$423,399	1.00		4.68	0.57
Lawnmower Exchange	$106,000	0.95	0.19	16.70	
Lawn and Garden Equipment Replacement (LGER)	$52,085				
TOTAL	$11,975,671	4.45	123.27	27.48	5.08
FY2011-2012		**VOC**	**NOx**	**CO**	**PM**
Carl Moyer MY13	$675,020	0.36	8.47		0.12
Carl Moyer Match	$398,975				
VIP (Moyer, Multi-District)	$2,535,000	0.98	59.96		0.30
Air Quality Power Generation Mitigation Fund	$0				
Proposition 1B (GMERP) - YR 1 ("Other")	$1,600,000		33.23		1.31
School Bus (LESB)	$5,275,201	5.83	10.05	38.76	3.37
Lawnmower Exchange	$113,960	0.65	0.13	11.40	
TOTAL	$10,598,156	7.81	111.84	50.15	5.10
FY2012-2013		**VOC**	**NOx**	**CO**	**PM**
Carl Moyer MY14	$1,883,440	1.88	28.55		1.02
Carl Moyer Match (VRF)	$1,062,633				
Air Quality Power Generation Mitigation Fund (Moyer Match, TRIP)	$648,640				
VIP (Moyer, Multi-District)	$750,000	0.38	21.94		0.19
Proposition 1B (GMERP) - YR 2/3 Trucks	$10,835,013		183.02		7.54
Vehicle Registration Fund (VRF) - GMERP Truck Match	$322,454				
Proposition 1B (GMERP) - YR 2/3 Harbor Craft	$110,852		4.90		0.40
School Bus (LESB)	$32,925	0.11		0.83	0.07
Lawnmower Exchange	$129,140	0.73	0.15	12.91	
TOTAL	$15,775,097	3.10	238.56	13.74	9.22

Table J-1 (continued)
Incentive Programs
Annual Funding Allocations and Emission Reductions

Program	Amount Funded	Annual Emission Reduction (tons/year)			
FY2013-2014		**VOC**	**NOx**	**CO**	**PM**
Carl Moyer MY15	$1,673,922	1.18	14.35		0.70
Carl Moyer Match (VRF)	$200,636				
Air Quality Power Generation Mitigation Fund (Moyer Match)	$0				
VIP (Moyer, VRF, Match)	$1,226,692	0.39	24.69		0.03
Proposition 1B (GMERP) - YR 4 Trucks	$4,446,118				
Vehicle Registration Fund (VRF) - GMERP Truck Match	$360,000		59.94		0.60
Proposition 1B (GMERP) - YR 4 Harbor Craft	$173,197		3.20		0.18
School Bus (LESB)	$0				
Lawnmower Exchange	$129,140	0.73	0.15	12.91	
TOTAL	$8,209,705	2.30	102.33	12.91	1.51
FY2014-2015		**VOC**	**NOx**	**CO**	**PM**
Carl Moyer MY16	$2,678,423	2.24	22.40		0.96
Carl Moyer Match (VRF)	$133,514				
Air Quality Power Generation Mitigation Fund (Moyer Match)	$0				
VIP (Match, VRF)	$268,227	0.05	4.54		0.04
Proposition 1B (GMERP)	$0				
School Bus (LESB)	$0				
Pilot Taxicab Replacement Program	$132,000		0.10	2.67	
Lawnmower Exchange	$80,520	0.45	0.09	8.04	
TOTAL	$3,292,684	2.74	27.13	10.71	1.00
FY2015-2016		**VOC**	**NOx**	**CO**	**PM**
Carl Moyer MY17	$3,005,916	2.86	35.28		1.37
Carl Moyer Match (VRF)	$289,653				
VIP (Match, VRF)	$510,000	0.06	9.27		0.14
Lawnmower Exchange	$118,140	0.66	0.13	11.79	
TOTAL	$3,923,709	3.58	44.68	11.79	1.51
FY2016-2017		**VOC**	**NOx**	**CO**	**PM**
Carl Moyer MY18	$3,043,213	2.70	30.92		1.31
Carl Moyer Match (VRF)	$413,362				
VIP (Match, VRF)	$540,000	0.82	5.45		0.33
School Bus CNG Tank Replacement Incentive Program (TRIP) (VRF, Mitigation)	$706,463				
Lawnmower Exchange	$112,691	0.78	0.16	13.88	
TOTAL	$4,815,729	4.30	36.53	13.88	1.64
FY2017-2018		**VOC**	**NOx**	**CO**	**PM**
Carl Moyer MY19	$3,735,580	4.55	54.24		2.11
Carl Moyer Match (VRF)	$533,524				
Lawnmower Exchange	$89,204	0.73	0.15	12.95	
TOTAL	$4,358,308	5.28	54.39	12.95	2.11

(continued on next page)

Table J-1 (continued)
Incentive Programs
Annual Funding Allocations and Emission Reductions

Program	Amount Funded	Annual Emission Reduction (tons/year)				
FY2018-2019		**VOC**	**NOx**	**CO**	**GHG**	**PM**
Carl Moyer MY20	$4,087,599	2.20	25.11			1.55
VIP (Match, VRF)	$570,000	0.87	6.86			0.27
FARMER (Yr 1)	$1,311,994	5.62	12.89		1,417.25	1.68
Community Air Protection Funds (CAPP) (Yr 1)	$2,687,254	0.69	11.41			0.84
Voluntary NOx Remediation Measure (NRM)	$524,497	2.88	14.14			1.29
Drayage Truck Demonstration Project (VRF)	$200,000					
TOTAL:	$9,381,344	12.26	70.41	0.00	1,417.25	5.62
FY2019-2020		**VOC**	**NOx**	**CO**	**GHG**	**PM**
Carl Moyer MY21	$2,337,073	2.10	24.15			1.05
Carl Moyer Match (VRF)	$787,370					
FARMER (Yr 2)	$709,863	4.53	11.11		1,240.06	1.34
Community Air Protection Funds (CAPP) (Yr 2)	$1,239,654	0.18	2.72		60.43	0.07
TOTAL:	$5,073,960	6.81	37.98	0.00	1,300.49	2.46
FY2020-2021 (to date)		**VOC**	**NOx**	**CO**	**GHG**	**PM**
Carl Moyer MY22	$1,139,918	0.64	10.16			0.41
Carl Moyer Match (VRF)	$2,000,000					
FARMER (Yr 3)	$0					
Community Air Protection Funds (CAPP) (Yr 3)	$0					
Local Vehicle Retirement Program ("T-3.3") (“SCRAP”)	$9,200	0.21			65.84	
Local Electric Vehicle Charging Station Program ("T-3.5") (“CALeVIP)	$19,645					
TOTAL:	$3,168,763	0.85	10.16	0.00	65.84	0.41
FY2021-2022 (to date)		**VOC**	**NOx**	**CO**	**GHG**	**PM**
Carl Moyer MY23	$0					
Carl Moyer Match (VRF)	$7,636,210	5.36	70.53			2.10
VIP (Match, VRF)	$525,000	1.38	8.78			0.38
FARMER (Yr 4)	$0					
Community Air Protection Funds (CAPP) (Yr 5)	$0					
Local Vehicle Retirement Program ("T-3.3") (“SCRAP”)	$25,300	0.44			139.91	
Local Electric Vehicle Charging Station Program ("T-3.5") (“CALeVIP)	$376,425					
Portside Air Quality Improvement and Relief (“PAIR” Program	$226,390					
Clean Cars 4 All	$0					
Proposition 1B (GMERP) - Yr 4 Trucks	$8,730,000		46.49			
Proposition 1B (GMERP) – Yr 5 Harbor Craft	$1,080,794		15.05			1.11
TOTAL:	$18,600,119	7.18	140.85	0.00	139.91	3.58

	Total Amount Funded (FY1999-2022)	Total Annual Emission Reduction (tons/year)				
		VOC	**NOx**	**CO**	**GHG**	**PM**
GRAND TOTAL	**$157,577,295**	**118.64**	**1,658.22**	**273.65**	**2,923.49**	**65.64**

	Total Annual Emission Reduction (tons/day)				
	VOC	**NOx**	**CO**	**GHG**	**PM**
	0.32	**4.54**	**0.75**	**8.00**	**0.18**

Carl Moyer Program

The Carl Moyer Memorial Air Quality Standards Attainment Program is a state-funded program[106] offering incentives to reduce ROG (i.e. VOC), NOx, and PM emissions from heavy-duty diesel engines, and to assist fleets with infrastructure upgrades to support such equipment. The program consists of general categories of equipment upgrades, including on-road heavy-duty vehicles, off-road equipment (including portable and stationary agricultural engines), locomotives, marine vessels, light-duty vehicles, lawn and garden equipment, and infrastructure.

The Carl Moyer program is named in honor of the late Dr. Carl Moyer, who created the program to unite business and government in the name of public interest to improve air quality.

Within each equipment replacement categories, three types of projects are generally eligible for funding: repower (i.e., engine replacement), equipment replacement (i.e., replacing an entire piece of equipment with a newer model), and/or retrofitting (i.e., the addition of control equipment such as a filter). Examples of funded projects include but are not limited to: (1) the replacement of old locomotives with newer, low-emitting technology locomotives, (2) replacing old earth moving equipment, such as tractors or dozers, with new, low-emitting tractors or dozers, and (3) repowering marine vessels with newer, low-emitting engines.

The Carl Moyer Program also offers incentive funding for eligible infrastructure projects to fuel or power mobile sources eligible in the Carl Moyer program. The deployment of such alternative, advanced and cleaner technologies is critical to supporting regional and state air quality goals. Types of projects that are eligible for funding include but are not limited to: (1) battery charging stations, (2) hydrogen or CNG fueling stations, (3) stationary agricultural pumps, and (4) shore power for marine vessels. Infrastructure projects are not required to meet cost-effectiveness thresholds, and can be awarded additional funding if they meet certain criteria, such as being publicly accessible, or incorporating solar/wind power systems. To further encourage cleaner technology replacement projects, in 2022 CARB adopted/revised cost-effectiveness limits for several zero-emission and advanced technology equipment categories, including on-road school bus replacement and off-road equipment replacement projects.

Carl Moyer funds are allocated by CARB to participating air districts based on several factors, including population, severity of the local air quality problems, and the historical allocation of Carl Moyer funding.[107] Air districts are required to provide a 15% match for each project. Since 2008, the District has primarily used Vehicle Registration Fund (VRF) and Air Quality Power Generation Mitigation funds to meet the Carl Moyer program match requirement. State law also requires that 50% of the funds be allocated to Environmental Justice areas (i.e., low-income or under-resourced communities disproportionally

The Carl Moyer Program funds a variety of equipment types

impacted by air pollution). For consistency with statewide environmental justice definitions, the District updated its Environmental Justice area definition and criteria in 2018. The District criteria reflects the most recent data found in the CalEnviroscreen tool, as well as SB 535 and AB1550 requirements. The definition also more accurately reflects changing demographics and census data.

Legislation was adopted in 2022 to extend the collection of fees that support the Carl Moyer program through January 1, 2034.[108] Without such legislation being passed by January 1, 2024, some fees and other authorizations previously approved by the Legislature would sunset.

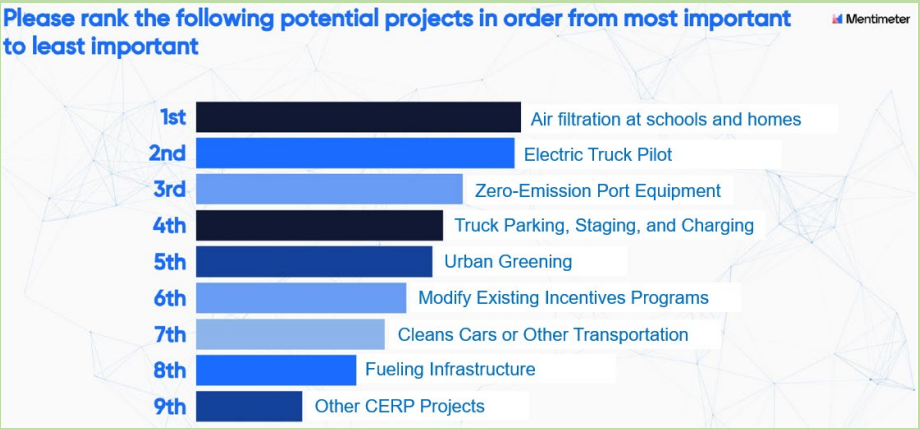
Community Air Protection Program (CAPP)

In 2017, AB 617 (C. Garcia) directed CARB and local air districts to establish the Community Air Protection Program (CAPP). AB 617 provided a new community-focused action framework to improve air quality and reduce exposure of criteria pollutants and TACs in communities most impacted by air pollution. The CAPP program overall is a comprehensive strategy that consists of multiple facets, all to be implemented in tandem to improve air quality in affected areas. These facets include but are not limited to: (1) enhanced regulatory/rule requirements, (2) active engagement with community members, (3) enhanced air quality monitoring, and (4) incentive projects that can quickly reduce emissions.

In recognition of the need for funding projects in these areas, Governor Brown included a one-time appropriation of $245 million statewide from the CARB Greenhouse Gas Reduction Fund in the 2017-2018 state budget. San Diego County was allocated $3 million out of this statewide appropriation; thus mandating the adoption and implementation of a CAPP incentive program (Year 1) in San Diego County.[109] Since that time, San Diego County received CAPP funding allotments of $18.9 million (Year 2), $16.0 million (Year 3), and $19.9 million (Year 5). Collectively, the region has received over $57 million in CAPP incentive funding to date.[110]

Like Carl Moyer, the CAPP incentive program funds the incremental cost of cleaner-than-required heavy-duty engines and equipment, including on-road trucks involved in freight movement and off-road equipment. CAPP largely adheres to Carl Moyer program requirements. However, CAPP-eligible projects are eligible to receive a higher maximum eligible cost compared to a Carl Moyer-funded project (typically 10% more). Additionally,

priority is given to projects that demonstrate operation or benefits to low-income and state-designated disadvantaged communities in San Diego County, particularly those identified through the AB 617 statewide regulatory process such as the communities of Portside, International Border, and El Cajon. CAPP also prioritizes zero-emission projects and infrastructure when feasible. Locally, the District also requests the feedback and approval of local AB 617 Steering Committee(s) of projects proposed to be funded using CAPP funds, to ensure the projects meet the priorities and goals of community members.



The District routinely surveys community members on how they would like the District to allocate CAPP funding. In 2021, air filtration and zero-emission equipment/infrastructure projects were high priorities for the Portside Steering Committee.

The District first solicited for CAPP-eligible projects in a coordinated solicitation with other local grant programs in July 2018, and has solicited for projects at least three times since. To date, the District has allocated CAPP funding to projects that local steering committees have approved of, including zero-emission school buses/tugboats/off-road equipment, on-road heavy duty vehicle replacements, agricultural tractor replacements, upgraded marine vessels, and zero-emission infrastructure. Projects funded (or currently under contract) as of July 2022 will result in direct emission reductions of 52 tons per year of NOx, 6 tons per year of VOC, 1.5 tons per year of PM, and 2,215 tons per year of GHG, just within under-resourced communities. Because of the substantial benefits to under-resourced communities, the District anticipates continuing to administer CAPP funding for the foreseeable future, contingent upon state funding continuing to be allocated to the San Diego region.

Funding Agricultural Replacement Measures for Emission Reductions (FARMER) Program

The 2017-2018 state budget allocated approximately $135 million to CARB to “reduce agricultural sector emissions” through the use of grants and incentives. As a result, CARB developed a new statewide incentive program known as FARMER to fund the incremental cost of low-emission engines and equipment from the agricultural sector. Eligible equipment includes tractors, harvesting equipment, irrigation pump engines, and other equipment used in agricultural operations.

The FARMER program requirements largely adhere to the Carl Moyer program in terms of project scope and funding amounts. However, FARMER has made specific revisions that assist in implementation of projects in the agricultural sector. Examples include the addition of new project categories (e.g. agricultural zero-emission Utility Terrain Vehicle (UTV) replacement), as well as enhanced funding amounts for on-road truck replacements involved in the agricultural sector. Like CAPP, FARMER funding is subject to annual appropriations at the state legislature.

FARMER, with the aid of Greenhouse Gas Reductions Funds (GGRF), replaces aging farm tractors with newer, lower-emitting models

In recognition that most agricultural equipment is operated in the San Joaquin Valley, in 2017-18 San Diego County and other local air districts in California split approximately 20% of the total 2017-18 funds available (i.e., FARMER Year 1), while San Joaquin Valley APCD received approximately 80% of such funds. Since that time, San Diego County has received FARMER funding allotments of $1.2 million (Year 2), $0.5 million (Year 3), and $2.5 million (Year 4).

The District first solicited for FARMER-eligible projects in a coordinated solicitation with other local grant programs in July 2018, and has solicited for projects at least three times since. To date, the District has allocated FARMER funding to projects including zero-emission agricultural Utility Terrain Vehicles (UTVs), agricultural equipment and tractor replacements, and cleaner/lower-emitting heavy-duty trucks used in agricultural operations. Projects funded (or currently under contract) as of July 2022 will result in direct emission reductions of 24 tons per year of NOx, 10 tons per year of VOC, 3 tons per year of PM, and 2,657 tons per year of GHG. Because of the substantial emission reduction benefits, the District anticipates continuing to administer FARMER funding for the foreseeable future, contingent upon state funding continuing to be allocated to the San Diego region.

Voluntary NOx Remediation Measure (NRM)

In 2018, CARB determined that while biodiesel use is health beneficial overall, biodiesel can (in certain engines) contribute to an increase in NOx.[111] While CARB has since taken steps to eliminate future NOx increases in biomass-based fuels, in response to litigation, CARB agreed to remediate historical NOx emission increases stemming from biodiesel use in the state's Low Carbon Fuel Standard program between 2007-2016. Consequently, on April 27, 2018, CARB approved Resolution 18-22 to establish the Voluntary NOx Remediation Measure funding program (NRM) to offset the historical NOx

emission increases from biodiesel. CARB appropriated $9 million statewide in FY2017-2018; San Diego County received approximately $0.5 million from this allocation.

Similar to other recent programs, the NRM program mirrored requirements found in the Carl Moyer program. However, since the NRM was required to reduce NOx emissions specifically, cost-effectiveness and grant amounts were solely based on consideration of NOx emission reductions. Similarly, the NRM cost-effectiveness limit and resulting grant calculations were based solely on NOx emission rates.[112] Also, NRM funds were only to be used for project categories where biodiesel use was prevalent, such as heavy-duty on-road vehicles, off-road engines and equipment, locomotives, and marine vessels (exclusive of ocean-going vessels).

The District solicited for NRM-eligible projects twice in coordinated solicitations with other local grant programs beginning in July 2018. The District has since allocated all available NRM funding to agricultural tractor replacements. As of July 2022, projects funded by the NRM have resulted in direct emission reductions of 14 tons per year of NOx, 2.8 tons per year of VOC, and 1.2 tons per year of PM. Though the program resulted in substantial air quality benefits, the funding source was limited (one-time). As such, the District does not anticipate continuing to receive NRM funding allotments in the future.

Voucher Incentive Program (VIP)

The Voucher Incentive Program (VIP) is a subcomponent of the Carl Moyer Program designed to provide a streamlined approach to reduce emissions from small on-road heavy-duty truck fleets (10 or fewer trucks) by replacing existing, high-polluting vehicles with new, lower-emission vehicles. The program consists of two main project categories for heavy-duty and medium-duty diesel vehicles: (1) new replacement vehicle purchase, and (2) used replacement vehicle purchase. Voucher amounts have historically ranged between $10,000 and $410,000 for each new vehicle purchased, and between $10,000 and $50,000 for each used vehicle purchased, depending on the project type selected, engine year, and usage of the equipment.

VIP replaces aging on-road heavy-duty trucks with newer, lower-emission vehicles

The District partners with dealerships, installers, and dismantlers to participate in the program. Truck owners then work with approved vendors to select their new equipment and apply for funding. If approved by the District, the truck owner receives a voucher for the amount of grant funding, which is redeemable at the participating dealership. The equipment owner subsequently completes the sale for the new equipment, with the amount of the voucher deducted from the overall cost. The District then reimburses the participating dealership for the approved voucher amount.

Funding for VIP emanates from state Carl Moyer program funds or air district match funds. The District began implementation of VIP in 2010, and has administered a local program whenever funding/resources are available. As of July 2022, the program has funded over 300 truck replacement projects, providing approximately $9.2 million. Contingent on funding availability, available District resources to administer, and the reasonable ability for applicants to be eligible in the program, the District will consider re-opening VIP in the future.

Proposition 1B Goods Movement Emission Reduction Program (GMERP)

The Proposition 1B Goods Movement Emission Reduction Program (GMERP) is a statewide emission reduction program codified into H&SC §39625 et seq. The GMERP is a partnership between CARB and local agencies to reduce air pollution emissions and health risk from freight movement along California's major trade corridors. Projects funded under this program must achieve early or extra emission reductions not otherwise required by law or regulation. The program is funded through a $1 billion statewide bond authorized by California voters in November 2006.

Zero and near-zero emission heavy-duty vehicles are the focus of the Proposition 1B GMERP program

Funding for the program is allocated by trade corridor and project category funding targets. In 2008, CARB approved funding targets for each trade corridor for the program, which resulted in the San Diego/Border Trade Corridor (historically split between San Diego and Imperial Counties) being targeted to receive six percent of the overall funding. CARB also approved targets for project categories, which resulted in the majority of funding (approximately 70%) targeted towards heavy-duty truck projects that reduce on-road emissions.

Historically, the program has consisted of five main project categories: heavy-duty diesel trucks, locomotives and railyards, ships at berth (shore power), commercial harbor craft, and cargo handling equipment. To date, the District has only funded projects in the heavy-duty diesel truck and commercial harbor craft categories, despite soliciting for projects in other categories. The program has undergone multiple administrative changes since its inception in 2008, resulting in varied grant amounts per project. Truck projects, for example, have historically ranged between $5,000 for diesel particulate filter installation and $60,000 for truck replacement projects. Today, the program now allows for up to $200,000 for each zero-emission replacement truck project.

In the first four installments of GMERP funding, the District funded 70 diesel particulate filter retrofits, 453 truck replacements, and three commercial harbor craft repower projects, expending over $22 million in project funding. Prior to the fifth installment of funding, CARB made significant changes to the program to incentivize engine manufacturers to produce technology that is zero or near-zero emissions, in line with the CARB Sustainable Freight Initiative. Approximately $17.6 million in total was allocated to San Diego County in the fifth program year, which the District continues to try and administer to this day. Through July 2022, the District has expended over $9 million in lower-emission truck replacement and commercial harbor craft repower projects.

Without significant revisions being made to the CARB Program Guidelines, finding projects that are eligible to participate (i.e., prior to statutory operational and state compliance deadlines) will be a significant challenge for implementation of the program moving forward. As such, the District conducted a possible final project solicitation in 2022 with all remaining GMERP funds available. After project evaluation, should the District determine any GMERP funding still remain unallocated, the District will consider whether to continue implementing the program until all funds are exhausted, or to return funds to CARB to re-allocate to another GMERP-participating air district that has a need for such funding.

Vehicle Registration Fund (VRF)

The Vehicle Registration Fund (VRF) is a District program established pursuant to state law (H&SC 44220 et seq.). The program uses a vehicle registration fee collected by the Department of Motor Vehicles (DMV) to reduce air pollution from motor vehicles and for related planning, monitoring, enforcement, and technical studies necessary to implement the CCAA in San Diego County. In 1990, the Board established a $2 annual fee for every on-road motor vehicle registered in the County. In 1992, AB 2766 was amended to allow California air districts to collect up to $4 per vehicle in motor vehicle emission reduction fees. In 2009 the Board approved a resolution to increase the fee to $4 per registered vehicle, in line with amended AB 2766. On an annual basis, the District collects approximately $12 million in the VRF.

VRF funds are utilized in a variety of ways at air districts.[113] For incentives, VRF fees have primarily been used to provide matching funds to continue and expand beneficial mobile source emission reduction programs in the region, notably the Carl Moyer Program and Proposition 1B Goods Movement Emission Reduction Program. For example, match funding was offered in two project solicitations of GMERP to encourage applicants to purchase alternative fuel equipment instead of diesel. Additionally, the District has provided significant additional match funding for the Carl Moyer program to complete several large-scale off-road equipment and locomotive replacement projects.[114] The funds also provide cost recovery for the District's motor vehicle-related planning, monitoring, enforcement, and technical studies pursuant to the CCAA.

Though VRF funding currently being collected via AB2766 will persist, additional legislation (AB 923, Firebaugh) allows California air districts to potentially collect

additional revenue from motor vehicle registration fees in the form of an extra $2 annual fee per DMV registration. First enacted in 2004, the ability to collect AB 923 fees has been available to the District since that time, but has never been pursued. That said, the ability to collect AB 923 fees was reauthorized by the Legislature in 2013,[115] extending the authorization to collect such fees through January 1, 2024. Legislation was adopted in 2022 to reauthorize the ability to collect AB 923 funds (as well as Carl Moyer funding) through January 1, 2034.[116] The District may consider pursuing the collection of AB 923 funds in the future, to ensure the District and the region maintain a stable, long-term funding source for local emission reduction projects.

Air Quality Power Generation Mitigation Fund

The District originally created the Air Quality Power Generation Mitigation Fund in response to mitigation funds received from various sources. For example, in 2004, as part of the California Energy Commission (CEC) Power Plant Site approval process, the CEC conditioned approval of the Palomar Energy Project in Escondido, which provided a $1.2 million PM mitigation fund in response to community concerns regarding project-related PM emissions. Similarly in 2006, the District received $1.33 million in mitigation funds from approval of the Calpine Corporation Energy Project in Otay Mesa, and in 2009 received $244,000 in mitigation funds from approval of the Orange Grove Energy Project in Fallbrook.

The fund previously incentivized various mobile source incentive projects, including retrofitting older school buses and heavy-duty trucks with PM filters, installing fast-fill natural gas refueling facilities, replacing and retrofitting off-road equipment, and replacing aging school bus CNG fuel tank, among other projects. The fund has also historically leveraged match funding from other programs such as Carl Moyer and ARRA. With all available now exhausted, the District no longer administers this funding program.

School Bus Compressed Natural Gas (CNG) Tank Replacement Incentive Program (TRIP)

Over the past 20 years, many local school districts have replaced diesel school buses with cleaner-burning CNG-fueled engines and buses. However, while many CNG school buses have a service life up to 30 years, the onboard CNG tanks expire after 15 years. Any school buses with expired CNG tanks must be grounded pursuant to federal regulation, and are subsequently replaced with older, diesel-fueled buses until their tanks are replaced. To ensure CNG school buses remain operational, in 2012, the District established the School Bus On-Board CNG Tank Replacement Incentive Program (TRIP). The 2012 iteration of the program allocated $650,000 in Air Quality Power Generation Mitigation funding to replace over 30 expired or soon-to-expire CNG tanks with new equipment.

In 2016, an additional 39 CNG school buses were identified as having tanks that were reaching the end of their useful lives. Consequently, the District opened a second TRIP solicitation offering up to $20,000 for each new installed CNG tank, and additional funding for CNG fueling system services as applicable. The 2016 TRIP allocated approximately

$700,000 (funded through the Vehicle Registration Fund and Air Quality Power Mitigation Fund) for local school districts to complete a total of 37 school bus CNG tank replacements, as well as one fueling system repair. No emission reductions were credited to the program, but the continued use of cleaner-burning CNG equipment over older, diesel-fueled equipment, offsets any possible emission increases before they occur.

With zero-emission school bus project funding now readily available at the local, state, and federal levels, the District does not envision opening additional school bus TRIP solicitations in the future.

Drayage Truck Demonstration Project

Drayage trucks are used to transport goods through the San Diego region, including ports (and Ports of Entry), rail yards, warehouses, and distribution centers. However, these trucks which are typically diesel-powered, are a significant source of air pollutants that disproportionally impact under-resourced communities, such as the areas around San Diego Bay and the land Ports of Entry at San Ysidro and Otay Mesa. Accordingly, reducing drayage truck emissions is an important strategy toward meeting region-wide and community air quality goals, as well as protecting public health.

The duty cycle of a drayage truck, which typically make short trips and returns to a home yard each night, makes them prime targets for zero-emission technology. To advance the state of development and adoption of zero-emission technology in the drayage truck sector, in 2015 CARB developed a Zero-Emission Drayage Truck Demonstration Incentive Program. A collaborative group of five air districts statewide (including the District), applied and were awarded $23.7 million to have local businesses demonstrate over 40 Class 8 zero-emission capable drayage trucks from major manufacturers. As part of required match funding, the District provided $200,000 from the VRF to support the deployment and demonstration of two vehicles in San Diego County.[117] Both vehicles are now in operation.

Because the demonstration of the vehicles did not require scrapping of a diesel-powered vehicle, no emission reductions were credited to the program. However, the District anticipates the hands-on use of such vehicles by local businesses is providing value to spur market development of the technologies and, once commercialized, ultimately reap emission reduction benefits from companies in San Diego County that operate them. Though such funding is now exhausted, the District remains committed to pursuing other funding opportunities that could enable additional more zero-emission drayage trucks to be deployed through San Diego County, including recent approval to run a zero-emission short haul pilot project incentive program with the Port of San Diego in the near future.

Local Vehicle Retirement Program ("SCRAP")

In February 2018, the San Diego County Board of Supervisors adopted the County's first iteration of its Climate Action Plan (CAP) to reduce GHGs. One of the measures included in the CAP was to reestablish a local vehicle retirement program (i.e., Measure "T-3.3") in the unincorporated area of San Diego County. The goal of the program was to provide

a $1,000 cash incentive to residents and businesses retiring late model (i.e., 1997 or older) passenger vehicles or light duty trucks. The County envisioned retiring at least 1,600 late model vehicles by 2030 in this program. The District was the lead agency tasked with the development of the program, now called the Scrap Car Reimbursement Assistance Program ("SCRAP").

Because other statewide vehicle retirement programs are also available (notably, the Consumer Assistance Program administered by the Bureau of Automotive Repair), the District's SCRAP program is complementary to other such programs. For example, an eligible applicant in the Consumer Assistance Program in San Diego County, could potentially receive a SCRAP cash incentive that could "stack" on top of any state incentive received, provided the vehicle/applicant meet all eligibility requirements between the two programs. A cash incentive to retire older, polluting passenger vehicles gives residents and businesses a more attractive option when deciding whether to keep, sell, or retire their vehicle at the end of its useful life. Concurrently, a progressively newer and less-polluting vehicle fleet (or a participant who instead chooses to use public transit or a bicycle in place of a newer vehicle) will provide substantial GHG and ozone precursor emissions reductions. These ultimately assist the District in attainment of stringent state and national ozone standards, as well as supporting local CAPs.

SCRAP opened in 2020 during the COVID-19 pandemic, the latter of which pushed prices for new/used vehicles to all-time highs. As a result, uptake in the program has been slowed. To date, the program has allocated approximately $34,000 and facilitated 30 vehicles being permanently destroyed. To encourage more program participation, the District may consider revisions to the program in the future, including an increase to the per vehicle incentive amount, and/or increasing outreach to eligible households.

"SCRAP" provides a cash incentive to replace eligible aging light-duty vehicles (1997 or older). Destroying such vehicles can significantly reduce greenhouse gas emissions

Local Electric Vehicle Charging Station Program ("CALeVIP")

San Diego County's first CAP iteration included a number of measures designed to reduce GHGs. Another measure included in the CAP was the County's commitment to install 2,040 Level 2 electric vehicle charging stations (minimum power rating of 6.6 kW) in the unincorporated area of San Diego County by 2030 (i.e., Measure "T-3.5"). The

County also included an interim goal of installing 100 of those charging stations by 2025. The District was identified as the lead agency tasked with completing the measure in these timeframes. A robust charging network is necessary to support the adoption of zero-emission and plug-in hybrid vehicles. Proliferating the use of zero and near-zero emission vehicles reduces GHG and ozone precursor emissions.

CALeVIP opened in San Diego County in October 2020

During program development, the District considered a "District-only" program. However, other state and local agencies were also concurrently pursuing regionwide charging station incentive programs in San Diego County. As such, in 2020, the District partnered with the California Energy Commission (CEC) and SANDAG to open a "CALeVIP" program expansion into San Diego County. Already open in other areas of California, CALeVIP promotes easy access to zero-emission vehicle infrastructure for the purchase and installation of eligible Level 2 and DC Fast EV chargers in San Diego County. Combined, the program intends to allocate $21.7 million over a three-year period, with $1.4 million in funding from the District coming from the VRF. A minimum of 25% of total program funding must be committed to under-resourced communities. As of July 2022, all funding was either liquidated, reserved, or provisionally reserved for DC Fast chargers and Level 2 chargers.

The District will continue to work with program partners to implement CALeVIP over the next several years. Should CALeVIP (or a similar regional program) continue after current funds have been exhausted, the District will consider providing additional funding infusions as needed (and as resources allow) to support regional EV charging opportunities.

Lawn and Garden Equipment Exchange Program(s)

The District's historical Lawn Mower Exchange Program was an annual one-day event that allowed County residents to exchange working residential gasoline-powered lawn equipment for a voucher to purchase new non-polluting electric lawn equipment at a substantially reduced price. For example, a cordless rechargeable electric mower had a typical retail price between $450 and $500. With the voucher, the price was reduced to approximately $100. Participants purchased the new electric residential lawn equipment at the venue. The gas-powered equipment was disposed of at a metal recycling facility. The District's Lawn Mower Exchange Program was typically funded by the District with penalty funds collected from violators of air quality requirements.

During the 2017 event, the District surveyed 536 participants at the event. Over 90% of respondents replaced a residential lawnmower, 18% replaced a string trimmer, 5% replaced a chainsaw, and 2% replaced a hedge trimmer. The average age of equipment replaced was approximately 10 years old, and the average horsepower (hp) was approximately five hp. The age of mowers ranged between one and 52 years old, and horsepower ranged between one hp and eight hp. Collectively in 2017, the program replaced over 2,600 hp of gasoline powered lawn equipment engines with zero-emission technology.

The District's historical residential Lawn Mower Exchange Program provided an innovative means for residents to participate in an air quality improvement program. The 2018 event was the 19th and final event held in San Diego County. Altogether, nearly 10,000 pieces of residential lawn-equipment were replaced since the program's inception, totaling over $2.1 million in funding expended and nearly 50 tons of ozone-forming emissions reduced annually.

While interest in zero-emission residential lawn equipment remains high, equipment is now readily available at lower costs. Thus, while incentives for such equipment are still routinely sought, opportunities for incentive funding for residential lawn equipment are now limited. Additionally, in December 2021, CARB approved a regulation requiring all new residential lawn mowers and leaf blowers to be zero-emission starting in 2024.

CARB has now shifted priorities towards zero-emission commercial lawn equipment. CARB recently made an allocation of $30 million in incentive funds to California's Clean Off-Road Equipment Voucher Incentive Project (CORE) for commercial purchases of new zero-emission lawn equipment statewide.[118] Commercial lawn equipment typically operates longer time periods and more often than residential equipment, and are typically used by landscaping companies and public agencies for maintenance.

Zero-emission commercial lawn and garden equipment is now available

Technological constraints has historically limited the amount of zero-emission equipment available. However, market conditions suggest more zero-emission commercial lawn equipment are now available from a variety of vendors. Workshops are now taking place to incorporate commercial lawn equipment purchases into future CORE solicitations.[119] In addition to the anticipated future statewide CORE funds for zero-emission commercial lawn equipment, the District is also exploring additional funding opportunities to offer local funding for such equipment.[120]

Given that all future funding opportunities are still in development, the District will provide an update on the program's status in the next RAQS Revision.

Several local municipalities have also taken steps in recent years to ban the use of commercial gasoline-powered leaf blowers. Local organizations in San Diego County have also advocated for complete bans (or local ordinances) in all jurisdictions, while also committing to securing a trade-in or buy-back program prior to any ban taking effect.[121] Because local air districts are not considered land use agencies, air districts do not have the regulatory authority to issue bans (or local rules) governing such equipment, nor the ability to set emissions standards which stands with CARB. Instead, air districts statewide must pursue voluntary incentive programs to reduce such emissions.[122,123] The District is supportive of land use agencies in San Diego County pursuing local ordinances to ban gas-powered lawn equipment in the future, but done so in a way that does not hinder the ability to offer voluntary incentive funds to replace such equipment in the near future.

Portside Air Quality Improvement and Relief (PAIR) Program

In July 2020, the USS Bonhomme Richard naval vessel caught fire and burned for several days.[124] The fire produced smoke and fumes that affected all of San Diego County, but particularly exposed Portside community residents to higher than normal levels of PM and other criteria/toxic pollutants. The Portside community (as designated pursuant to Assembly Bill (AB) 617), is comprised of Barrio Logan, Logan Heights, Sherman Heights, and western National City. The community experiences disproportionate burdens from exposure to air pollution compared to most communities in California due to environmental, health, and socioeconomic factors. The Navy Ship fire further exposed air quality and health vulnerabilities within the Portside community, as most residents were not able to mitigate their exposure to degraded air quality conditions in the immediate area during the incident.

The PAIR Program provides residential indoor air monitors and residential air purifiers to residents of the Portside Community.

To address these concerns, the San Diego County Board of Supervisors allocated $550,000 in one-time funding from the County of San Diego General Fund to establish the District's PAIR Program. The goal of the program is to provide residential portable air purifiers (i.e., air filters) and indoor air monitors to residents within the Portside community, and to conduct monitoring and data analysis. Each eligible participant also received additional disposable filters to provide at least two years of continuous operation at no cost to participants, as well as a one-time monetary stipend to reimburse for potential electrical costs for running the new devices over a two-year period.

Also in 2021, the District entered into a Memorandum of Agreement (MOA) with the San

Diego Unified Port District ("Port District") to accept and appropriate $103,000 from the Port District for the PAIR Program. As part of the Port of District's Fiscal Year 2022 Annual Budget (adopted June 15, 2021), the Port District allocated $103,000 from the Maritime Industrial Impact Fund for the purchase of new air purifiers and air monitors for the Portside community. To avoid competing regional programs, the MOA called for the Port District to transfer the $103,000 to the District for the purpose of purchasing additional air purifiers or indoor air monitors for use in the PAIR Program. The Port District Board of Commissioners approved the transfer of funds and MOA on October 12, 2021. Additionally, the District finalized a settlement agreement with the Navy in September 2022 to allocate an additional $140,000 to the PAIR Program, or other air pollution reduction efforts in the Portside area at APCD's discretion.

By leveraging funding from multiple sources, the total investment allows the District to purchase approximately 575 residential air purifiers and approximately 575 indoor air monitors for the Portside community. Furthermore, a unified community program provides a single interface for interested applicants, thus helping to ensure the PAIR Program's success, and further cementing the strong interagency relationship between the Port and the District.

The District held competitive solicitations to procure new equipment vendors and select a program administrator (Environmental Health Coalition, or EHC) in 2021. EHC began taking PAIR applications in March 2022 and as of September 2022, has installed over 150 devices in the homes of Portside residents. Duties assigned to EHC include but are not limited to outreach and customer service, selection of participants, translation, case management, and technical support. Air quality data collection and monitoring will be conducted remotely for each device connected to the internet. Analysis of the data being collected will be conducted at a future date. The District will provide a more substantive update on program implementation in a future RAQS Revision.

Clean Cars 4 All

The Clean Cars 4 All program was established by the state legislature in 2017[125] to help lower-income California residents replace old, polluting passenger cars with cleaner, more fuel efficient vehicles. The program provides incentives for lower-income consumers living in and near under-resourced communities to scrap their old vehicles and purchase new/used hybrid, plug-in hybrid, or zero-emission replacement vehicles. Alternatively, participants can also choose an alternative mobility option, such as an electric bike or a transit pass voucher. Furthermore, Clean Cars 4 All incorporates an appropriate level of consumer protection and education to each applicant.

Clean Cars 4 All has been a successful program in other regions of California, such as Bay Area AQMD

To date, the program has been limited to residents living within the South Coast AQMD, San Joaquin Valley APCD, Sacramento Metropolitan AQMD, or Bay Area AQMD air district regions. However, on October 30, 2019, the San Diego County Air Pollution Control Board adopted a recommendation that the District apply for and accept funding from CARB to implement a local Clean Cars 4 All Program in San Diego County. In 2022, the District executed a grant agreement with CARB to receive $5 million for implementation of a San Diego Clean Cars 4 All program. The District is now in the process of program development, including recently conducting a competitive solicitation to select a program administrator on behalf of the District. The District anticipates the program opening to accept applications by the end of 2023. As such, the District will provide a more substantive update on program implementation in a future RAQS Revision.

Short-Haul Zero-Emission Truck Pilot Project

The Portside CERP adopted in 2021 pursuant to AB 617, included various strategies to reduce emissions in and around the community. One of these strategies (Action E1 of the CERP) is implementation of a Short-Haul Zero-Emission Truck Pilot Project ("Truck Pilot"). As envisioned, the Truck Pilot would be administered by the District and supported by the Port District, and aim to replace 20,000 truck trip miles currently accomplished with diesel-fueled trucks with trips using zero-emission vehicles. The cost of the zero-emission trucks would be offset with grant funding (i.e., CAPP funding) for interested partners doing business on Port tidelands. Among other eligibility requirements, applicants will need to provide documentation of existing trips to the Port of San Diego in order to qualify. The District received approval of the Project Plan from CARB in September 2022 to move ahead with the $4 million project, since it will support the Portside CERP, improve air quality in the Portside neighborhood, and is supported by community members. The Port of San Diego will assist the District in outreach for the program. The District will now be working towards opening the Truck Pilot in the near future. As such, the District will provide a more substantive update on program implementation in a future RAQS Revision.

Possible Future Incentive Opportunities

State law (AB 423) encourages the District to apply for state and federal incentive programs to continue reducing emissions. That said, staff resources do not allow for the District to apply for each and every grant made available. To address this, the District has summarized potential funding sources that may become available over the next three years at the state and federal level, and requests feedback on priority programs for the District to consider pursuing. Such feedback will be utilized by the District for long-term strategic planning of future incentive funding staffing needs and program implementation plans, should funding be awarded.

It should be noted that the following funding sources are not exhaustive, nor have they been evaluated to identify possible estimated emission reductions in San Diego County or under-resourced communities. The inclusion and/or mention of any possible incentive

programs is by no means an indication, nor a commitment, that the programs will be available or awarded to the District. It is possible, and likely, that additional incentive programs may become available during the next three-year period. As such, the District will evaluate applying for any potential opportunities in line with District and/or Governing Board priorities on an ad-hoc basis:

Greenhouse Gas Reduction Fund (GGRF)
California's CAP and Trade Expenditure Plan (otherwise known as the GGRF and/or California Climate Investments) is appropriated annually by the California Legislature via the annual state budget. Generally speaking, the Legislature has historically appropriated GGRF funding to projects/activities that reduce or sequester GHG emissions, or enhance the state's resiliency to climate change. The District already implements two GGRF-funded programs (Community Air Protection Program and FARMER) and will be implementing a third soon (Clean Cars 4 All). The District intends to continue implementation of each of these three programs, but may also explore other funding opportunities that may become available through GGRF in the future (depending on available staff resources available). Possible funding opportunities could include (but are not limited to), clean mobility options, sustainable transportation equipment, and additional heavy-duty demonstration pilot projects. Not all GGRF programs are available to the District to apply; in such cases, the District could serve as a technical advisor, and/or provide a Letter of Support upon request subject to the Air Pollution Control Officer and Governing Board discretion. Other programs that may become available may also be deemed by the District as not being feasible for the District to implement.

The California state budget has allocated billions of dollars in GGRF funds for new/existing programs in recent years

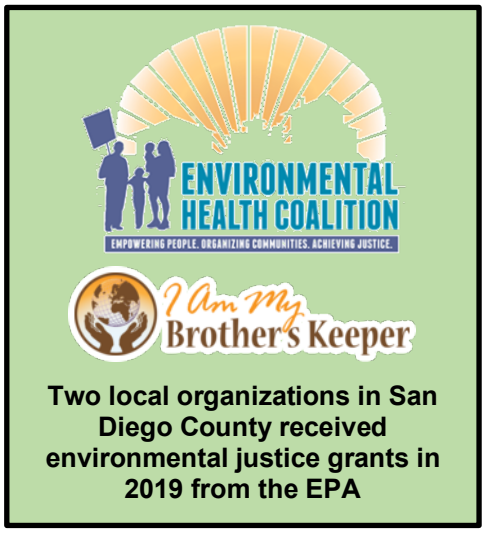
Non-GGRF Incentive Opportunities
CARB administers other non-GGRF funded programs for clean transportation projects. Such funds include the Carl Moyer program, which will continue to be implemented for the foreseeable future. However, other non-GGRF sources may become available in the future that the District could pursue. These include the Air Quality Improvement Program (AQIP), which is allocated on an annual basis by CARB based on program needs and goals. Typical projects typically funded in AQIP include demonstration, pre-commercial, and pilot emission reduction projects. The District received AQIP funding in previous years based upon staff resources and identification of project partners at those times.

Other potential non-GGRF funding program concepts include: CARB Supplemental Environmental Projects (SEPs), remediation funds from adoption/amendment of statewide mobile source regulations, future statewide

bond measures, and/or additional funding allocated to CARB by the state legislature. Though all such funding sources are speculative in nature, the District could potentially serve as an applicant, technical advisor, or provide a Letter of Support upon request (subject to Air Pollution Control Officer and Governing Board discretion). Other programs that may become available may also be deemed by the District as not being feasible for the District to implement.

EPA Incentive Opportunities

The EPA has historically administered a number of incentive programs, but none have been more prevalent than the Diesel Emission Reductions Act (DERA) program. Since 2005, the DERA program has allocated funds nationwide to reduce emissions from diesel powered vehicles and engines. In effect, the program acts similar to the state Carl Moyer program, in which old, polluting equipment is scrapped and replaced in favor of cleaner and low-emitting technology. DERA funding is typically subject to annual budget allocations at the national budget level; thus, program funding amounts have been volatile in recent years. The DERA program is highly competitive each year, making award of such funding difficult. However, the District is willing to listen to potential project opportunities, especially those projects that could administratively align well with other air district grant programs being administered.



Two local organizations in San Diego County received environmental justice grants in 2019 from the EPA

The EPA also has implemented an Environmental Justice Small Grants program since 1994 to support and empower communities working on solutions to local environmental and public health issues. The program is designed to help communities understand and address exposure to multiple environmental harms and risks and have historically funded projects up to $50,000. Example projects include local educational outreach on air pollution issues, as well as replacement or installation of home air filters and/or allergy prevention products. Program funding is contingent upon national budget allocations. Several local community-based organizations have received funding in this program in recent years for various purposes; government agencies are typically ineligible to apply. As such, the District's involvement in such a program in the future (if funded) could be in a supportive capacity, either as a technical advisor or providing a Letter of Support.

In August 2022, the 2022 Inflation Reduction Act (IRA) was also adopted at the federal level. This new legislation will provide over $450 billion in federal spending investments and tax expenditures to tackle climate change, promote domestic energy production, and reduce the price of health care. Of the $450 billion,

approximately $369 billion is directed towards climate and clean energy investments. These investments include tax credits to reduce GHGs from power stationary, mobile, and areawide sources of air pollution, as well as the manufacture of such products in North America, and direct funding for under-resourced communities. The EPA is tasked with administering most IRA funding over the next several years, but other federal agencies will also be involved. The District, as well as regional partners, will continue to monitor availability and possible opportunities to apply for IRA funding when available. The District's involvement in possible IRA funding opportunities could also be in a supportive role, either as a technical advisor or providing a Letter of Support.

Other Incentive Funding Concepts and Opportunities

The District is always looking at available grant opportunities through CARB and EPA, but also reviews opportunities that might become available through other state, local, or federal agencies. For example, the District recently executed a partnership with SANDAG and the California Energy Commission to develop the San Diego regional CALeVIP program to install public electric vehicle charging stations countywide. The District's participation, and level of involvement, in such opportunities are usually evaluated at the time they are presented. The District remains open to discussing and considering any available funding opportunity that may present itself in the next three years and beyond.

ATTACHMENT K

TRANSPORTATION CONTROL MEASURES

Implementation continues for the six Transportation Control Measures contained in previous RAQS Revisions, consistent with program commitments made in San Diego Forward: the 2021 Regional Plan and the 2023 Regional Transportation Improvement Program (RTIP) adopted and implemented by the San Diego Association of Governments (SANDAG). The six RAQS Transportation Control Measures are: (1) Transit Improvements; (2) Vanpools; (3) High Occupancy Vehicle (HOV) Lanes; (4) Park-and-Ride Facilities; (5) Bicycle Facilities; and (6) Traffic Signal Improvements. Together, these measures have reduced motor vehicle travel and emissions. Emission reductions from these measures are expected to continue in the next three years as funding remains available.

K.1 Transit Improvement and Expansion Program

The District's financial incentive programs have been utilized to fund the incremental cost of replacing diesel-fueled public transit buses with compressed natural gas (CNG) and hydrogen fuel cell electric transit buses. San Diego Metropolitan Transit System (MTS) retired all diesel transit buses in the County in 2021. As of September 2022, MTS has 13 electric buses, and North County Transit District (NCTD) had ordered six electric buses in their respective fleets. Both transit providers in the San Diego County region have chosen to adopt the alternative-fuel path of the CARB's Innovative Clean Transit Rule, and will continue to purchase electric and CNG buses exclusively in the future. Bus revenue miles[126] in San Diego County also increased 2% since Fiscal Year 2016 to 32.5 million miles in 2019. Further, rail transit services, including the San Diego Trolley[127], SPRINTER[128], and the COASTER Commuter Rail Service[129], all increased to over 10.9 million revenue car miles in 2019.

Regional transit operators are now purchasing clean, zero-emission buses

A three-year, part-time Transit Only Lane Demonstration Project began June 21, 2022, and allows for South Bay Rapid buses (Route 225), operated by specially trained drivers and equipped with innovative technology, to drive in select shoulders along I-805 and SR 94 between Downtown San Diego and National City during heavy traffic congestion. Bus on Shoulder (BOS) operations will be limited to weekdays from 5 to 9 a.m. in the northbound I-805 and westbound SR 94 directions, and from 3 to 7 p.m. only on the

eastbound SR 94 to southbound I-805 connector. Numerous safety precautions have been put into place for this pilot project and driving on shoulders is only permitted for South Bay Rapid buses during the three-year demonstration period, and emergency vehicles. South Bay Rapid buses are equipped with driver assistance technology necessary to alert drivers to any upcoming obstacles, law enforcement or emergency vehicles, or stalled/stopped vehicles in the shoulder. Both the South Bay Rapid fleet, and Caltrans ramp infrastructure have been upgraded to use Connected Vehicle radios and camera-based detection systems using machine learning to recognize South Bay Rapid buses. These sensors provide Transit Signal Priority (TSP) at ramp meters for South Bay Rapid vehicles traveling in the part-time Transit Only Lanes, with the cameras providing a redundant trigger, should any of the Connected Vehicle radios have an issue. In addition, bus operators have received specialized training on the technology used on the South Bay Rapid buses, helping them determine when traffic and roadway conditions are safe to enter the shoulder or re-enter the general-purpose lanes.

K.2 Vanpool Program

SANDAG operates a Regional Vanpool Program through the "iCommute" program[130]. Currently, there are 688 vanpools carrying 5,174 passengers were operating in the San Diego County region, a 4% decrease over 2016 levels. To grow the Vanpool Program, a vanpool marketing campaign launched in March 2019 and include social media, digital, outdoor, email and direct mail outreach to focus on federal and military employers and employees.

Vanpools offer a comfortable, cost-effective, and convenient way for groups of five or more people to get to work throughout the County

K.3 HOV Lanes

Currently, there are three freeways in the San Diego County region with HOV lanes: Interstate (I)-5 (San Diego Freeway), I-805 (Jacob Dekema Freeway), and I-15 (Escondido Freeway). The I-5 HOV lane extends from the I-5/I-805 junction to just south of Palomar Airport Road. The current configuration of the I-805 HOV lane is segmented between SR 52 and the I-5/I-805 junction (including full HOV direct access at Carroll Canyon Road), and between Palomar St to State Route (SR) 94 (including a direct access ramp at Palomar St). The segment between Palomar Airport Road and SR 78 is currently under construction. The I-15 Express Lanes extend from SR 163 to just south of SR 78. Direct access is available at the north and south ends, and Direct Access Ramps are available at Hale Avenue, Del Lago Boulevard, West Bernardo Drive, SR 56/Ted Williams Parkway, and Hillery Drive. Intermediate Access Points that provide direct access from

the main lanes to the Express Lanes are approximately every two to three miles. Vehicles with two or more occupants, buses, and motorcycles may use the I-15 Express Lanes for free, and solo drivers participating in the FasTrak® Program may use the Express Lanes for a per-trip toll. Finally, a buses-only northbound lane on SR 163, extending 0.4 miles from A Street in downtown San Diego to I-5, enables buses to bypass general purpose traffic when entering SR 163.

HOV lanes reduce single-passenger vehicle congestion. Similarly, BRT stations promote the use of high-capacity bus-based transit options along the freeway

Other HOV Lane improvements in the region include:

- **Metered Ramps.** HOV preferential lanes are provided at 181 (57%) of the 318 metered ramps on the region's freeways. The HOV preferential lanes do not bypass the meters but they do have a shorter queue, reducing travel time.
- **I-15 Express Lanes.** The region has committed $1.4 billion to the I-15 Express Lanes project to ease traffic congestion in the I-15 corridor from SR 163 to SR 78 in Escondido. Construction began in November 2003 with the middle segment being completed in 2009 and the north and final segment completed in 2012. The project includes four lanes with a moveable barrier in the median of I-15 to accommodate two to three lanes in the peak direction and one to two lanes in the opposite direction. The Express Lanes facility provides priority to HOVs such as carpools and vanpools, regular transit services, and a Bus Rapid Transit (BRT) System. Excess capacity in these lanes is "sold" to solo drivers for a fee, as is the case with the FasTrak® program. The Express Lanes are separated from the general purpose lanes by a barrier with access provided every two to three miles.
- **I-5 North Coast Express Lanes.** This project will be modeled after the I-15 Express Lanes project and will construct 27 miles of Express Lanes from La Jolla to Oceanside. The I-5 North Coast Express Lanes will feature multiple access points to/from the facility to the general purpose lanes and direct access ramps that connect local arterials directly to the Express Lanes facility. A number of project alternatives were studied as part of the environmental document that Caltrans developed. In August 2014, the California Coastal Commission approved the North Coast Corridor Public Works Plan. Construction on Phase 1 of the North Coast Corridor will begin in 2016 and will include new carpool lanes, two rail double tracking projects and a restoration of a coastal lagoon and hundreds of acres of sensitive habitat. The North Coast Corridor project will include double tracking of 97% of the San Diego segment of the LOSSAN corridor, bike and pedestrian paths, and habitat restoration, in addition to the Express Lanes.
- **Managed Lanes/HOV Network.** SANDAG's San Diego Forward: The Regional Plan (Regional Plan) has developed a robust Managed Lane (Express Lane)/HOV

network. Shared by highway and transit users, the Managed Lanes/HOV system will be expanded from the current 28 miles to include over 800 new miles through 2050. The Regional Plan includes:

- Four-lane Managed Lane facilities on I-5, I-15, and I-805, I-8, SR-78, with value pricing[131];
- Three-lane Managed Lane Facilities on SR 56, SR 52, SR 94 with value pricing;
- Two-lane Managed Lane facilities on SR 163, SR 54, SR 905, and SR 125 with value pricing;
- In addition to mainline Managed Lane improvements, the Plan includes direct HOV to HOV services as part of the Managed Lanes connectors network including at the I-5/I-805 merge, I-5/I-8 merge, I-15/I-8 merge, and I-805/I-8 merge, and at other 18 interchanges where major Managed Lanes facilities intersect.

K.4 Park-and-Ride Facilities

As of September 2022, there are 104 active Park-and-Ride lots in the region, with 16,246 spaces available. NCTD operates 18 lots with transit parking currently available at multiple COASTER and SPRINTER stations, with approximately 4,036 spaces. Caltrans operates 52 of the park and ride lots in region with 3,378 spaces. MTS operates 28 lots providing parking for transit riders at 28 Trolley stations and multiple Rapid stations, with approximately 7,430 spaces. SANDAG operate 6 lots providing parking for transit riders at 3 transit stations, with approximately 1,402 spaces.

Park & Ride lots are free, offer a place to meet a carpool or vanpool, and some lots also offer bike lockers or access to transit

K.5 Bicycle Facilities

Through the end of 2021, the bikeway system in San Diego County included 1,751 miles of bikeways in the San Diego County region, consisting of Class I (exclusive bicycle path separated from roadway), Class II (striped on-street bicycle lane), Class III (shared with motor vehicles) facilities, and Class IV (exclusive on-road bikeway vertically separated from roadway) facilities. In September 2013, the SANDAG Board of Directors approved a $200 million Regional Bike

Separated bikeways create a safer and more comfortable experience for people biking by physically separating them from vehicular traffic

Plan Early Action (EAP) Program that focuses on the region's highest priority bicycle corridors. As of Spring 2022, SANDAG built 23 miles of EAP Bikeways, 4.5 miles are in-construction, and 27 miles are in the final design phase. SANDAG also maintains a system of over 700 bike locker spaces available throughout 67 sites in the region at most Trolley stations, all COASTER stations, and select Park-and-Ride locations. Currently, 90% of these spaces are electronic and on-demand, and the additional 10% (mechanical) are set to be converted to electronic as well. Unlike conventional lockers assigned to a single user, the converted spaces are available any time they are not in use to anyone participating in the bike locker program.

K.6 Traffic Signal Improvements

Traffic flow improvements mostly consist of traffic signal improvements to reduce idling and associated emissions. All federally funded traffic signal projects selected with the federal transportation funding program (TEA-21) have been implemented (117 projects). The 2014 RTIP includes two state funded projects as well as 26 locally funded traffic signal improvements. These projects are also inclusive of the Regional Arterial Management System or RAMS program. This program includes the installation of the regional traffic signal management software and linking of the local agencies to a common system. The system was fully implemented in 2009 to over 2,600 traffic signals which represent approximately 70% of traffic signals in the San Diego region and are part of the RAMS program. SANDAG is assisting local agencies to administer and coordinate the implementation of the region wide traffic signal integration and arterial management systems projects.

Traffic signal improvements can improve traffic flow, improve safety, reduce intersection delays/emissions/ collisions, and adapt to changes in traffic

ATTACHMENT L

EMISSION OFFSETS
(NO NET INCREASE (NNI) DEMONSTRATION)

Amendments to New Source Review (NSR) Rules 20.1 through 20.4 were adopted on November 4, 1998, repealing state emission offset requirements as authorized by state law (Assembly Bill 3319, 1996 Statutes). Consequently, the 2022 RAQS includes a detailed reassessment and reaffirmation of the District's previous findings that state emission offset requirements are not necessary for San Diego County to achieve and maintain the state ozone standards by the earliest practicable date. This Attachment contains the detailed reassessment and reaffirmation—prepared pursuant to state law and CARB guidance—that state emission offset requirements (beyond current federal offset requirements in the New Source Review rules) are not necessary in San Diego County to attain and maintain state ambient air quality standards for ozone by the earliest practicable date. A related finding is also reaffirmed, that unbanked emission reductions from the voluntary shutdown of sources compensated for permitted emission increases from new or modified sources that may have otherwise triggered state offset requirements. Federal offset requirements are not affected by these findings and remain in effect.

L.1 Emission Offset Requirements

NSR Rules 20.1 through 20.4 were amended in 1998 to locally repeal state requirements for emission offsets,[132] as authorized by state law.[133] Offsets are emission reductions provided to mitigate emission increases from new or modified stationary sources. State offset requirements had applied to sources having the potential to emit 15 tons or more per year of NOx or VOC. The requirements were locally repealed following an evaluation of their minimal impact and a determination by the District and CARB that they were not needed to achieve state ambient air quality standards for ozone by the earliest practicable date. Other requirements of NSR rules remain in effect, including federal offset requirements.[134]

To qualify as offsets, the emission reductions must not otherwise be required by local, state, or federal mandates; that is, the emission reductions must be "surplus."[135] Qualifying emission reductions are approved and recorded by the District as "credits" in an offset register (also called a "bank"), and an emission reduction certificate is issued to the owner. These credits can later be withdrawn by their owner to satisfy an emission offset requirement, or sold or transferred to a new owner for this purpose. District Rules 26.0 through 26.10 (Emission Reduction Credits) govern this process.

In practice, emission reduction credits are difficult to generate, and are growing more difficult each year. Stringent District, state and federal requirements for stationary source

emission controls leave little opportunity for creating surplus emission reductions for use as offsets. Consequently, most banked emission reduction credits are derived from permanently curtailing or shutting down a permitted facility or equipment.[136] Such shutdowns and resulting air quality benefits routinely occur as a normal course of business activity, independent of offset requirements.[137] No additional air quality benefit is realized (beyond that which occurred at the time of the shutdown) when shutdown-related emission reductions are subsequently banked and used for offset purposes. Historically, more stringent state offset requirements essentially resulted in costly paper transfers of emission reduction credits from one company to another with no corresponding air quality benefit; thus the reasoning for the 1998 repeal of such requirements.

L.2 Required Findings for Repeal

To streamline regulatory processes and reduce costs without compromising air quality, state law was amended in 1996 (Assembly Bill 3319) to allow an air district to locally repeal more stringent state emission offset thresholds if the air district Board and CARB meet stringent health-protective requirements. However, before repealing any state emission offset threshold, the Board must review an estimate of emissions growth, if any, that is likely to occur as a result of the repeal, and make findings as described below. These findings must be confirmed by CARB and reconsidered when updating the RAQS.

L.2.1 All Feasible Control Measures

The Board must find that all feasible control measures for emission sources under District purview have been adopted or are scheduled for consideration of adoption. The 2022 RAQS addresses and satisfies this requirement. Consequently, it is not further addressed herein.

L.2.2 Transport Mitigation

The Board must find that more stringent state emission offset thresholds are not necessary to comply with the ozone transport mitigation requirements of state law. Transport mitigation requirements do not apply to San Diego County, which is not identified in state law as an upwind source of transported air pollution. Consequently, transport mitigation requirements are not further addressed herein.

L.2.3 Expeditious Ozone Attainment

The Board must find that state emission offset requirements are not necessary to attain and maintain state ambient air quality standards for ozone by the earliest practicable date. Pursuant to CARB Guidance,[138] a key criterion is ensuring that the repeal of state offset requirements does not significantly impact a projected trend of decreasing total ozone-precursor emissions in the region.[139] This requirement is the primary focus of the assessment herein. The related finding that unbanked emission reductions from shutdown of emitting facilities (the usual source of offsets) exceeded growth in emissions from new or modified major sources was also reconfirmed.

L.3 Tracking Requirements

CARB issued an Executive Order in 1998 specifying requirements for tracking and assessing emission increases associated with permitting actions that would have triggered state offset requirements were they still in place:[140]

L.3.1 Emission Increases from Affected New or Modified Sources

The District must determine the total annual and cumulative increases of VOC and NOx emissions associated with permitting actions that would have (or may have) triggered state offset requirements were they in place. This information is used to determine the quantity of offsets foregone as a result of the repeal of state offset requirements.

L.3.2 Emission Decreases from Shutdowns

The District must determine the annual and cumulative reductions of VOC and NOx emissions that resulted from permanent equipment shutdowns that have not been registered as emission reduction credits in the District credit bank. This information is used to determine the level of emission reductions that have continued to occur from shutdowns (following the repeal of state offset requirements), which historically are the primary source of emission offsets. To the extent shutdowns and associated emission benefits continue to occur, the potential air quality impact of the repeal is reduced or eliminated.

L.3.3 Details

The District must include tracking details, which comprise of: (1) the year in which the emission increase or decrease occurred; (2) the source of the emission increase or decrease; (3) the nature of the emission change (e.g., the equipment type, whether it is a new or modified source, whether it is a permanent shutdown); (4) the amount of emission increase or decrease in tons per year; (5) the pollutant type; (6) the amount of offsets, if any, provided pursuant to federal requirements; (7) any adjustments to unbanked shutdowns that would be necessary to qualify the associated reductions as offsets;[141] and (8) any other pertinent information agreed upon by the District and CARB as necessary to assess the impact of the repeal of state offset requirements.

L.4 Tracking Results

The District previously instituted tracking procedures to identify and compile the required data for assessing the impact of the repeal of state offset requirements. The tracking information for the assessment herein (shown in Tables L-1 through L-4) reflects the seven-year period of January 1, 2015, through December 31, 2021. Tracking information for earlier periods is reflected in the previous assessments conducted in 1998, 2001, 2004, 2009, and 2016. Due to database changes, 2007 through 2009 data could not be collected. However, the overall decreasing emissions trend indicates no significant impact due to the data gap.

L.4.1 Emission Increases from 10-Ton Sources

Table L-1 compares permitted emission increases from affected sources for which the District issued permits during the seven-year tracking period. The data reflects sources that are subject to state offset requirements and not existing federal offset requirements. The listed increases occurred at sources with actual aggregate post-project emissions exceeding 10 tons per year of either VOC or NOx. As with the previous assessments, the threshold of 10 tons per year was used as a conservative indicator of sources with a potential to emit 15 tons per year, which is the threshold that would have triggered state offset requirements were they still in place.[142]

L.4.2 Emission Decreases from Unbanked Shutdowns

Table L-2 lists unbanked actual emission reductions from permanent facility or equipment shutdowns, adjusted where necessary for eligibility as emission offsets. The list is not exhaustive, given that additional shutdowns and associated emission reductions likely occurred, particularly from smaller emission sources.[143] Regardless, as indicated in Table L-2, shutdowns and associated emission reductions continue to occur since the repeal of state offset requirements.

L.4.3 Net Emissions Differential

Table L-3 combines information from Table L-1 (permitted emission increases from all projects at sites at or above 10 tons per year) with information from Table L-2 (unbanked actual emission reductions) to show the resulting net emissions differential for each year during the 2015-2021 tracking period. Consistent with expectations, the repeal of state offset requirements has not resulted in an increase in VOC and NOx emissions.

The seven years examined (2015-2021) resulted in an annual average VOC emissions decrease of 16.6 tons per year. For all the years examined during the entire assessment period (1999-2021), the result was an annual average VOC emissions decrease of 18.1 tons per year. This net decrease resulted from unbanked actual emission reductions from shutdowns exceeding permitted emission increases from new sources, despite conservative assumptions. (As discussed previously, not all unbanked emission reductions from shutdowns were uncovered, and new sources affected by the repeal of state offset requirements were assumed to include sources with actual VOC emissions of between 10-15 tons per year, although many such sources would not have triggered state offset requirements.)

The average-annual net NOx emissions differential during the 2015-2021 tracking period was a NOx emissions decrease of 4.2 tons per year. The historical trend during the entire assessment (1999-2021) was an average-annual NOx emissions decrease of 4.9 tons per year. Further, not all unbanked emission reductions from shutdowns were uncovered, and affected new sources were conservatively assumed to include sources between 10-15 tons of NOx per year.

L.4.4 Bank of Emission Credits

Table L-4 is provided for informational purposes and pursuant to CARB guidelines to indicate the origin of emission reduction credits registered in the District's offset bank as of July 12, 2022. Previous trends hold—that is, permanent equipment or facility shutdowns remain the primary source of offsets rather than voluntary process or control technology improvements. Specifically, as indicated in Table L-4, 97.3% of NOx and 93.9% of VOC emission reduction credits registered in the offset bank as of July 12, 2022, were derived from shutdowns.

L.5 Required Comparisons

The CARB Executive Order also requires five specific comparisons addressing emission impacts of the repeal of state offset requirements and the air basin emission inventories. The comparisons are designed to help evaluate whether the predicted minimal impacts of the repeal, projected into the future, continue to be minimal given updated emission inventory and tracking data.

L.5.1 Current versus Previous Projections of Emission Impacts

Tables L-5 and L-6 provide updated projections of annual and cumulative VOC and NOx emission impacts, respectively, of the repeal of state offset requirements. The projections are compared with the modest emission increases conservatively projected in the District's 1998 assessment. Table L-5 shows a minor VOC increase in 2016, but all other years during the seven-year tracking period (2015-2021) show no increase. Similarly, Table L-6 shows a minor increase in 2015, but all other years during the seven-year tracking period (2015-2021) show no increase.

As shown in Table L-5, cumulative VOC impacts exceed the originally projected "expected-case" impacts during the seven-year tracking period (2015-2021), as well as in projected future years through 2040. However, the actual VOC impacts are far below originally projected "worst-case" impacts in any year through 2050. Table L-6 also demonstrates that the actual NOx impacts are also far below originally projected "worst-case" or "expected-case" impacts in all years through 2050.

L.5.2 Impacts as a Percentage of Annual Total Emissions

As shown in Table L-7, the VOC emissions impact of repealing state offset requirements was below 0.20% of total annual permitted VOC emissions during the 2015-2021 tracking period. During all years examined (1998-2050), the net VOC impacts fall within the range of 0.07% to 0.21%, a negligible impact. As shown in Table L-8, the cumulative NOx emissions impact of the repeal was below 0.11% of the total NOx inventory during the 2015-2021 tracking period. During all years examined (1998-2050), the net NOx impacts fall within the range of 0.01% to 0.17%, again, a negligible impact.

These results indicate the impacts of the repeal of state offset requirements continue to constitute a negligible percentage of the total emission inventory. The repeal does not significantly impact an existing trend of decreasing total regionwide emissions.

L.5.3 Impacts as a Percentage of Annual Stationary-Source Emissions

As shown in Table L-9, the cumulative impact of the repeal of state offset requirements was less than 0.81% of the total stationary-source VOC emissions inventories during the 2015-2021 tracking period. Given the projected future annual impact of zero VOC emissions and modest growth in stationary source emissions from 2030-2050, the cumulative percentage impact decreases from 2030 through 2050. As shown in Table L-10, the cumulative impact of the repeal of state offset requirements was less than 2.01% of the total stationary-source NOx emissions inventories during the 2015-2021 tracking period. Given the projected future annual impact of zero NOx emissions and modest growth in stationary source emissions from 2030-2050, the cumulative percentage impact decreases from 2030 through 2050. The cumulative impact of the repeal of State offset requirements results in a projected 2050 cumulative impact of 1.84% of the stationary-source NOx emissions inventory.

The projected future cumulative impact of the repeal of state offset requirements is expected to be a negligible percentage of the VOC and NOx stationary-source emissions inventories through 2050. Temporary emission increases could occur, but are not expected to constitute a significant percentage of the stationary-source inventory, nor significantly impact the projected trend of decreasing total emissions. Further, emission increases would be subject to federal offset requirements if specified emission thresholds are exceeded.

L.5.4 Current versus Previous Projections of Percentage Impacts

Tables L-11 and L-12 compare the originally projected worst-case and expected-case impacts of the repeal of state offset requirements (as identified in the 1998 assessment) with actual 1998-2021 data, and with an update of projected future-year impacts. The result captures the percent of total emissions. The projected future impacts for VOC and NOx in 2050 are less than the expected-case scenarios for both pollutants, and far less than each of worst-case scenarios for each pollutant.

Tables L-13 and L-14 compare original and updated projections of impacts of the repeal of state offset requirements expressed as a percentage of stationary-source inventories. The result captures the percent of stationary-source emissions. Although modest, projected VOC emission impacts through 2041 do slightly exceed the originally projected expected-case impacts, but from 2041-2050, projected VOC emission impacts are less than the expected and worst-case scenarios. Further, originally projected worst-case VOC emission impacts do not

materialize in all years examined. Similarly, projected cumulative NOx impacts fall far below the original expected-case and worst-case impacts in all years examined.

L.5.5 Current versus Previous Emissions Inventories and Projections

Tables L-15 and L-16 compare updated VOC and NOx emissions inventories and inventory projections with those used in the original 1998 demonstration. For both VOC and NOx, the most recent data provided by CARB indicate (1) mobile source emissions are projected to decrease compared to 1998 levels through 2050, (2) areawide source NOx emissions are projected to decrease while VOC emissions remain relatively level compared to 1998 levels through 2050, and (3) stationary source NOx emissions are projected to decrease while VOC emissions remain relatively level compared to 1998 levels through 2050. Also for both pollutants, the total inventory continues to reflect substantial future decreases in emissions, due primarily to anticipated reductions in mobile source emissions. Moreover, conclusions of the previous assessments hold true; though not expected, even sizable emission impacts of the repeal of state offset requirements would not significantly impact the trend of decreasing total emissions in the region.

L.6 Conclusion

As demonstrated in the preceding analysis prepared pursuant to state law and CARB guidance, permanent facility or equipment shutdowns have continued apace since the repeal of state offset requirements, providing substantial emission benefits. The repeal of state offset requirements has not significantly impacted the projected trend of decreasing total ozone-precursor emissions in San Diego County. Additionally, all feasible control measures under District purview have been adopted or are scheduled for consideration of adoption, and state emission offset requirements are not necessary to comply with the ozone transport mitigation requirements of state law. Therefore, pursuant to state law and CARB guidance, the District concludes that more stringent state emission offset requirements remain unnecessary in San Diego County to attain and maintain the state ambient air quality standards for ozone by the earliest practicable date.

Table L-1
Permanent Emission Increases and Offsets Provided From Sources with Actual Aggregate Post-Project Emissions Exceeding 10 Tons/Year of VOC or NOx
January 1, 2015 – December 31, 2021
(Tons/Year)[144]

Name	Application Description	VOC (TPY) Permitted Increase	NOx (TPY) Permitted Increase
General Dynamics NASSCO	Thermal oxidizer	0.04	0.33
City of San Diego Miramar Landfill	Emergency Generator	0.04	0.78
Qualcomm Inc	Emergency Generator	0.03	0.61
City of San Diego-Metropolitan Wastewater Dept	Emergency Generator	0.03	
Cabrillo Power LLC	Emergency Generator	1.19	0.00
Otay Landfill Inc	Emergency Generator	0.02	0.37
Sycamore Landfill Inc	Emergency Generator	0.22	5.86
San Diego State University	Emergency Generator		0.17
2015 Totals		**1.57**	**8.13**
City of San Diego - Public Utilities Department (Wastewater)	Emergency Generator	0.02	0.22
City of San Diego - Public Utilities Department (Wastewater)	Emergency Generator	0.02	0.22
Pio Pico	Energy Generation	19.40	
SDG&E Palomar Energy Center	Turbine	0.00	
San Diego State University	Emergency Generator	0.00	0.17
2016 Totals		**19.44**	**0.61**
Commander Navy Region SW	Emergency Generator	0.02	0.51
Commander Navy Region SW	Boiler	0.70	1.40
Commander Navy Region SW	Boiler	1.40	2.80
US Navy	Emergency Generator		0.07
2017 Totals		**2.12**	**4.78**
General Dynamics NASSCO	Abrasive Blasting & Plasma		5.16
SD Metro Pumping Station #2	Emergency Generator	6.20	
2018 Totals		**6.20**	**5.16**
The Sherwin-Williams Company	Paint Can Filling Line	8.15	
San Diego State University	Emergency Generator		0.08
CP Kelco	Turbine	0.05	
City of San Diego/Environmental Svc Dept/Miramar Landfill	Emergency Generator	0.01	0.30
2019 Totals		**8.21**	**0.38**
USMC MCAS Miramar	Emergency Generator	0.002	0.04
USMC MCAS Miramar	Emergency Generator	0.002	0.04
2020 Totals		**0.004**	**0.08**
Fleet Readiness Center Southwest	Oil Quench Tank	0.02	
Fleet Readiness Center Southwest	Degreaser	1.82	
Fleet Readiness Center Southwest	Degreaser	1.82	
USMC MCAS Miramar	Emergency Generator		0.01
City of San Diego/Environmental Svc Dept/Miramar Landfill	Landfill Gas Control System	0.61	
City of San Diego/Environmental Svc Dept/Miramar Landfill	Emergency Generator	0.01	0.28
2021 Totals		**4.28**	**0.28**
Seven Year Emission Increases		**41.82**	**19.42**

Table L-2
Unbanked Actual VOC and NOx Emission Reductions from Equipment and Facility Shutdowns
January 1, 2015 – December 31, 2021
(Tons/Year)[145]

Name	Equipment Description	VOC (TPY)	NOx(TPY)
24 Hour Fitness	Engine (Emergency)	0.0013	0.0255
Albertsons #6709	Engine (Emergency)	0.0005	0.0094
ARE-11025/11075 Roselle Street LLC	Engine (Emergency)	0.0025	0.0670
BioMed Realty Trust	Engine (Emergency)	0.0005	0.0067
Bixby Land Company	Engine (Emergency)	0.0016	0.0328
BMR-10835 Road to The Cure LLC	Engine (Emergency)	0.0004	0.0086
City of San Marcos	Engine (Emergency)	0.0038	0.0523
City of Vista Sanitation Division	Engine (Emergency)	0.0014	0.0289
Commander Navy Region SW	Engine (Emergency)	0.0009	0.0194
Commander Navy Region SW	Engine (Emergency)	0.0014	0.0285
Commander Navy Region SW	Engine (Emergency)	0.0023	0.0485
Commander Navy Region SW	Engine (Emergency)	0.0023	0.0485
Commander Navy Region SW	Engine (Emergency)	0.0023	0.0485
Commander Navy Region SW	Engine (Emergency)	0.0023	0.0485
Commander Navy Region SW	Engine (Emergency)	0.0023	0.0485
Coronado Shores Condominium Association #8	Engine (Emergency)	0.0010	0.0214
County of San Diego S. Bay Reg. Ctr.	Engine (Emergency)	0.0038	0.1022
EMD Biosciences Inc	Engine (Emergency)	0.0017	0.0356
EMD Biosciences Inc	Engine (Emergency)	0.0017	0.0356
Freeman Associates Investment Mgmt LLC	Engine (Emergency)	0.0004	0.0073
General Atomics	Engine (Emergency)	0.0031	0.0843
Hilton San Diego Resort	Engine (Emergency)	0.0004	0.0083
Hubbs Sea World Research Institute	Engine (Emergency)	0.0205	0.0122
Iris Molecular Diagnostics	Engine (Emergency)	0.0026	0.0709
Irvine Company LLC The	Engine (Emergency)	0.0013	0.0271
Leucadia Wastewater District	Engine (Emergency)	0.0035	0.0949
LPL Financial	Engine (Emergency)	0.0083	0.2245
Marine Corps Air Station	Engine (Emergency)	0.0040	0.0024
Marine Corps Air Station	Engine (Emergency)	0.0140	0.0083
Medtronic Abalation Frontiers, LLC	Engine (Emergency)	0.0006	0.0123
Mercury Tech Center LLC	Engine (Emergency)	0.0012	0.0162
Mercury Tech Center LLC	Engine (Emergency)	0.0019	0.0263
Mesa Verde Del Mar LP	Engine (Emergency)	0.0011	0.0157
NAPP SYSTEMS INC	Engine (Emergency)	0.0009	0.0194
Nextel of California Inc (DBA Sprint)	Engine (Emergency)	0.0002	0.0049
Nextel of California Inc (DBA Sprint)	Engine (Emergency)	0.0002	0.0049
Oracle America	Engine (Emergency)	0.0036	0.0493
Pacific Bell Telephone Co DBA AT&T California	Engine (Emergency)	0.0048	0.1307
Payco Specialties Inc	Engine (Emergency)	0.0009	0.0181
Qualcomm Inc	Engine (Emergency)	0.0077	0.1539
Qualcomm Inc	Engine (Emergency)	0.0077	0.1539
R E Badger Filtration Plant	Engine (Emergency)	0.0103	0.0061
San Diego Data Processing Corp	Engine (Emergency)	0.0025	0.0500
San Diego Gas & Electric - North Coast C&O	Engine (Emergency)	0.0005	0.0094
San Diego Gas & Electric-NorthEast C&O	Engine (Emergency)	0.0005	0.0094
San Elijo Joint Powers Authority San Elijo Hills	Engine (Emergency)	0.0007	0.0144
San Elijo Water Reclamation Authority	Engine (Emergency)	0.0029	0.0603
San Elijo Water Reclamation Authority	Engine (Emergency)	0.0034	0.0927

Name	Equipment Description	VOC (TPY)	NOx(TPY)
Scripps Health	Engine (Emergency)	0.0000	0.0000
Scripps Memorial Hospital	Engine (Emergency)	0.0004	0.0076
SD City Of Metro Wastewater Dept	Engine (Emergency)	0.0041	0.1117
SD City Of Metro Wastewater Dept	Engine (Emergency)	0.0041	0.1117
SD Co Of Las Colinas PR0072	Engine (Emergency)	0.0013	0.0278
SD Co Of Las Colinas PR0072	Engine (Emergency)	0.0023	0.0485
SDG&E	Engine (Emergency)	0.0023	0.0470
Sea World San Diego	Engine (Emergency)	0.0441	0.0263
Smart & Final #929	Engine (Emergency)	0.0038	0.0023
Smart & Final #933	Engine (Emergency)	0.0038	0.0023
Sony	Engine (Emergency)	0.0007	0.0080
Sprint	Engine (Emergency)	0.0002	0.0049
Sprint United Management Co	Engine (Emergency)	0.0004	0.0076
SunGard Availability Services LP	Engine (Emergency)	0.0050	0.1340
SYG Venture A General Partnership	Engine (Emergency)	0.0008	0.0111
Tierranet Inc.	Engine (Emergency)	0.0009	0.0174
TPD Del Dios LLC (Vista Del Lago)	Engine (Emergency)	0.0015	0.0304
UC San Diego Health System - Thornton	Engine (Emergency)	0.0073	0.1459
UC San Diego Health System - Thornton	Engine (Emergency)	0.0060	0.1626
UCSD	Engine (Emergency)	0.0007	0.0143
UCSD	Engine (Emergency)	0.0012	0.0257
USMC Base Public Utilities U11	Engine (Emergency)	0.0012	0.0251
USMC Base Public Utilities U23	Engine (Emergency)	0.0090	0.0054
USMC BASE PUBLIC UTILITIES U33	Engine (Emergency)	0.0005	0.0094
USMC Base Public Utilities U39	Engine (Emergency)	0.0005	0.0067
USMC MCAS Miramar	Engine (Emergency)	0.0005	0.0104
USMC MCAS Miramar	Engine (Emergency)	0.0009	0.0192
USN Air Station NORIS (2) Pub Wks	Engine (Emergency)	0.0005	0.0094
USN Submarine Base	Engine (Emergency)	0.0009	0.0192
Verizon Wireless (Padre Gold)	Engine (Emergency)	0.0005	0.0067
Ancon Marine Inc	Engine (Portable)	0.0000	0.0000
Best Way Tree Service	Engine (Portable)	0.0020	0.0397
City of Poway	Engine (Portable)	0.0008	0.0159
Ed Upchurch Tree Service	Engine (Portable)	0.0024	0.0470
Flatline Ready Mix Corp	Engine (Portable)	0.0033	0.0449
Hoser Concrete Pump	Engine (Portable)	0.0031	0.0432
Movie Manufacturing & Leasing Company, Inc.	Engine (Portable)	0.0010	0.0201
R W Little Co	Engine (Portable)	0.0116	0.1596
S. C. Valley Engineering, Inc.	Engine (Portable)	0.0016	0.0318
US Border Patrol	Engine (Portable)	0.0071	0.0978
US Border Patrol	Engine (Portable)	0.0071	0.0978
US Border Patrol	Engine (Portable)	0.0007	0.0139
Wessels & Ghianni Concrete Inc DBA Consolidated Pumping	Engine (Portable)	0.0030	0.0409
Alvarado Hospital	Boiler	0.0148	0.1348
Alvarado Hospital	Boiler	0.0148	0.1348
Angelica Textile Services	Boiler	0.0148	0.1348
Angelica Textiles	Boiler	0.0744	0.2682
CA ST University San Marcos	Boiler	0.0148	0.1348
Continental Maritime of SD	Boiler	0.0148	0.1348
Continental Maritime of SD	Boiler	0.0148	0.1348
General Atomics Aeronautical Sys Inc (GA-ASI)	Boiler	0.0148	0.1348
General Atomics Aeronautical Sys Inc (GA-ASI)	Boiler	0.0148	0.1348
General Atomics Aeronautical Sys Inc (GA-ASI)	Boiler	0.0148	0.1348
General Atomics Aeronautical Sys Inc (GA-ASI)	Boiler	0.0148	0.1348
General Atomics Aeronautical Sys Inc (GA-ASI)	Boiler	0.0148	0.1348

Name	Equipment Description	VOC (TPY)	NOx(TPY)
Mission Linen Supply	Boiler	0.0301	0.2036
Repipe California	Boiler	0.0148	0.1348
Richard J Donovan Correctional Facility	Boiler	0.1417	0.2874
Richard J Donovan Correctional Facility	Boiler	0.0148	0.1348
UC San Diego Health System - Thornton	Boiler	0.0148	0.1348
UC San Diego Health System - Thornton	Boiler	0.0148	0.1348
UC San Diego Health System-Thornton	Boiler	0.0148	0.1348
Agri Service Inc	Miscellaneous	0.0000	0.0000
Agri Service Inc	Miscellaneous	0.0000	0.0000
Arcadis US Inc	Miscellaneous	0.0000	0.0000
Circle K Stores Inc.	Miscellaneous	0.0000	0.0000
Cubic Corp	Miscellaneous	0.0000	0.0000
Edwards Ornamental Iron Inc	Miscellaneous	0.0000	0.0000
Escondido Energy Center LLC	Miscellaneous	0.0000	0.0000
Fallbrook Union Elementary School Dist	Miscellaneous	0.0000	0.0000
First Student Inc	Miscellaneous	0.0000	0.0000
Fleet Readiness Center Southwest	Miscellaneous	0.0000	0.0000
Frey Environmental Inc	Miscellaneous	0.0000	0.0000
FRS Environmental Inc	Miscellaneous	0.0000	0.0000
FRS Environmental Inc	Miscellaneous	0.0000	0.0000
GCE Industries Inc	Miscellaneous	0.0000	0.0000
General Atomics Aeronautical Sys Inc (GA-ASI)	Miscellaneous	0.0000	0.0000
Honeywell Inc	Miscellaneous	0.0000	0.0000
John Lenore & Co	Miscellaneous	0.0000	0.0000
King Concrete	Miscellaneous	0.0000	0.0000
L&T Precision Corporation	Miscellaneous	0.0000	0.0000
Lead Reclamation Services INC	Miscellaneous	0.0000	0.0000
Marine Corps Air Station	Miscellaneous	0.0032	0.0000
Marine Corps Air Station	Miscellaneous	0.0032	0.0000
Midas (Logan Quatro Inc)	Miscellaneous	0.0000	0.0000
National City Foundry	Miscellaneous	0.0014	0.0250
NCM Contracting Group LP	Miscellaneous	0.0000	0.0000
One Stop Aviation Inc	Miscellaneous	0.0000	0.0000
One Stop Aviation Inc	Miscellaneous	0.0000	0.0000
One Stop Aviation Inc	Miscellaneous	0.0000	0.0000
One Stop Aviation Inc	Miscellaneous	0.0000	0.0000
RCP Block & Brick Inc	Miscellaneous	0.0000	0.0000
Resource Environmental LLC	Miscellaneous	0.0000	0.0000
San Diego Gas & Electric	Miscellaneous	0.0000	0.0000
SDG&E Co	Miscellaneous	0.0000	0.0000
SDG&E Co	Miscellaneous	0.0000	0.0000
Senior Aerospace Ketema	Miscellaneous	0.0000	0.0000
Sierra Nevada Corp	Miscellaneous	0.0000	0.0000
Sierra Nevada Corp	Miscellaneous	0.0000	0.0000
Southern California Plating Co Inc	Miscellaneous	0.0000	0.0000
Southwest Airlines Co	Miscellaneous	0.0642	0.7440
Stantec Consulting	Miscellaneous	0.0000	0.0000
Strip Shop	Miscellaneous	0.5780	0.0000
Tesoro Refining & Marketing Co	Miscellaneous	0.0000	0.0000
Top Brass CO	Miscellaneous	0.0000	0.0000
TRC Solutions	Miscellaneous	0.0000	0.0000
USMC Base Public Utilities U21	Miscellaneous	0.0484	0.1920
Van Can Co	Miscellaneous	0.0000	0.0000
Zoological Society of San Diego	Miscellaneous	0.0000	0.0000
Zoological Society of San Diego	Miscellaneous	0.0000	0.0000

Name	Equipment Description	VOC (TPY)	NOx(TPY)
Zoological Society of San Diego	Miscellaneous	0.0000	0.0000
Zoological Society of San Diego	Miscellaneous	0.0000	0.0000
Zoological Society of San Diego	Miscellaneous	0.0000	0.0000
Zoological Society of San Diego	Miscellaneous	0.0000	0.0000
Zoological Society of San Diego	Miscellaneous	0.0000	0.0000
Zoological Society of San Diego	Miscellaneous	0.0000	0.0000
Zoological Society of San Diego	Miscellaneous	0.0000	0.0000
Zoological Society of San Diego	Miscellaneous	0.0000	0.0000
Zoological Society of San Diego	Miscellaneous	0.0000	0.0000
Zoological Society of San Diego	Miscellaneous	0.0000	0.0000
Zoological Society of San Diego	Miscellaneous	0.0000	0.0000
Zoological Society of San Diego	Miscellaneous	0.0000	0.0000
Zoological Society of San Diego	Miscellaneous	0.0000	0.0000
Zoological Society of San Diego	Miscellaneous	0.0000	0.0000
Zoological Society of San Diego	Miscellaneous	0.0000	0.0000
Auto Body Excellence Inc	Coating Line	0.3779	0.0000
Body Kraft	Coating Line	0.2055	0.0000
Camino Collision Center	Coating Line	0.9230	0.0000
Carl Burgers Dodge Chrysler Jeep World	Coating Line	1.0910	0.0000
Chromalloy, San Diego	Coating Line	0.0166	0.0000
Chula Vista Elementary School District	Coating Line	0.2555	0.0000
D.A.N. Finishing Inc	Coating Line	0.0000	0.0000
Dan Dresner Cabinetry Inc	Coating Line	0.0000	0.0000
Dave's Prestige Collision Service	Coating Line	0.9230	0.0000
DeAlba's	Coating Line	0.9230	0.0000
E&S Autoworks	Coating Line	0.9230	0.0000
Eddy Pump Corp	Coating Line	0.1644	0.0000
Edwards Ornamental Iron Inc	Coating Line	0.2555	0.0000
Fleet Painting	Coating Line	0.9230	0.0000
General Atomics Aeronautical Systems Inc	Coating Line	0.2555	0.0000
Golden State Graphics	Coating Line	0.9230	0.0000
Helmuts Fine Furniture Shop	Coating Line	0.0000	0.0000
Hunter Industries Inc	Coating Line	0.0000	0.0000
Int'l Marine & Ind Applicators LLC	Coating Line	0.5455	0.0000
Int'l Marine & Ind Applicators LLC	Coating Line	0.5455	0.0000
Int'l Marine & Ind Applicators LLC	Coating Line	0.5455	0.0000
Int'l Marine & Ind Applicators LLC	Coating Line	0.0000	0.0000
Johnson's Auto Body & Paint	Coating Line	0.6170	0.0000
Mission Valley Holdings LLC	Coating Line	2.9085	0.0000
Mission Valley Holdings LLC	Coating Line	1.1925	0.0000
Mission Valley Holdings LLC	Coating Line	1.1925	0.0000
Mission Valley Holdings LLC	Coating Line	1.1925	0.0000
Modspace	Coating Line	0.0000	0.0000
Neyenesch Printers	Coating Line	0.9230	0.0000
Neyenesch Printers	Coating Line	0.9230	0.0000
Olivias Autobody & Frame	Coating Line	0.3529	0.0000
Raytheon Technical Services Co LLC	Coating Line	0.1273	0.0000
Raytheon Technical Services Co LLC	Coating Line	0.1235	0.0000
Raytheon Technical Services Co LLC	Coating Line	0.0053	0.0000
Richard J Donovan Correctional Facility	Coating Line	0.0075	0.0000
Rush Press Inc	Coating Line	1.3540	0.0000
Rush Press Inc	Coating Line	0.8480	0.0000
Rush Press Inc	Coating Line	0.9230	0.0000
Rush Press Inc	Coating Line	0.1710	0.0000
RW Little/Ortiz-Allds Specialty Coatings	Coating Line	1.3865	0.0000

Name	Equipment Description	VOC (TPY)	NOx(TPY)
San Diego Cabinets & Upholstery	Coating Line	0.0000	0.0000
SCPC	Coating Line	0.2410	0.0000
SCPC	Coating Line	0.0028	0.0000
SMS Technologies	Coating Line	0.0000	0.0000
Symcoat Metal Processing	Coating Line	0.2965	0.0000
Tito Body Shop	Coating Line	0.9230	0.0000
TK Autoworks	Coating Line	0.1578	0.0000
Viking Auto Body	Coating Line	0.9230	0.0000
West Coast Body & Paint	Coating Line	0.9230	0.0000
	2015 Totals (tons)	**28.9866**	**7.6929**
Aero Vault Venture LP	Engine (Emergency)	0.0031	0.0838
American Tower Corp	Engine (Emergency)	0.0026	0.0535
American Tower Inc	Engine (Emergency)	0.0081	0.0048
American Tower Inc	Engine (Emergency)	0.0064	0.0038
American Tower Red Mtn Fallbrook 4472	Engine (Emergency)	0.0016	0.0328
Arena Pharmauceticals	Engine (Emergency)	0.0051	0.0031
BERGELECTRIC CORP	Engine (Emergency)	0.0007	0.0095
Bernardo Summit LLC	Engine (Emergency)	0.0013	0.0279
BMR-Sorrento West LLC	Engine (Emergency)	0.0020	0.0412
C & S Investments	Engine (Emergency)	0.0004	0.0081
Carvin Corp	Engine (Emergency)	0.0072	0.0043
City of San Diego - Public Utilities Dept (PUD)	Engine (Emergency)	0.0159	0.0094
City of San Diego Metro Wastewater Dept	Engine (Emergency)	0.0006	0.0131
City of San Diego Metro Wastewater Dept.	Engine (Emergency)	0.0005	0.0094
Commander Navy Region Southwest	Engine (Emergency)	0.0004	0.0072
Commander Navy Region SW	Engine (Emergency)	0.0024	0.0490
Commander Navy Region SW	Engine (Emergency)	0.0027	0.0549
Commander Navy Region SW	Engine (Emergency)	0.0006	0.0086
Commander Navy Region SW	Engine (Emergency)	0.0012	0.0249
Commander Navy Region SW	Engine (Emergency)	0.0026	0.0535
Commander Navy Region SW	Engine (Emergency)	0.0026	0.0535
Congregational Tower	Engine (Emergency)	0.0084	0.0050
Del Mar City of	Engine (Emergency)	0.0007	0.0143
Dept of Navy-Naval Base Point Loma (NBPL) Public Works Dept (PWD)	Engine (Emergency)	0.0007	0.0143
El Cajon Police Department	Engine (Emergency)	0.0007	0.0095
Encinitas City Of	Engine (Emergency)	0.0011	0.0237
Entropic	Engine (Emergency)	0.0013	0.0255
Escondido City Dept Of Public Works Utilities	Engine (Emergency)	0.0159	0.0095
Escondido Sand & Gravel	Engine (Emergency)	0.0027	0.0368
Escondido, City of - Water Treatment Plant	Engine (Emergency)	0.0144	0.0086
Evergreen Surgical Center, LLC	Engine (Emergency)	0.0005	0.0067
Federal Aviation Administration Lindberg	Engine (Emergency)	0.0037	0.0763
Fisher Wireless AT ATC#4466	Engine (Emergency)	0.0031	0.0018
Fredericka Manor Care Center	Engine (Emergency)	0.0005	0.0107
Haggen Opco South LLC dba #2206	Engine (Emergency)	0.0026	0.0015
Haggen Opco South LLC dba Haggen #2142	Engine (Emergency)	0.0045	0.0027
Haggen Opco South LLC dba Haggen #2186)	Engine (Emergency)	0.0038	0.0023
Haggen Opco South LLC dba Haggen #2190	Engine (Emergency)	0.0035	0.0021
Haggen Opco South LLC dba Haggen #2193	Engine (Emergency)	0.0031	0.0018
HCP University Center West LLC	Engine (Emergency)	0.0011	0.0221
I2B Networks Inc	Engine (Emergency)	0.0005	0.0098
Linde LLC	Engine (Emergency)	0.0101	0.0060
Marathon Equipment Leasing	Engine (Emergency)	0.0024	0.0506
Marine Corps Air Station	Engine (Emergency)	0.0144	0.0086
Metrome HOA	Engine (Emergency)	0.0034	0.0020

Name	Equipment Description	VOC (TPY)	NOx(TPY)
METROPOLITAN TRANSIT SYSTEM	Engine (Emergency)	0.0003	0.0065
Morgan Tower	Engine (Emergency)	0.0017	0.0342
Pacific Bell Telephone Co DBA AT&T California	Engine (Emergency)	0.0045	0.0391
PDG Carlsbad 46, Ltd c/o Diversified Property Group	Engine (Emergency)	0.0031	0.0427
PEI Asset Pool VIII, LLC	Engine (Emergency)	0.0009	0.0182
SCRIPPS RESEARCH INSTITUTE	Engine (Emergency)	0.0031	0.0712
SD City of Metro Wastewater Dept	Engine (Emergency)	0.0011	0.0234
SD Co of Gen Svcs PR4110	Engine (Emergency)	0.0011	0.0237
SD Co Of Sheriff Heliport PR2031	Engine (Emergency)	0.0005	0.0105
SDG&E	Engine (Emergency)	0.0005	0.0094
SirsiDynix EOS LLC	Engine (Emergency)	0.0010	0.0214
Southern California Edison	Engine (Emergency)	0.0276	0.7449
Southern California Edison	Engine (Emergency)	0.0276	0.7449
Sweetwater Authority Water District	Engine (Emergency)	0.0012	0.0257
Target Corporation T 296	Engine (Emergency)	0.0004	0.0087
The Home Depot	Engine (Emergency)	0.0011	0.0158
THE HOME DEPOT #0659	Engine (Emergency)	0.0015	0.0209
The Irvine Co	Engine (Emergency)	0.0022	0.0463
The Muller Co	Engine (Emergency)	0.0050	0.0030
USMC MCAS Miramar	Engine (Emergency)	0.0004	0.0076
USN Amphibious Base Coronado	Engine (Emergency)	0.0005	0.0094
USN NAV STA 1 SCE	Engine (Emergency)	0.0010	0.0214
USN Outlying Landing Field (NOLF)	Engine (Emergency)	0.0008	0.0157
Vallecitos Water District	Engine (Emergency)	0.0014	0.0285
Vallecitos Water District	Engine (Emergency)	0.0014	0.0285
Vons #2366	Engine (Emergency)	0.0031	0.0018
Zayo	Engine (Emergency)	0.0002	0.0043
Hanson Aggregates Pacific Southwest Inc	Engine (Emergency)	0.0041	0.0848
A-1 Concrete Pumping	Engine (Portable)	0.0033	0.0449
Bullet Concrete Pumping	Engine (Portable)	0.0032	0.0638
City of Chula Vista	Engine (Portable)	0.0023	0.0322
City of Poway	Engine (Portable)	0.0006	0.0127
City of Poway	Engine (Portable)	0.0008	0.0166
Del Mar City of Public Works Dept	Engine (Portable)	0.0008	0.0159
Hal Hays Construction Inc	Engine (Portable)	0.0072	0.1439
JCH Concrete Polishing	Engine (Portable)	0.0023	0.0462
Joseph Descans Tree Service	Engine (Portable)	0.0020	0.0402
Knock-Em-Out Inc.	Engine (Portable)	0.0000	0.0000
Lopez Concrete Pumping	Engine (Portable)	0.0020	0.0409
Noe Serna	Engine (Portable)	0.0020	0.0409
Precon Marine Inc	Engine (Portable)	0.0037	0.0080
S.C. Valley Engineering, Inc	Engine (Portable)	0.0072	0.0996
S.C. Valley Engineering, Inc	Engine (Portable)	0.0072	0.0996
Southbay Sand Blasting & Tank Cleaning Inc	Engine (Portable)	0.0085	0.1180
Streamline Concrete Pumping	Engine (Portable)	0.0032	0.0638
Yepez Concrete Pumping	Engine (Portable)	0.0018	0.0360
California Boiler Inc.	Boiler	0.0148	0.1348
General Atomics	Boiler	0.0148	0.1348
Gilead Sciences Inc	Boiler	0.0223	0.1006
Insituform Technologies Inc	Boiler	0.0148	0.1348
USN Amphibious Base 2 Pub Wks Ctr	Boiler	0.0893	0.6035
USN Amphibious Base 2 Pub Wks Ctr	Boiler	0.0893	0.6035
USN Hospital 2 PWC	Boiler	0.0740	0.5005
USN MCAS Miramar	Boiler	0.0148	0.1348
Agri Service Inc	Miscellaneous	0.0000	0.0000

Name	Equipment Description	VOC (TPY)	NOx(TPY)
Air Products & Chemicals Inc	Miscellaneous	0.0000	0.0000
B&D Ready Mix	Miscellaneous	0.0000	0.0000
Cabrillo Power I LLC	Miscellaneous	0.0007	0.0078
Cabrillo Power I LLC	Miscellaneous	0.0017	0.0193
Cabrillo Power II LLC- Kearny 1	Miscellaneous	0.0000	0.0000
Cabrillo Power II LLC-Kearny 2	Miscellaneous	0.0000	0.0000
Cabrillo Power II LLC-Kearny 2	Miscellaneous	0.0000	0.0000
Cabrillo Power II LLC-Kearny 2	Miscellaneous	0.0000	0.0000
Cabrillo Power II LLC-Kearny 2	Miscellaneous	0.0000	0.0000
Cabrillo Power II LLC-Kearny 2	Miscellaneous	0.0000	0.0000
Cabrillo Power II LLC-Kearny 2	Miscellaneous	0.0000	0.0000
Cardno ERI	Miscellaneous	0.0000	0.0000
Circle K Stores	Miscellaneous	0.0000	0.0000
City of Oceanside Public Works	Miscellaneous	0.0000	0.0000
City of Oceanside Public Works	Miscellaneous	0.0000	0.0000
ConocoPhillips	Miscellaneous	0.0000	0.0000
Continental Maritime of SD	Miscellaneous	0.0165	0.0000
Continental Maritime of SD	Miscellaneous	0.0165	0.0000
Cubic Corp	Miscellaneous	0.0000	0.0000
Department of Transportation	Miscellaneous	0.0000	0.0000
Diesel Pollution Solutions Inc	Miscellaneous	0.0000	0.0000
DNP Electronics America LLC	Miscellaneous	0.0000	0.0000
Drewelow Remediation Equipment Inc	Miscellaneous	0.0000	0.0000
Drewelow Remediation Inc	Miscellaneous	0.0000	0.0000
Ecology Auto Parts Inc	Miscellaneous	0.0000	0.0000
Express Auto Center	Miscellaneous	0.0000	0.0000
F E Trailers	Miscellaneous	0.0000	0.0000
Fleet Readiness Center Southwest	Miscellaneous	0.0000	0.0000
Fleet Readiness Center Southwest	Miscellaneous	0.0000	0.0000
Frazee Industries	Miscellaneous	0.0000	0.0000
Frazee Industries	Miscellaneous	0.0000	0.0000
Frazee Industries	Miscellaneous	0.0000	0.0000
Frazee Paint	Miscellaneous	0.0000	0.0000
Frey Environmental Inc	Miscellaneous	0.0000	0.0000
GE Osmonics	Miscellaneous	0.0000	0.0000
GE Osmonics	Miscellaneous	0.0000	0.0000
GE Osmonics	Miscellaneous	0.0000	0.0000
GKN Aerospace Chemtronics Inc	Miscellaneous	0.0000	0.0000
Hamilton Sundstrand Power Systems	Miscellaneous	0.0000	0.0000
Hamilton Sundstrand Power Systems	Miscellaneous	0.0000	0.0000
Hamilton Sundstrand Power Systems	Miscellaneous	0.0000	0.0000
Hamilton Sundstrand Power Systems	Miscellaneous	0.0000	0.0000
Hamilton Sundstrand Power Systems	Miscellaneous	0.0000	0.0000
Hamilton Sundstrand Power Systems	Miscellaneous	0.0000	0.0000
Hamilton Sundstrand Power Systems	Miscellaneous	0.0000	0.0000
Hamilton Sundstrand Power Systems	Miscellaneous	0.0000	0.0000
Hamilton Sundstrand Power Systems	Miscellaneous	0.0000	0.0000
Hamilton Sundstrand Power Systems	Miscellaneous	0.0000	0.0000
Hamilton Sundstrand Power Systems	Miscellaneous	0.0000	0.0000
Hamilton Sundstrand Power Systems	Miscellaneous	0.0000	0.0000
Hamilton Sundstrand Power Systems	Miscellaneous	0.0000	0.0000
Hamilton Sundstrand Power Systems	Miscellaneous	0.0000	0.0000
Hamilton Sundstrand Power Systems	Miscellaneous	0.0000	0.0000
Hamilton Sundstrand Power Systems	Miscellaneous	0.0000	0.0000
Hamilton Sundstrand Power Systems	Miscellaneous	0.0000	0.0000

Name	Equipment Description	VOC (TPY)	NOx(TPY)
Hamilton Sundstrand Power Systems	Miscellaneous	0.0000	0.0000
Hamilton Sundstrand Power Systems	Miscellaneous	0.0000	0.0000
Hamilton Sundstrand Power Systems	Miscellaneous	0.0000	0.0000
Hamilton Sundstrand Power Systems	Miscellaneous	0.0000	0.0000
Hamilton Sundstrand Power Systems	Miscellaneous	0.0000	0.0000
Hamilton Sundstrand Power Systems	Miscellaneous	0.0000	0.0000
Hamilton Sundstrand Power Systems	Miscellaneous	0.0000	0.0000
Hamilton Sundstrand Power Systems	Miscellaneous	0.0000	0.0000
Hewlett-Packard Co	Miscellaneous	0.0000	0.0000
Honeywell Inc	Miscellaneous	0.0000	0.0000
Honeywell Inc	Miscellaneous	0.0000	0.0000
Honeywell Inc	Miscellaneous	0.0000	0.0000
LEES AQUARIUM & PET PRODUCTS	Miscellaneous	0.0000	0.0000
Manson Construction Co	Miscellaneous	0.0000	0.0000
Maxima Racing Lubricants	Miscellaneous	0.0000	0.0000
Maxwell Technologies Inc	Miscellaneous	0.0000	0.0000
Maxwell Technologies Inc	Miscellaneous	0.0000	0.0000
Mission Valley Holdings LLC	Miscellaneous	0.0000	0.0000
Nate's Transmission Service	Miscellaneous	0.0000	0.0000
National Profiling & Recycling Inc	Miscellaneous	0.0000	0.0000
Nexon Corporation	Miscellaneous	0.0000	0.0000
NorthStar Demolition and Remediation LP	Miscellaneous	0.0000	0.0000
NorthStar Demolition and Remediation LP	Miscellaneous	0.0000	0.0000
Oceanside Unified School District	Miscellaneous	0.0000	0.0000
Pacira Pharmaceuticals Inc	Miscellaneous	0.0000	0.0000
Propulsion Controls Engineering	Miscellaneous	0.0000	0.0000
Quality Thermistor Inc	Miscellaneous	0.0000	0.0000
Rainbow Municipal Water District	Miscellaneous	0.0000	0.0000
Rancho Santa Fe Golf Club	Miscellaneous	0.0000	0.0000
Raul Mendoza Construction Inc	Miscellaneous	0.0000	0.0000
Rohr Inc, a UTC Aerospace Systems Company	Miscellaneous	0.0000	0.0000
Rohr Inc, a UTC Aerospace Systems Company	Miscellaneous	0.0033	0.0000
Rohr Inc, a UTC Aerospace Systems Company	Miscellaneous	0.0559	0.0000
Rohr Inc, a UTC Aerospace Systems Company	Miscellaneous	0.0034	0.0000
Rohr Inc, a UTC Aerospace Systems Company	Miscellaneous	0.0000	0.0000
Sander Jim CO	Miscellaneous	0.0000	0.0000
SDG&E Co Rainbow Compressor Station	Miscellaneous	0.0016	0.0416
SDG&E Co Rainbow Compressor Station	Miscellaneous	0.0011	0.0113
SDG&E Co Rainbow Compressor Station	Miscellaneous	0.0008	0.0077
SDG&E Co Rainbow Compressor Station	Miscellaneous	0.0002	0.0016
Sea World San Diego	Miscellaneous	0.0000	0.0000
Sea World San Diego	Miscellaneous	0.0000	0.0000
Sea World San Diego	Miscellaneous	0.0000	0.0000
Sea World San Diego	Miscellaneous	0.0000	0.0000
Sea World San Diego	Miscellaneous	0.0000	0.0000
Sea World San Diego	Miscellaneous	0.0000	0.0000
Sea World San Diego	Miscellaneous	0.0000	0.0000
Sea World San Diego	Miscellaneous	0.0000	0.0000
Sony Electronics Inc	Miscellaneous	0.0000	0.0000
Tatitlek Corp	Miscellaneous	0.0000	0.0000
Tesoro Refining & Marketing Co	Miscellaneous	0.0000	0.0000
Titleist & Foot Joy Worldwide	Miscellaneous	0.0000	0.0000
TRS Group Inc	Miscellaneous	0.0000	0.0000
Union Oil of Calif., c/o URS Corp	Miscellaneous	0.0000	0.0000
USMC Base Marine Facilities	Miscellaneous	0.0082	0.0153

Name	Equipment Description	VOC (TPY)	NOx(TPY)
USMC Recruit Depot	Miscellaneous	0.0019	0.0218
USN NAV Sta 2 Public Works Center	Miscellaneous	0.0000	0.0000
W/GL Via Esprillo Holdings VII LLC	Miscellaneous	0.0000	0.0000
W/GL Via Esprillo Holdings VII LLC	Miscellaneous	0.0000	0.0000
World Oil Co	Miscellaneous	0.0000	0.0000
Zoological Society of SD	Miscellaneous	0.0000	0.0000
A1 Plastic Cabinets Inc	Coating Line	0.0000	0.0000
Allseas Yachts	Coating Line	0.1644	0.0000
American Collision of Ramona	Coating Line	0.9230	0.0000
Anthony Lauren & Co, Inc	Coating Line	0.0000	0.0000
Caliber Collision Centers	Coating Line	0.9689	0.0000
Carvin Corp	Coating Line	0.0000	0.0000
Carvin Corp	Coating Line	0.0000	0.0000
Coachwerx LLC	Coating Line	0.9230	0.0000
Coles Custom Cabinets	Coating Line	0.0000	0.0000
Cubic Corp	Coating Line	0.0001	0.0000
Cubic Corp	Coating Line	0.0000	0.0000
Custom Interior Shutters	Coating Line	0.0000	0.0000
Custom Window Design	Coating Line	0.0000	0.0000
Davis Auto Body	Coating Line	0.6265	0.0000
Eskimo Radiator Service	Coating Line	0.0000	0.0000
GKN Aerospace Chemtronics Inc	Coating Line	0.2185	0.0000
Hesser Handcrafted	Coating Line	0.0000	0.0000
In Line Collision Specialists	Coating Line	0.9230	0.0000
Insituform Technologies Inc	Coating Line	0.0000	0.0000
LT Design Custom Plastic Laminating	Coating Line	0.0000	0.0000
MAACO Collision Repair & Auto Painting	Coating Line	2.5050	0.0000
Midway Jeep Chrysler Dodge Ram	Coating Line	0.9230	0.0000
Mission Valley Cabinets	Coating Line	0.0000	0.0000
Palomar Casework Inc	Coating Line	0.0000	0.0000
Partner Press LLC	Coating Line	0.5275	0.0000
Penny Saver USA Printing LLC	Coating Line	0.9230	0.0000
Penny Saver USA Printing LLC	Coating Line	0.9230	0.0000
Penny Saver USA Printing LLC	Coating Line	0.9230	0.0000
Penny Saver USA Printing LLC	Coating Line	0.9230	0.0000
Russ' Collision and Automotive Repair Center	Coating Line	0.9230	0.0000
SOS Metals San Diego LLC	Coating Line	0.2555	0.0000
Tecnico Corp	Coating Line	0.1644	0.0000
Town & Country Hotel	Coating Line	0.0000	0.0000
Tuff Acoustical & Thermal	Coating Line	0.0000	0.0000
United Auto Body	Coating Line	0.9230	0.0000
W/GL Via Esprillo Holdings VII LLC	Coating Line	0.0000	0.0000
West Coast Cabinetry	Coating Line	0.0000	0.0000
	2016 Totals (tons)	**15.4334**	**6.4179**
Amvets Thrift Store #16	Engine (Emergency)	0.0029	0.0017
ARE 3535/3565 General Atomics Ct LLC	Engine (Emergency)	0.0025	0.0527
ARE-SD Region No. 23, LLC.	Engine (Emergency)	0.0021	0.0435
Beech Street Inc.	Engine (Emergency)	0.0092	0.2110
Beech Street Inc.	Engine (Emergency)	0.0092	0.2110
BioMarin Pharmaceuticals	Engine (Emergency)	0.0000	0.0000
Borrego Water District	Engine (Emergency)	0.0038	0.0023
California Highway Patrol	Engine (Emergency)	0.0040	0.0024
Chamber Building, LP c/o Jamison Services, Inc.	Engine (Emergency)	0.0027	0.0535
City of Escondido - LS#11	Engine (Emergency)	0.0031	0.0018
City of Escondido - LS#9	Engine (Emergency)	0.0016	0.0335

Name	Equipment Description	VOC (TPY)	NOx(TPY)
City of San Diego Water Dept	Engine (Emergency)	0.0059	0.1591
City of SD Transportation & Storm Water Division	Engine (Emergency)	0.0021	0.0075
COLLINS BUSINESS PARK I	Engine (Emergency)	0.0012	0.0238
Commander Navy Region SW	Engine (Emergency)	0.0010	0.0194
Commander Navy Region SW	Engine (Emergency)	0.0008	0.0173
Commander Navy Region SW	Engine (Emergency)	0.0012	0.0249
Commander Navy Region SW	Engine (Emergency)	0.0015	0.0321
COUNTY OF SAN DIEGO (RCS)	Engine (Emergency)	0.0038	0.0023
Crestwood San Diego	Engine (Emergency)	0.0055	0.0033
CUSTOMS AND BORDER PROTECTION (CBP)	Engine (Emergency)	0.0041	0.0024
De Anza Ready Mix	Engine (Emergency)	0.0005	0.0097
Del Mar City of	Engine (Emergency)	0.0005	0.0100
Dexcom	Engine (Emergency)	0.0049	0.0985
Fallbrook Healthcare District	Engine (Emergency)	0.0049	0.1126
Federal Aviation Administration Lindberg	Engine (Emergency)	0.0002	0.0049
General Atomics Aeronautical Sys Inc (GA-ASI)	Engine (Emergency)	0.0062	0.1677
General Atomics Aeronautical Systems Inc	Engine (Emergency)	0.0038	0.0784
General Atomics ASI (GA-ASI)	Engine (Emergency)	0.0089	0.2405
General Atomics ASI (GA-ASI)	Engine (Emergency)	0.0089	0.2405
Hi-Favor Broadcasting LLC	Engine (Emergency)	0.0008	0.0164
HP Inc.	Engine (Emergency)	0.0006	0.0121
John Hancock Life Insurance Co.	Engine (Emergency)	0.0013	0.0262
Kaiser Foundation Hospital	Engine (Emergency)	0.0031	0.0849
Kaiser Foundation Hospital	Engine (Emergency)	0.0031	0.0849
Kaiser Foundation Hospital	Engine (Emergency)	0.0031	0.0849
Kaiser Foundation Hospital	Engine (Emergency)	0.0031	0.0849
Kyocera Communications	Engine (Emergency)	0.0031	0.0649
Loma Cabrillo LLC	Engine (Emergency)	0.0045	0.1228
Macy's	Engine (Emergency)	0.0009	0.0191
Macy's	Engine (Emergency)	0.0005	0.0098
MACYS #079	Engine (Emergency)	0.0007	0.0143
MACYS #158	Engine (Emergency)	0.0007	0.0143
MCI	Engine (Emergency)	0.0039	0.0810
Navy	Engine (Emergency)	0.0049	0.0988
Nordstrom	Engine (Emergency)	0.0004	0.0087
North County Dispatch JPA	Engine (Emergency)	0.0010	0.0214
Olivenhain Municipal Water District	Engine (Emergency)	0.0014	0.0285
Pacific Bell	Engine (Emergency)	0.0015	0.0201
Promise Hospital	Engine (Emergency)	0.0045	0.0027
Reynolds Communities	Engine (Emergency)	0.0024	0.0330
Richie's Concrete Pumping	Engine (Emergency)	0.0005	0.0074
SD CO OF DPW WASTEWATER MGMT	Engine (Emergency)	0.0006	0.0128
SD CO of Gen Svcs PR0086	Engine (Emergency)	0.0006	0.0114
SD CO of Gen Svcs PR0086	Engine (Emergency)	0.0006	0.0123
SD Co Regional Airport Authority	Engine (Emergency)	0.0005	0.0103
Sports Authority	Engine (Emergency)	0.0008	0.0160
SPORTS AUTHORITY	Engine (Emergency)	0.0010	0.0200
Sports Authority	Engine (Emergency)	0.0010	0.0200
SPORTS AUTHORITY - Escondido	Engine (Emergency)	0.0004	0.0080
SPORTS AUTHORITY THE	Engine (Emergency)	0.0009	0.0182
Station Venture Operations LP KNSD	Engine (Emergency)	0.0036	0.0493
Sweetwater Water Authority	Engine (Emergency)	0.0012	0.0257
Tachyon Networks Inc	Engine (Emergency)	0.0021	0.0425
Tandem Diabetes Care Inc	Engine (Emergency)	0.0024	0.0499
Tandem Diabetes Care Inc	Engine (Emergency)	0.0015	0.0201

Name	Equipment Description	VOC (TPY)	NOx(TPY)
The Irvine Company	Engine (Emergency)	0.0010	0.0207
Tower 180 Owner LLC	Engine (Emergency)	0.0009	0.0185
Tower 180 Owner LLC	Engine (Emergency)	0.0026	0.0542
US Border Patrol	Engine (Emergency)	0.0038	0.0023
US Border Patrol	Engine (Emergency)	0.0038	0.0023
US Border Patrol	Engine (Emergency)	0.0038	0.0023
US Border Patrol	Engine (Emergency)	0.0038	0.0023
US Border Patrol Sector Electronics	Engine (Emergency)	0.0083	0.0050
US Dept of Justice Fed Bureau of Prisons SDMCC	Engine (Emergency)	0.0138	0.0082
US General Services Administration	Engine (Emergency)	0.0074	0.1711
USMC Base Military Support	Engine (Emergency)	0.0019	0.0395
USMC Base Military Support	Engine (Emergency)	0.0042	0.0025
USMC Base Personnel Amenities P09	Engine (Emergency)	0.0007	0.0137
USMC Base Public Health H01	Engine (Emergency)	0.0007	0.0151
USMC Base Public Health H04	Engine (Emergency)	0.0011	0.0158
USMC Base Public Utilities Bldg 170831 U07	Engine (Emergency)	0.0020	0.0413
USMC Base Public Utilities U11	Engine (Emergency)	0.0023	0.0470
USMC Base Public Utilities U14	Engine (Emergency)	0.0005	0.0101
USMC Base Public Utilities U15	Engine (Emergency)	0.0023	0.0314
USMC Base Public Utilities U15	Engine (Emergency)	0.0023	0.0478
USMC Base Public Utilities U18	Engine (Emergency)	0.0020	0.0413
USMC Base Public Utilities U19	Engine (Emergency)	0.0014	0.0285
USMC Base Public Utilities U21	Engine (Emergency)	0.0033	0.0905
USMC MCAS Miramar	Engine (Emergency)	0.0022	0.0465
USN Amphibious Base 2 Pub Wks Ctr	Engine (Emergency)	0.0032	0.0854
USN Amphibious Base 2 Pub Wks Ctr	Engine (Emergency)	0.0010	0.0201
USN Amphibious Base Coronado	Engine (Emergency)	0.0007	0.0137
USN Amphibious Base Coronado	Engine (Emergency)	0.0018	0.0378
USN NAVCONBRIG Miramar	Engine (Emergency)	0.0037	0.0763
Verizon Wireless	Engine (Emergency)	0.0005	0.0097
Verizon Wireless	Engine (Emergency)	0.0007	0.0145
Vista Industrial LLC	Engine (Emergency)	0.0004	0.0072
ACE DuraFlo Systems LLC	Engine (Portable)	0.0024	0.0482
Action Contrete Pumping	Engine (Portable)	0.0025	0.0351
American Piledriving Equipment Inc	Engine (Portable)	0.0012	0.0238
American Piledriving Equipment Inc	Engine (Portable)	0.0031	0.0647
American Piledriving Equipment Inc	Engine (Portable)	0.0050	0.1027
American Piledriving Equipment Inc	Engine (Portable)	0.0103	0.2141
American Piledriving Equipment Inc	Engine (Portable)	0.0133	0.2754
Blaster Concrete Pumping	Engine (Portable)	0.0032	0.0638
Blaster Concrete Pumping	Engine (Portable)	0.0049	0.0679
Encinitas City of	Engine (Portable)	0.0007	0.0145
Fenceworks INC	Engine (Portable)	0.0019	0.0374
GA Concrete Pumping	Engine (Portable)	0.0024	0.0334
JD Concrete Pumping	Engine (Portable)	0.0019	0.0379
JMD Landscape Inc	Engine (Portable)	0.0047	0.1281
Leucadia Wastewater District	Engine (Portable)	0.0008	0.0163
Me Too Concrete Pumping	Engine (Portable)	0.0028	0.0391
Naval Coating Inc Zarcon	Engine (Portable)	0.0070	0.1401
Oceanside Water Utilities Dept	Engine (Portable)	0.0037	0.0766
Omega II Inc	Engine (Portable)	0.0020	0.0409
Otay Water District	Engine (Portable)	0.0006	0.0125
Otay Water District	Engine (Portable)	0.0020	0.0409
Otay Water District	Engine (Portable)	0.0044	0.0920
Otay Water District	Engine (Portable)	0.0044	0.0920

Name	Equipment Description	VOC (TPY)	NOx(TPY)
Pride Pumping	Engine (Portable)	0.0020	0.0409
Rancho Pauma Mutual Water Company	Engine (Portable)	0.0036	0.0495
Ruiz Tree Service	Engine (Portable)	0.0014	0.0270
San Dieguito Water District	Engine (Portable)	0.0042	0.0862
Santana's Concrete Pumping	Engine (Portable)	0.0017	0.0346
SD CO Of Water Authority	Engine (Portable)	0.0021	0.0420
Seaward Marine Services, Inc.	Engine (Portable)	0.0030	0.0605
Superior Ready Mix	Engine (Portable)	0.0041	0.1120
The HDD Company, Inc.	Engine (Portable)	0.0048	0.0963
The HDD Company, Inc.	Engine (Portable)	0.0048	0.0963
Thomas Cable Comm Inc	Engine (Portable)	0.0053	0.0736
Cabrillo Power I LLC	Boiler	0.0000	0.0000
County of San Diego S. Bay Reg. Ctr.	Boiler	0.0148	0.1348
County of San Diego S. Bay Reg. Ctr.	Boiler	0.0148	0.1348
Grossmont District Hospital	Boiler	0.0840	0.5676
Grossmont District Hospital	Boiler	0.0434	0.2934
WESTIN HOTEL	Boiler	0.0148	0.1348
Anytime Towing	Miscellaneous	0.0000	0.0000
ARE-SD Region, No 35, LLC	Miscellaneous	0.0000	0.0000
Cabrillo Power II LLC-El Cajon	Miscellaneous	0.0000	0.0000
Cabrillo Power II LLC-El Cajon	Miscellaneous	0.0000	0.0000
Cabrillo Power II LLC-Miramar GT	Miscellaneous	0.0000	0.0000
Cabrillo Power II LLC-Miramar GT	Miscellaneous	0.0000	0.0000
Cabrillo Power II LLC-Miramar GT	Miscellaneous	0.0000	0.0000
CB&I Federal Services	Miscellaneous	0.0034	0.0000
Chromalloy San Diego	Miscellaneous	0.0000	0.0000
Commander Navy Region SW	Miscellaneous	0.0326	0.0000
Fleet Readiness Center Southwest	Miscellaneous	0.0000	0.0000
Frazee Industries	Miscellaneous	0.0000	0.0000
Frazee Industries	Miscellaneous	0.0000	0.0000
Frazee Industries	Miscellaneous	0.0000	0.0000
Frazee Industries, The Sherwin-Williams Co.	Miscellaneous	0.0000	0.0000
Frazee Industries, The Sherwin-Williams Co.	Miscellaneous	0.0000	0.0000
FRS Environmental Inc	Miscellaneous	0.0000	0.0000
G & M Oil Co Inc	Miscellaneous	0.0000	0.0000
Green Tech Solutions, Inc. dba GTSE Group	Miscellaneous	0.0000	0.0000
Grossmont District Hospital	Miscellaneous	0.0000	0.0000
Grossmont District Hospital	Miscellaneous	0.0000	0.0000
Grossmont Union High School District	Miscellaneous	0.0000	0.0000
Hans US Petroleum & Service	Miscellaneous	0.0000	0.0000
Hanson Aggregates Pacific Southwest Inc	Miscellaneous	0.0000	0.0000
Hargrave Environmental Consulting Inc	Miscellaneous	0.0000	0.0000
Hargrave Environmental Consulting Inc	Miscellaneous	0.0000	0.0000
Hargrave Environmental Consulting Inc	Miscellaneous	0.0000	0.0000
Honeywell Inc	Miscellaneous	0.0000	0.0000
Illumina	Miscellaneous	0.0000	0.0000
Illumina	Miscellaneous	0.0000	0.0000
Illumina Inc	Miscellaneous	0.0000	0.0000
Janus Corporation	Miscellaneous	0.0000	0.0000
Janus Corporation	Miscellaneous	0.0000	0.0000
Janus Corporation	Miscellaneous	0.0000	0.0000
Janus Corporation	Miscellaneous	0.0000	0.0000
Kyocera International Inc	Miscellaneous	0.1610	0.0000
Little Car Shop	Miscellaneous	0.0000	0.0000
MADERAS COUNTRY CLUB LLC	Miscellaneous	0.0000	0.0000

Name	Equipment Description	VOC (TPY)	NOx(TPY)
MADERAS COUNTRY CLUB LLC	Miscellaneous	0.0000	0.0000
Marine Corps Air Station	Miscellaneous	0.3634	0.0000
Marine Corps Air Station	Miscellaneous	0.0000	0.0000
Mission Valley Shell	Miscellaneous	0.0000	0.0000
National Engineering Consulting Group	Miscellaneous	0.0000	0.0000
Pacific Executive Aviation	Miscellaneous	0.0000	0.0000
Padre Dam Municipal Water District	Miscellaneous	0.0000	0.0000
Phillips 66	Miscellaneous	0.0000	0.0000
RBC Turbine Components LLC	Miscellaneous	0.0000	0.0000
RCP Block & Brick Inc	Miscellaneous	0.0000	0.0000
Rohr Inc, a UTC Aerospace Systems Company	Miscellaneous	0.0000	0.0000
Rush Truck Center	Miscellaneous	0.0000	0.0000
Rush Truck Center	Miscellaneous	0.0000	0.0000
SAA Flight Training	Miscellaneous	0.0000	0.0000
SCS Engineers	Miscellaneous	0.0000	0.0000
Tesoro Refining & Marketing Co	Miscellaneous	0.0000	0.0000
Tesoro Refining & Marketing Co	Miscellaneous	0.0000	0.0000
The Road Runner Club	Miscellaneous	0.0000	0.0000
Thermal Management Solutions LLC	Miscellaneous	0.0000	0.0000
Thrifty Oil Co	Miscellaneous	0.0000	0.0000
USN Air Station NORIS (2) Pub Wks	Miscellaneous	0.0005	0.0349
USN Air Station NORIS (2) Pub Wks	Miscellaneous	0.0006	0.0428
Aldila Golf Company	Coating Line	2.4805	0.0000
Aldila Golf Company	Coating Line	0.2555	0.0000
Aldila Golf Company	Coating Line	0.0000	0.0000
Aldila Golf Company	Coating Line	0.0000	0.0000
Aldila Golf Company	Coating Line	0.0000	0.0000
Aldila Golf Company	Coating Line	0.0000	0.0000
Anderson Woodworks Inc	Coating Line	0.0000	0.0000
Cal Mil Plastics	Coating Line	0.0000	0.0000
Candys Auto Body	Coating Line	0.9230	0.0000
City Collision Center Inc	Coating Line	0.9230	0.0000
De Alba's Hwy 52 Collision Center	Coating Line	0.7545	0.0000
Dent Wizard-Kearney Mesa	Coating Line	0.9230	0.0000
Diamond Glassing	Coating Line	0.0000	0.0000
EagleBurgmann KE, Inc.	Coating Line	0.2555	0.0000
Eclipse Industries	Coating Line	0.2555	0.0000
El Cajon Auto Trim Ship Inc	Coating Line	0.0000	0.0000
Fryer Knowles Inc	Coating Line	0.1644	0.0000
Fryer Knowles Inc	Coating Line	0.0000	0.0000
FT Eng Inc	Coating Line	9.3595	0.0000
General Atomics	Coating Line	0.0035	0.0000
Golden State Graphics	Coating Line	0.9230	0.0000
Grossmont District Hospital	Coating Line	0.0001	0.0000
Hernandez Miguel Yacht Refinishing	Coating Line	0.0720	0.0000
Hyspan Precision Products Inc	Coating Line	0.2555	0.0000
Imperial Beach Autobody & Customs	Coating Line	0.9230	0.0000
Imperial Custom Cabinet Inc	Coating Line	0.0000	0.0000
Int'l Marine & Ind Applicators LLC	Coating Line	0.2555	0.0000
Jones Sign Co., Inc.	Coating Line	0.2555	0.0000
Lamme Kitchens	Coating Line	0.0000	0.0000
Light Stream	Coating Line	0.0000	0.0000
Marquez Auto Body	Coating Line	0.9085	0.0000
Master Care Body and Paint	Coating Line	2.1305	0.0000
Mavlyn Inc., DBA Rogers Auto Body	Coating Line	0.9230	0.0000

Name	Equipment Description	VOC (TPY)	NOx(TPY)
North Star Propellers Inc	Coating Line	1.5320	0.0000
Richard Tucker Painting	Coating Line	0.0000	0.0000
Rohr Inc, a UTC Aerospace Systems Company	Coating Line	0.3785	0.0000
Rohr Inc, a UTC Aerospace Systems Company	Coating Line	0.1892	0.0000
Rush Truck Center	Coating Line	0.2950	0.0000
S&T Auto Body & Paint	Coating Line	0.1735	0.0000
San Dieguito Publishers	Coating Line	0.9230	0.0000
San Dieguito Publishers	Coating Line	0.9230	0.0000
San Dieguito Publishers	Coating Line	0.9230	0.0000
San Dieguito Publishers	Coating Line	0.9230	0.0000
Sandmar Enterprises	Coating Line	0.0000	0.0000
Sector 9	Coating Line	0.0000	0.0000
Sound Image	Coating Line	0.0000	0.0000
South Bay Sand Blasting & Tank Cleaning Inc	Coating Line	0.5355	0.0000
South Coast Refinishing	Coating Line	0.9230	0.0000
Southland Envelope Co Inc	Coating Line	0.9230	0.0000
Southland Envelope Co Inc	Coating Line	0.9230	0.0000
	2017 Totals (tons)	**33.6238**	**7.9082**
9885 Carroll Canyon LLC	Engine (Emergency)	0.0002	0.0045
Aero Industrial LTD	Engine (Emergency)	0.0038	0.0530
Alvarado Hospital	Engine (Emergency)	0.0018	0.0382
AT&T Mobility San Onofre 14487	Engine (Emergency)	0.0006	0.0118
California Regional Intranet	Engine (Emergency)	0.0046	0.1064
California Regional Intranet	Engine (Emergency)	0.0037	0.0740
California Regional Intranet Inc	Engine (Emergency)	0.0032	0.0631
California Regional Intranet Inc	Engine (Emergency)	0.0021	0.0442
California Regional Intranet Inc	Engine (Emergency)	0.0032	0.0854
Childrens Hospital & Health Center	Engine (Emergency)	0.0020	0.0412
City Of Carlsbad Public Works	Engine (Emergency)	0.0009	0.0192
Coronado Shores #7	Engine (Emergency)	0.0010	0.0214
Cox Communications-Federal	Engine (Emergency)	0.0030	0.0595
D3 Technologies	Engine (Emergency)	0.0054	0.0032
Deer Springs Fire Protection District	Engine (Emergency)	0.0028	0.0017
Dulzura Community Development Committee	Engine (Emergency)	0.0002	0.0049
Imperial Beach City Of Public Works	Engine (Emergency)	0.0046	0.0028
Integrated Energy Technologies Inc	Engine (Emergency)	0.0086	0.0051
Kilroy Realty Corporation	Engine (Emergency)	0.0005	0.0098
Marine Corps Air Station	Engine (Emergency)	0.0042	0.0025
Mission Imprintables	Engine (Emergency)	0.0006	0.0089
MVUT 27 Owner LLC	Engine (Emergency)	0.0082	0.0049
New Cingular Wireless PCS LLC, dba AT&T Mobility	Engine (Emergency)	0.0050	0.0993
One Ten Investors, LLC.	Engine (Emergency)	0.0079	0.0047
Organogenesis	Engine (Emergency)	0.0031	0.0838
Poway Unified School District Park Village	Engine (Emergency)	0.0033	0.0020
Qualcomm Inc	Engine (Emergency)	0.0119	0.3212
Quality Circuit Assembly	Engine (Emergency)	0.0009	0.0181
Robert Premiere Partnership	Engine (Emergency)	0.0004	0.0091
Rohr Inc, a UTC Aerospace Systems Company	Engine (Emergency)	0.0038	0.0865
SD CO of Gen Svcs PR0086	Engine (Emergency)	0.0023	0.0470
SD State University	Engine (Emergency)	0.0068	0.0040
SDG&E Co Rainbow Compressor Station	Engine (Emergency)	0.0103	0.0061
Sears Roebuck & Co Unit #1438	Engine (Emergency)	0.0034	0.0020
Sears Roebuck & Co Unit #1648	Engine (Emergency)	0.0047	0.0028
Sharp Coronado Hospital & Healthcare Center	Engine (Emergency)	0.0031	0.0838
SPAWAR Systems Center Pacific	Engine (Emergency)	0.0039	0.0810

Name	Equipment Description	VOC (TPY)	NOx(TPY)
SPAWAR Systems Center Pacific	Engine (Emergency)	0.0011	0.0237
SPAWAR Systems Center Pacific	Engine (Emergency)	0.0038	0.0023
T.C. Construction Co., Inc./Western Oilfields Supply Co., Rain for Rent (Rental)	Engine (Emergency)	0.0005	0.0093
TARGET STORE T0303	Engine (Emergency)	0.0029	0.0017
Target Store T0304	Engine (Emergency)	0.0029	0.0017
The Park at Sixth	Engine (Emergency)	0.0003	0.0054
The Scripps Research Institute	Engine (Emergency)	0.0028	0.0570
UC San Diego Health System - Thornton	Engine (Emergency)	0.0003	0.0054
UCSD	Engine (Emergency)	0.0090	0.2064
USN Nav Sta 1 SCE	Engine (Emergency)	0.0031	0.0642
Verdezyne Inc	Engine (Emergency)	0.0038	0.0023
Verizon Wireless	Engine (Emergency)	0.0010	0.0214
Zimmer Dental	Engine (Emergency)	0.0005	0.0098
ACE DuraFlo Systems LLC	Engine (Portable)	0.0046	0.0633
American Piledriving Equipment Inc	Engine (Portable)	0.0133	0.2745
American Piledriving Equipment Inc	Engine (Portable)	0.0133	0.2754
Boart Longyear	Engine (Portable)	0.0068	0.1351
Brusco Tug & Barge, Inc.	Engine (Portable)	0.0022	0.0437
Brusco Tug & Barge, Inc.	Engine (Portable)	0.0022	0.0437
E.P. Concrete Pumping	Engine (Portable)	0.0024	0.0487
Freddies Tree Service	Engine (Portable)	0.0025	0.0499
Kerr Concrete Pumping	Engine (Portable)	0.0048	0.0656
Lew Davis Concrete Pumping	Engine (Portable)	0.0031	0.0426
Longs Directional Boring Inc	Engine (Portable)	0.0019	0.0388
Nova Group, Inc.	Engine (Portable)	0.0102	0.2115
Padre Dam Municipal Water District	Engine (Portable)	0.0062	0.0858
Pernicano's Concrete Pumping	Engine (Portable)	0.0027	0.0531
Perry Coast Construction Inc. DBA West Coast Construction	Engine (Portable)	0.0020	0.0409
ProLine Concrete Pumping	Engine (Portable)	0.0024	0.0487
SC Services, Inc	Engine (Portable)	0.0073	0.1451
SC Services, Inc	Engine (Portable)	0.0038	0.0763
So Cal CCS	Engine (Portable)	0.0014	0.0280
Sully Jones Roofing Company	Engine (Portable)	0.0009	0.0190
The Dutra Group	Engine (Portable)	0.0018	0.0037
Tim's Concrete Pumping	Engine (Portable)	0.0020	0.0409
Tim's Concrete Pumping	Engine (Portable)	0.0027	0.0535
Tim's Concrete Pumping	Engine (Portable)	0.0027	0.0535
APPLIED ENERGY	Boiler	0.0000	0.0000
Atlantic Power	Boiler	0.0000	0.0000
Atlantic Power	Boiler	0.0000	0.0000
Atlantic Power	Boiler	0.0000	0.0000
Atlantic Power	Boiler	0.0000	0.0000
ATLANTIC POWER	Boiler	0.0000	0.0000
Commander Navy Region SW	Boiler	0.0000	0.0000
Commander Navy Region SW	Boiler	0.0000	0.0000
Janssen Research & Development LLC	Boiler	0.0148	0.1348
Marriott La Jolla	Boiler	0.0148	0.1348
Applied Energy	Miscellaneous	0.0000	0.0000
Atlantic Power	Miscellaneous	0.0000	0.0000
ATLANTIC POWER	Miscellaneous	0.0000	0.0000
Ballast Point Brewing Co	Miscellaneous	0.0000	0.0000
Baron's Foreign Car Service, Inc	Miscellaneous	0.0000	0.0000
Bird Rock Coffee Roasters Inc	Miscellaneous	0.0000	0.0000
Bird Rock Coffee Roasters, Inc	Miscellaneous	0.0000	0.0000

Name	Equipment Description	VOC (TPY)	NOx(TPY)
Cabrillo Power II LLC-Kearny 2	Miscellaneous	0.0000	0.0000
Cabrillo Power II LLC-Kearny 2	Miscellaneous	0.0000	0.0000
Cabrillo Power II LLC-Kearny 2	Miscellaneous	0.0000	0.0000
Cabrillo Power II LLC-Kearny 2	Miscellaneous	0.0000	0.0000
Cabrillo Power II LLC-Kearny 2	Miscellaneous	0.0000	0.0000
Cabrillo Power II LLC-Kearny 2	Miscellaneous	0.0000	0.0000
California State Parks - Cuyamaca Rancho State Park	Miscellaneous	0.0000	0.0000
Carmel Mountain Ranch Country Club	Miscellaneous	0.0000	0.0000
Carvin Corp	Miscellaneous	0.8955	0.0000
Casper Concrete Cutting Co Inc	Miscellaneous	0.0000	0.0000
CB&I Federal Services	Miscellaneous	0.0181	0.0000
Center for Surgery Of No Coast L P	Miscellaneous	0.0000	0.0000
Commander Navy Region SW	Miscellaneous	0.0000	0.0000
Commander Navy Region SW	Miscellaneous	0.0000	0.0000
CVI Melles Griot	Miscellaneous	0.0000	0.0000
Diesel Pollution Solutions, Inc	Miscellaneous	0.0000	0.0000
Diesel Pollution Solutions, Inc	Miscellaneous	0.0000	0.0000
Electric Motor Specialists Inc	Miscellaneous	0.0000	0.0000
Enniss Inc	Miscellaneous	0.0000	0.0000
Enniss Inc	Miscellaneous	0.0000	0.0000
Fleet Readiness Center SW	Miscellaneous	0.0000	0.0000
Frey Environmental, Inc.	Miscellaneous	0.0000	0.0000
FRS Environmental Inc	Miscellaneous	0.0000	0.0000
FRS Environmental Inc	Miscellaneous	0.0000	0.0000
FRS Environmental Inc	Miscellaneous	0.0000	0.0000
FRS Environmental Inc	Miscellaneous	0.0000	0.0000
Innovative Environmental Solutions	Miscellaneous	0.0000	0.0000
Integrated Energy Technologies Inc	Miscellaneous	0.0000	0.0000
Interface Displays & Controls Inc	Miscellaneous	0.0000	0.0000
Interface Displays & Controls Inc	Miscellaneous	0.0000	0.0000
James A Markert Separate Property Trust	Miscellaneous	0.0000	0.0000
Judd Wire Inc	Miscellaneous	0.0000	0.0000
Kyocera International, Inc.	Miscellaneous	0.0000	0.0000
Liberty Oil	Miscellaneous	0.0000	0.0000
Los Turbos Transmission Inc	Miscellaneous	0.0000	0.0000
Lynco Services Inc.	Miscellaneous	0.0000	0.0000
MVUT 27 Owner LLC	Miscellaneous	0.0000	0.0000
North Countys House of Motorcycles	Miscellaneous	0.0000	0.0000
Omnitek	Miscellaneous	0.0000	0.0000
On The Spot Cleaners Inc	Miscellaneous	0.0000	0.0000
Pacira Pharmaceuticals Inc	Miscellaneous	0.0000	0.0000
Remec Broadband Wireless, LLC	Miscellaneous	0.0000	0.0000
Resource Environmental LLC	Miscellaneous	0.0000	0.0000
Robertsons Ready Mix	Miscellaneous	0.0234	1.5003
Robertsons Ready Mix	Miscellaneous	0.0555	1.2020
Rohr Inc, a UTC Aerospace Systems Company	Miscellaneous	0.0000	0.0000
Rohr Inc, a UTC Aerospace Systems Company	Miscellaneous	0.0000	0.0000
Rohr Inc, a UTC Aerospace Systems Company	Miscellaneous	0.0000	0.0000
San Diego Veterans Medical Center	Miscellaneous	0.0017	0.0000
San Marcos Carwash	Miscellaneous	0.0000	0.0000
Solar Turbines Inc	Miscellaneous	1.3595	0.0000
Solar Turbines Inc	Miscellaneous	0.3035	0.0000
Sweetwater Water Authority	Miscellaneous	0.0000	0.0000
The RF2 Group LLC	Miscellaneous	0.0000	0.0000
Thrifty Oil Company	Miscellaneous	0.0000	0.0000

Name	Equipment Description	VOC (TPY)	NOx(TPY)
Urban Development Corp	Miscellaneous	0.0000	0.0000
USN Air Station NORIS (2) Pub Wks	Miscellaneous	0.0005	0.0360
USN Air Station NORIS (2) Pub Wks	Miscellaneous	0.0008	0.0560
Vanguard Space Technologies	Miscellaneous	0.0000	0.0000
Zimmer Dental	Miscellaneous	0.0000	0.0000
A1 Autobody & Paint	Coating Line	0.9230	0.0000
ARTIMEX IRON	Coating Line	0.1010	0.0000
Auto Paint for Less	Coating Line	3.8733	0.0000
BAE Systems Land & Armaments LP	Coating Line	0.0000	0.0000
California Body & Paint	Coating Line	0.9230	0.0000
Carvin Corp	Coating Line	0.0000	0.0000
Century Design Inc	Coating Line	0.2555	0.0000
CFFW Inc DBA: Icon Woodworking	Coating Line	0.0000	0.0000
Cleavenger Jeff Industries	Coating Line	0.2555	0.0000
Compucraft Ind Inc	Coating Line	0.2555	0.0000
Cubic Corp	Coating Line	0.0366	0.0188
Cubic Corp	Coating Line	0.0216	0.0000
De Alba's El Cajon Collision	Coating Line	0.9630	0.0000
Deluxe Autobody	Coating Line	0.1588	0.0000
Exclusive Autobody Repair	Coating Line	0.1125	0.0000
Extra Container Corp	Coating Line	0.9230	0.0000
Fix Auto Downtown San Diego, Inc.	Coating Line	0.9230	0.0000
Flexider USA	Coating Line	0.2555	0.0000
Hobie Cat Co	Coating Line	0.0000	0.0000
Hunter Industries Inc	Coating Line	0.0000	0.0000
Interface Displays & Controls Inc	Coating Line	0.0000	0.0000
John Palmer Painting Inc	Coating Line	0.0000	0.0000
Miramar Truck Center	Coating Line	1.9375	0.0000
Paige Floor Covering Specialists	Coating Line	0.1644	0.0000
R&F Products	Coating Line	0.6415	0.0000
RR Donnelley	Coating Line	0.9230	0.0000
RR Donnelley	Coating Line	0.9230	0.0000
RR Donnelley	Coating Line	0.9230	0.0000
RR Donnelley	Coating Line	0.9230	0.0000
RR Donnelley	Coating Line	0.9230	0.0000
Salvador Auto Body & Repair	Coating Line	0.9230	0.0000
Sports & Classics Auto Body & Paint	Coating Line	1.1618	0.0000
Unicel Corp	Coating Line	0.2490	0.0000
US Coast Guard	Coating Line	0.1644	0.0000
Vanguard Space Technologies	Coating Line	0.2555	0.0000
Velvet Touch	Coating Line	0.9230	0.0000
Vision Systems Inc	Coating Line	10.3165	0.6075
Weldrite Manufacturing	Coating Line	1.7755	0.0000
Weldrite Manufacturing	Coating Line	1.5900	0.0000
Weldrite Manufacturing	Coating Line	0.6415	0.0000
Westair Gases & Equipment Inc	Coating Line	0.2555	0.0000
Willys Auto Body	Coating Line	0.9230	0.0000
	2018 Totals (tons)	**39.4776**	**7.5597**
Smart & Final #933	Engine (Emergency)	0.0038	0.0023
Nitto Denko Technical Corp	Engine (Emergency)	0.0009	0.0174
Cox Communications-El Cajon MTC	Engine (Emergency)	0.0031	0.0610
Southern California Edison	Engine (Emergency)	0.0016	0.0329
Illumina Inc	Engine (Emergency)	0.0010	0.0191
North County Fire Protection District	Engine (Emergency)	0.0054	0.0032
Ramada by Wyndham San Diego South	Engine (Emergency)	0.0019	0.0395

Name	Equipment Description	VOC (TPY)	NOx(TPY)
Genoptix	Engine (Emergency)	0.0004	0.0081
Genoptix	Engine (Emergency)	0.0009	0.0174
Mountain Empire Unified School District	Engine (Emergency)	0.0032	0.0727
EF International Language	Engine (Emergency)	0.0008	0.0159
Inovio	Engine (Emergency)	0.0003	0.0065
ARE-SD Region No. 19 LLC	Engine (Emergency)	0.0045	0.1026
Orchard Supply Hardware	Engine (Emergency)	0.0003	0.0054
U S General Services Administration	Engine (Emergency)	0.0003	0.0060
Applied Energy LLC MCRD	Engine (Emergency)	0.0011	0.0157
Atlantic Power	Engine (Emergency)	0.0011	0.0235
Applied Energy North Island	Engine (Emergency)	0.0011	0.0235
Installer Edge	Engine (Emergency)	0.0003	0.0055
1310 K Street Apartments Investors LLC	Engine (Emergency)	0.0025	0.0499
BMR-Axiom LP	Engine (Emergency)	0.0066	0.1513
Scripps Hospice	Engine (Emergency)	0.0031	0.0640
San Diego Zoo Global	Engine (Emergency)	0.0004	0.0081
USN Outlying Landing Field (NOLF)	Engine (Emergency)	0.0005	0.0094
Toys R Us	Engine (Emergency)	0.0042	0.0025
Toys R Us	Engine (Emergency)	0.0042	0.0025
US Dept of Justice Fed Bureau of Prisons SDMCC	Engine (Emergency)	0.0014	0.0283
Toys R Us	Engine (Emergency)	0.0042	0.0025
Sempra Energy	Engine (Emergency)	0.0061	0.1409
County Courthouse JCC #37-A1	Engine (Emergency)	0.0037	0.0776
Oracle America	Engine (Emergency)	0.0031	0.0712
Sprint United Management Co	Engine (Emergency)	0.0039	0.0023
Sempra Energy	Engine (Emergency)	0.0061	0.1409
Sempra Energy	Engine (Emergency)	0.0061	0.1409
COUNTY OF SAN DIEGO (RCS)	Engine (Emergency)	0.0046	0.0027
US Navy Regional Plant	Engine (Emergency)	0.0014	0.0190
USMC Base Navy Sea Ops	Engine (Emergency)	0.0113	0.0067
The Home Depot	Engine (Emergency)	0.0007	0.0097
Pacira Pharmaceuticals Inc	Engine (Emergency)	0.0086	0.0051
Tower 180 Owner LLC	Engine (Emergency)	0.0003	0.0063
Sprint Communications	Engine (Emergency)	0.0004	0.0076
Kaiser Foundation Health Plan	Engine (Emergency)	0.0032	0.0663
Aimloan.com	Engine (Emergency)	0.0016	0.0219
VERIZON WIRELESS	Engine (Emergency)	0.0005	0.0067
Smart & Final #935	Engine (Emergency)	0.0038	0.0023
IRVINE CO LA JOLLA RESERVE	Engine (Emergency)	0.0009	0.0127
Tower 180 Owner LLC	Engine (Emergency)	0.0009	0.0174
EWE Capital LLC	Engine (Emergency)	0.0034	0.0466
Providence 9431 Dowdy Drive, LLC	Engine (Emergency)	0.0025	0.0500
Cabrillo Power LLC	Engine (Emergency)	0.0011	0.0222
USMC MCAS Miramar	Engine (Emergency)	0.0007	0.0145
Naval Information Warfare Center Pacific	Engine (Emergency)	0.0042	0.0025
UCSD	Engine (Emergency)	0.0007	0.0097
UCSD	Engine (Emergency)	0.0015	0.0201
UCSD	Engine (Emergency)	0.0008	0.0157
UCSD	Engine (Emergency)	0.0051	0.0031
UCSD	Engine (Emergency)	0.0033	0.0020
Charter Communications	Engine (Emergency)	0.0026	0.0361
Carinet Inc	Engine (Emergency)	0.0032	0.0631
California Regional Intranet Inc	Engine (Emergency)	0.0025	0.0527
Cubic Corp	Boiler	0.0436	0.1348
Mission Linen Supply	Boiler	0.0266	0.1497

Name	Equipment Description	VOC (TPY)	NOx(TPY)
County Courthouse JCC #37-A1	Boiler	0.0248	0.1348
County Courthouse JCC #37-A1	Boiler	0.0248	0.1348
Callaway Golf Co	Boiler	0.0361	0.2036
SD Co Of Fac Svcs Div PR0350	Boiler	0.0213	0.1348
SD Co Of Fac Svcs Div PR0350	Boiler	0.0213	0.1348
Janssen Research & Development LLC	Boiler	0.0230	0.1401
Classical Interiors DBA Signature Furniture Rentals	Coating Line	0.0000	0.0000
CNP Signs & Graphics	Coating Line	0.6415	0.0000
CNP Signs & Graphics	Coating Line	0.6415	0.0000
CNP Signs & Graphics	Coating Line	0.6415	0.0000
CNP Signs & Graphics	Coating Line	0.6415	0.0000
CNP Signs & Graphics	Coating Line	0.6415	0.0000
Golden State Graphics	Coating Line	0.1616	0.0000
Golden State Graphics	Coating Line	0.1616	0.0000
Alturdyne Power Systems LLC	Coating Line	0.6415	0.0000
Euro Timbers Design LLC	Coating Line	0.0000	0.0000
Hotel Del Coronado	Coating Line	0.2555	0.0000
CABINETRY DESIGN	Coating Line	0.0000	0.0000
Rancho Chrysler Jeep Dodge	Coating Line	0.9230	0.0000
Rancho Chrysler Jeep Dodge	Coating Line	0.9230	0.0000
J&M AUTO BODY INC	Coating Line	0.9230	0.0000
Zodiac Pool Care Inc	Coating Line	0.0146	0.0000
Cabrillo Power LLC	Coating Line	0.1644	0.0000
Cabrillo Power LLC	Coating Line	0.2555	0.0000
SDG&E Co	Coating Line	0.2555	0.0000
Dave's Woodworking	Coating Line	0.0000	0.0000
McCallum Surfboards	Coating Line	0.0000	0.0000
DESIGN INC	Coating Line	0.0000	0.0000
Bussey's Automotive Service Inc	Coating Line	0.9230	0.0000
Jeld Wen	Coating Line	0.0000	0.0000
San Diego Freightliner	Coating Line	0.9230	0.0000
Milspray LLC	Coating Line	0.2555	0.0000
Milspray Military Technologies	Coating Line	0.9230	0.0000
Xtracta Distribution LLC	Coating Line	0.9230	0.0000
Vista Industrial Products Inc	Coating Line	0.2555	0.0000
RAMIREZ B A & SONS ORNAMNTL IRN WKS	Coating Line	0.2555	0.0000
Trim Co	Coating Line	0.2555	0.0000
Versatile Champions/Elite Auto Collision	Coating Line	0.9230	0.0000
ACUSHNET COMPANY	Coating Line	0.6415	0.0000
Cobham Advanced Electronic Solutions Inc.	Coating Line	0.2555	0.0000
Sanders Composites Inc	Coating Line	0.0000	0.0000
Sanders Composites Inc	Coating Line	0.2555	0.0000
Sanders Composites Inc	Coating Line	0.6415	0.0000
A G Collision Center	Coating Line	0.9230	0.0000
Sanders Composites Inc	Coating Line	0.0146	0.0000
	2019 Totals (tons)	**16.6347**	**3.0609**
Sunroad Centrum Apartments 45, LP	Engine (Emergency)	0.0004	0.0082
SNH Medical Office Properties Trust	Engine (Emergency)	0.0017	0.0238
BLT Enterprises	Engine (Emergency)	0.0004	0.0081
2001 Otay Associates LLC	Engine (Emergency)	0.0011	0.0237
WD40	Engine (Emergency)	0.0034	0.0020
Ferro Electronic Material Systems	Engine (Emergency)	0.0000	0.0000
Elite Athlete Services LLC	Engine (Emergency)	0.0086	0.0051
MedImpact Healthcare Systems Inc	Engine (Emergency)	0.0015	0.0305
Zayo Group	Engine (Emergency)	0.0004	0.0086

Name	Equipment Description	VOC (TPY)	NOx(TPY)
Deer Springs Fire Protection District	Engine (Emergency)	0.0047	0.0028
UCSD	Engine (Emergency)	0.0005	0.0098
UCSD	Engine (Emergency)	0.0006	0.0065
UCSD	Engine (Emergency)	0.0006	0.0123
UCSD	Engine (Emergency)	0.0019	0.0388
Rohr Inc, a UTC Aerospace Systems Company	Engine (Emergency)	0.0022	0.0508
Rohr Inc, a UTC Aerospace Systems Company	Engine (Emergency)	0.0023	0.0014
USMC BASE PUBLIC UTILITIES U32	Engine (Emergency)	0.0007	0.0097
Costco Gasoline Facility #403	Engine (Emergency)	0.0010	0.0143
AMVETS Thrift Store #19	Engine (Emergency)	0.0029	0.0017
Costco Gasoline #462	Engine (Emergency)	0.0009	0.0127
Del Mar Heights-Contact	Engine (Emergency)	0.0004	0.0073
Alexandria Estate Equities, Inc.	Engine (Emergency)	0.0083	0.0050
GSA Otay Mesa Border Station	Engine (Emergency)	0.0150	0.0089
RAF Pacifica Group-Real Estate Fund II LLC & Michel & Co LLC	Engine (Emergency)	0.0035	0.0804
BMR Eastgate Mall LP	Engine (Emergency)	0.0024	0.0330
Sweetwater Authority Water District	Engine (Emergency)	0.0009	0.0121
Valley Center Municipal Water District	Engine (Emergency)	0.0006	0.0128
Cabrillo Power LLC	Engine (Emergency)	0.0015	0.0321
Commander Navy Region SW	Engine (Emergency)	0.0009	0.0185
SD CO of Gen Svcs PR0086	Engine (Emergency)	0.0033	0.0450
Sears Roebuck & Co Unit #1678	Engine (Emergency)	0.0034	0.0020
Sears Roebuck & Co Unit #1358	Engine (Emergency)	0.0064	0.0038
Turning Point Ministries	Engine (Emergency)	0.0004	0.0081
9th & Broadway	Engine (Emergency)	0.0025	0.0499
SONY COMPUTER ENTERTAINMENT AMERICA	Engine (Emergency)	0.0024	0.0330
TEAMWORK ATHLETIC APPAREL	Engine (Emergency)	0.0013	0.0260
LBA Realty	Engine (Emergency)	0.0015	0.0201
Campus-Contact	Engine (Emergency)	0.0010	0.0191
Orchard Supply Hardware	Engine (Emergency)	0.0002	0.0041
Nordstrom University Town Center	Engine (Emergency)	0.0005	0.0098
SD CITY OF QUALCOMM STADIUM	Engine (Emergency)	0.0004	0.0061
Southern California Edison	Engine (Emergency)	0.0012	0.0231
Southern California Edison	Engine (Emergency)	0.0097	0.1932
Southern California Edison	Engine (Emergency)	0.0025	0.0499
CHARLES RIVER LABORATORIES TRANSGENIC SERVICES	Engine (Emergency)	0.0036	0.0493
Southern California Edison	Engine (Emergency)	0.0000	0.0000
Southern California Edison	Engine (Emergency)	0.0020	0.0406
Smart & Final #932	Engine (Emergency)	0.0026	0.0015
Summit Pointe Office, LLC	Engine (Emergency)	0.0078	0.1551
City of San Diego-Public Utilities Department	Engine (Emergency)	0.0025	0.0500
City of San Diego-Public Utilities Department	Engine (Emergency)	0.0013	0.0179
CA Highway Patrol	Engine (Emergency)	0.0028	0.0017
La Casa Del Zorro	Engine (Emergency)	0.0006	0.0128
ARE-SD Region 40	Engine (Emergency)	0.0031	0.0427
USN Weapons Station	Engine (Emergency)	0.0010	0.0214
TPSC IX, LLC c/o Cushman & Wakefield	Engine (Emergency)	0.0033	0.0676
Sunny Isle LLC	Engine (Emergency)	0.0037	0.0855
Hazard Construction Co	Engine (Emergency)	0.0013	0.0309
Collision Auto Body & Paint	Coating Line	0.9230	0.0000
LEUCADIA AUTO BODY INC	Coating Line	0.9230	0.0000
The Piano Place Inc	Coating Line	0.0000	0.0000
Ahern Rentals	Coating Line	0.9230	0.0000
Westlake Royal Roofing	Coating Line	0.0146	0.0000

Name	Equipment Description	VOC (TPY)	NOx(TPY)
ACCURATE AUTO	Coating Line	0.9230	0.0000
MOON CUSTOM WOODWORK INC	Coating Line	0.0146	0.0000
Rohr Inc, a UTC Aerospace Systems Company	Coating Line	0.6415	0.0000
Rohr Inc, a UTC Aerospace Systems Company	Coating Line	0.6415	0.0000
Rohr Inc, a UTC Aerospace Systems Company	Coating Line	0.6415	0.0000
Rohr Inc, a UTC Aerospace Systems Company	Coating Line	0.6415	0.0000
Rohr Inc, a UTC Aerospace Systems Company	Coating Line	0.6415	0.0000
Rohr Inc, a UTC Aerospace Systems Company	Coating Line	0.6415	0.0000
Rohr Inc, a UTC Aerospace Systems Company	Coating Line	0.6415	0.0000
Rohr Inc, a UTC Aerospace Systems Company	Coating Line	0.6415	0.0000
Rohr Inc, a UTC Aerospace Systems Company	Coating Line	0.6415	0.0000
Rohr Inc, a UTC Aerospace Systems Company	Coating Line	0.6415	0.0000
Rohr Inc, a UTC Aerospace Systems Company	Coating Line	0.6415	0.0000
Rohr Inc, a UTC Aerospace Systems Company	Coating Line	0.6415	0.0000
Rohr Inc, a UTC Aerospace Systems Company	Coating Line	0.6415	0.0000
Rohr Inc, a UTC Aerospace Systems Company	Coating Line	0.0000	0.0000
Rohr Inc, a UTC Aerospace Systems Company	Coating Line	0.6415	0.0000
Metropolitan Transit Dev Board	Coating Line	0.9230	0.0000
California Air Compressor Inc	Coating Line	0.2555	0.0000
GES Exposition Services	Coating Line	0.0000	0.0000
Naval Coating Inc Zarcon	Coating Line	0.1644	0.0000
Stone Yard	Coating Line	0.0000	0.0000
Stone Yard	Coating Line	0.0000	0.0000
COLORS ON PARADE	Coating Line	0.9230	0.0000
SD City of Gen Svcs Fac Maintenance	Coating Line	0.0000	0.0000
ANDERSON MANUFACTURING	Coating Line	0.2555	0.0000
PACIFIC WASTE SERVICES	Coating Line	0.2555	0.0000
A and G Collision Center	Coating Line	0.9230	0.0000
Costco Wholesale Corp	Coating Line	0.0000	0.0000
Costco Wholesale Corp	Coating Line	0.0000	0.0000
Costco Wholesale Corp	Coating Line	0.0000	0.0000
Blackhawk Helicopters Inc	Coating Line	0.2555	0.0000
Leatherock International Inc	Coating Line	0.0146	0.0000
	2020 Totals (tons)	**16.8139**	**1.5515**
Covance Market Access Services	Engine (Emergency)	0.0009	0.0174
Balboa Travel Plaza	Engine (Emergency)	0.0003	0.0065
SD Co of	Engine (Emergency)	0.0000	0.0000
GOVERNMENT EMPLOYEES INSURANCE COMPANY	Engine (Emergency)	0.0090	0.2064
City of SD PUD Water Branch	Engine (Emergency)	0.0012	0.0166
Commander Navy Region Southwest N45/Air	Engine (Emergency)	0.0081	0.2201
ALEXANDRIA REAL ESTATE EQUITIES INC	Engine (Emergency)	0.0005	0.0063
Rohr Inc, a UTC Aerospace Systems Company	Engine (Emergency)	0.0036	0.0022
ART MUSEUM OF LA JOLLA	Engine (Emergency)	0.0005	0.0068
CITY OF CARLSBAD PUBLIC WORKS	Engine (Emergency)	0.0007	0.0097
Commander Navy Region SW	Engine (Emergency)	0.0033	0.0676
SDG&E	Engine (Emergency)	0.0007	0.0095
SD Trolley Inc	Engine (Emergency)	0.0005	0.0094
FAIRBANKS RANCH COMMUNITY SVC DIST	Engine (Emergency)	0.0011	0.0158
USMC Base Public Utilities U09	Engine (Emergency)	0.0005	0.0067
SCP Horton Owner 1 LLC dba: Horton Plaza	Engine (Emergency)	0.0004	0.0083
Designer Molecules Inc	Engine (Emergency)	0.0006	0.0076
NORDSTROM	Engine (Emergency)	0.0006	0.0076
SFPP LP	Engine (Emergency)	0.0003	0.0054
The Irvine Company LLC	Engine (Emergency)	0.0031	0.0838

Name	Equipment Description	VOC (TPY)	NOx(TPY)
Apple Inc	Engine (Emergency)	0.0090	0.2064
SD CO OF SHERIFFS CRIME LAB PR0395	Engine (Emergency)	0.0057	0.1536
Verizon Wireless	Engine (Emergency)	0.0007	0.0097
USMC Base Marine Sea Ops	Engine (Emergency)	0.0004	0.0061
SAINT PAUL SENIOR HM SERVICES	Engine (Emergency)	0.0007	0.0148
BD Biosciences	Engine (Emergency)	0.0010	0.0143
FRYS ELECTRONICS	Engine (Emergency)	0.0050	0.1140
COUNTY OF SAN DIEGO (RCS)	Engine (Emergency)	0.0046	0.0027
Vista Industrial LLC	Engine (Emergency)	0.0004	0.0072
Wells Fargo	Engine (Emergency)	0.0010	0.0193
Meggitt San Diego Inc	Engine (Emergency)	0.0035	0.0489
ViaCyte	Engine (Emergency)	0.0005	0.0098
The Rey	Engine (Emergency)	0.0030	0.0598
LBA Realty - XXIV, LP	Engine (Emergency)	0.0002	0.0049
The Scripps Research Institute	Engine (Emergency)	0.0039	0.0900
SD UNIFIED SCHOOL DISTRICT	Engine (Emergency)	0.0000	0.0000
Bernardo Technology Partners II LLC	Engine (Emergency)	0.0003	0.0065
Readerlink Marketing Services	Engine (Emergency)	0.0022	0.0309
Commander Navy Region SW	Engine (Emergency)	0.0012	0.0249
AT&T Salton Radio CAO520	Engine (Emergency)	0.0005	0.0072
City of San Diego Water Dept	Engine (Emergency)	0.0025	0.0527
PCI Pharma Services	Engine (Emergency)	0.0010	0.0021
USMC MCAS Miramar	Engine (Emergency)	0.0026	0.0535
USMC MCAS Miramar	Engine (Emergency)	0.0019	0.0395
USN Hospital 2 PWC	Boiler	0.0223	0.1348
USN Hospital 2 PWC	Boiler	0.0223	0.1348
French Jim Custom Shutter Co	Coating Line	0.0000	0.0000
BRAVO MANUEL CO	Coating Line	0.0000	0.0000
Rohr Inc, a UTC Aerospace Systems Company	Coating Line	0.6415	0.0000
The Mahogany Shop	Coating Line	0.0000	0.0000
Mossy Ford	Coating Line	0.9230	0.0000
Moon Custom Woodworking	Coating Line	0.0000	0.0000
SDPBC Aquisition LP dba PEMCOR Packaging	Coating Line	0.1616	0.0000
Commercial Press	Coating Line	0.1616	0.0000
GENERAL DYNAMICS NASSCO	Coating Line	0.0000	0.0000
GENERAL DYNAMICS NASSCO	Coating Line	0.0146	0.0000
Cal Pacific Truck Center, LLC	Coating Line	0.9230	0.0000
John Hine Pontiac Mazda	Coating Line	0.9230	0.0000
Meggitt San Diego Inc	Coating Line	0.2555	0.0000
Mark Martins AM/PM Painting Inc	Coating Line	0.0000	0.0000
California Collision Center Oceanside	Coating Line	0.9230	0.0000
Southland Envelope Co Inc	Coating Line	0.1616	0.0000
Flight Suits	Coating Line	0.0000	0.0000
Sun Valley Body & Paint	Coating Line	0.9230	0.0000
Mossy Ford	Coating Line	0.9230	0.0000
	2021 Totals (tons)	**7.0669**	**1.9622**
	Overall Totals (tons):	**158.0369**	**36.1533**

Table L-3
Net Emissions Differential:
Comparing Permitted Emission Increases from Sources > 10 Tons/Year to Unbanked Actual Emission Reductions from Shutdowns (Tons/Year)

Year	Pollutant	Increase from Sources >10 tons	Unbanked Reduction From Shutdowns	Emissions Differential
1999	VOC	**30.2**	**-51.3**	**-21.1**
	NOx	20.3	-16.6	3.7
2000	VOC	**47.5**	**-67.6**	**-20.1**
	NOx	0	-9.8	-9.8
2001	VOC	**121.5**	**-73.8**	**47.7**
	NOx	5	-10.7	-5.7
2002	VOC	**49.6**	**-124.1**	**-74.5**
	NOx	3	-17.5	-14.5
2003	VOC	**55.8**	**-131.6**	**-75.8**
	NOx	30.5	-23.6	6.9
2004	VOC	**23.2**	**-14.4**	**8.8**
	NOx	14.5	-6.8	7.7
2005	VOC	**28.7**	**-61.3**	**-32.6**
	NOx	7.8	-32.1	-24.3
2006	VOC	**54.1**	**-37.7**	**16.4**
	NOx	22.2	-10.3	11.9
2010	VOC	**0.1**	**-11.8**	**-11.7**
	NOx	0.2	-6.7	-6.5
2011	VOC	**0**	**-20.3**	**-20.3**
	NOx	0.6	-20.6	-20.0
2012	VOC	**4.7**	**-16.6**	**-11.9**
	NOx	12.3	-40.6	-28.3
2013	VOC	**7**	**-41.5**	**-34.5**
	NOx	48.2	-48.8	-0.6
2014	VOC	**9.2**	**-25.2**	**-16.0**
	NOx	24.5	-25.3	-0.8
2015	VOC	**1.57**	**-29.0**	**-27.4**
	NOx	8.13	-7.7	0.4
2016	VOC	**19.44**	**-15.4**	**4.0**
	NOx	0.61	-6.4	-5.8
2017	VOC	**2.12**	**-33.6**	**-31.5**
	NOx	4.78	-7.9	-3.1
2018	VOC	**6.20**	**-39.5**	**-33.3**
	NOx	5.16	-7.6	-2.4
2019	VOC	**8.21**	**-16.6**	**-8.4**
	NOx	0.38	-3.1	-2.7
2020	VOC	**0.004**	**-16.8**	**-16.8**
	NOx	0.08	-1.6	-1.5
2021	VOC	**4.28**	**-7.1**	**-2.8**
	NOx	0.28	-2.0	-1.7

Year	Pollutant	Increase from Sources >10 tons	Unbanked Reduction From Shutdowns	Emissions Differential
Seven Year Annual Average 2015-2021	VOC	6.0	-22.6	-16.6
	NOx	4.9	-9.0	-4.2
Historical Annual Average (01/1999-12/2021)	VOC	23.7	-41.8	-18.1
	NOx	10.4	-15.3	-4.9

Table L-4
Banked Emission Reduction Credits, Amount, and Source
as of July 12, 2022

Company Name	NOx (Tons/Year)	VOC (Tons/Year)	Reduction Source
Applied Energy LLC	115.68	4.05	Shutdown (Equipment)
Cabrillo Enterprises, LLC	0.00	1.25	Shutdown (Equipment)
Cabrillo Power II, LLC	1.16	0.00	Shutdown (Equipment)
Callaway Golf Co.	0.00	12.18	Shutdown (Equipment)
City of San Diego, MWD	0.00	23.14	Shutdown (Equipment)
Dynergy	0.95	0.00	Shutdown (Facility)
General Dynamics Properties, Inc.	1.26	0.23	Shutdown (Facility)
Grey K. Environmental Fund, LP	0.00	63.34	Shutdown (Facility)
Grossmont District Hospital	9.09	0.00	Shutdown (Equipment)
Hanson Aggregates, Pacific SW Region	0.93	0.26	Modification - Engine
Hughes-Aircraft Co., Electro-Opti Cal Systems	0.00	1.28	Shutdown (Equipment)
Koch Membrane Systems, Inc.	0.00	2.91	Shutdown (Facility)
Kyocera America	16.70	7.60	Shutdown (Equipment)
Muht-Hei, Inc.	0.00	9.09	Shutdown (Equipment)
National Steel & Shipbuilding	0.54	0.62	Shutdown (Equipment)
Naval Air Station, North Island	30.00	0.00	Shutdown (Equipment)
Naval Station, San Diego	5.50	0.05	Shutdown (Equipment)
Navy Region Southwest	12.02	0.00	Shutdown (Equipment)
Northrop-Grumman Ryan Aeronautical Center	0.00	1.20	Shutdown (Facility)
Olduvai Gorge LLC	27.85	60.03	Shutdown (Facility)
Otay Mesa Energy Center, LLC	30.07	0.40	Shutdown (Equipment)
Otay Mesa Generating Co., LLC	5.18	0.00	Modification process
Performance Contracting Inc.	0.00	1.00	Shutdown (Facility)
Pio Pico Energy Center, LLC	0.00	6.60	Modification process
Qualcomm	20.60	0.00	Shutdown (Equipment)
Rohr Inc., a Collins Aerospace Company	4.10	4.86	Shutdown (Equipment)
Sherwin Williams	0.00	7.46	Modification process
Shipyard Supplies, Inc.	0.00	2.00	Modification Equipment
Solar Turbines	10.00	0.60	Shutdown (Equipment)
Southern California Edison Company	0.51	0.02	Shutdown (Equipment)
Surface Technologies	0.00	1.48	Shutdown (Facility)
SW Division, Naval Facilities Engineering Cmd.	0.00	47.80	Shutdown (Station)
Unisys Corporation	0.00	7.86	Shutdown (Equipment)
United States Marine Corps	3.00	0.00	Shutdown (Station)
US Foam	0.00	0.10	Shutdown (Facility)
USN Communications Station	2.64	0.05	Shutdown (Equipment)
Veterans Administration Hospital	1.90	0.00	Modification - Engine
Total:	**299.67**	**267.50**	
From Permanent Shutdowns:	**291.67 (97.3%)**	**251.13 (93.9%)**	
From Process or Equipment Modifications:	**8.00 (2.7%)**	**16.31 (6.1%)**	

Table L-5
Updated VOC Emissions Impact
Resulting from Repeal of State Offset Requirements (Tons/Year)

Year	*Actual* or Projected Impact[146]		1998 Assessment Worst-Case[147] (Cumulative)	1998 Assessment Expected-Case[148] (Cumulative)
	Annual	Cumulative		
1998	0.0	0	0	0
1999	0.0	0	33	2
2000	0.0	0	66	4
2001	47.7	47.7	99	6
2002	0.0	47.7	132	7
2003	0.0	47.7	165	9
2004	8.8	56.5	198	11
2005	0.0	56.5	231	13
2006	16.4	72.9	264	14
2010	0.0	72.9	396	22
2011	0.0	72.9	429	23
2012	0.0	72.9	462	25
2013	0.0	72.9	495	27
2014	0.0	72.9	528	29
2015	0.0	72.9	561	30
2016	4.0	76.9	594	32
2017	0.0	76.9	627	34
2018	0.0	76.9	660	36
2019	0.0	76.9	693	38
2020	0.0	76.9	726	39
2021	0.0	76.9	759	41
2022	0.0	76.9	792	43
2023	0.0	76.9	825	45
2024	0.0	76.9	858	47
2025	0.0	76.9	891	48
2026	0.0	76.9	924	50
2027	0.0	76.9	957	52
2028	0.0	76.9	990	54
2029	0.0	76.9	1023	55
2030	0.0	76.9	1056	57
2031	0.0	76.9	1089	59
2032	0.0	76.9	1122	61
2033	0.0	76.9	1155	63
2034	0.0	76.9	1188	64
2035	0.0	76.9	1221	66
2036	0.0	76.9	1254	68
2037	0.0	76.9	1287	70
2038	0.0	76.9	1320	71
2039	0.0	76.9	1353	73
2040	0.0	76.9	1386	75
2041	0.0	76.9	1419	77
2042	0.0	76.9	1452	79
2043	0.0	76.9	1485	80
2044	0.0	76.9	1518	82
2045	0.0	76.9	1551	84
2046	0.0	76.9	1584	86
2047	0.0	76.9	1617	87
2048	0.0	76.9	1650	89
2049	0.0	76.9	1683	91
2050	0.0	76.9	1716	93

Table L-6
Updated NOx Emissions Impact
Resulting from Repeal of State Offset Requirements (Tons/Year)

Year	*Actual* or Projected Impact[149]		1998 Assessment Worst-Case[150] (Cumulative)	1998 Assessment Expected-Case[151] (Cumulative)
	Annual	Cumulative		
1998	0.0	0.0	0	0
1999	3.7	3.7	15	3
2000	0.0	3.7	30	6
2001	0.0	3.7	45	9
2002	0.0	3.7	60	12
2003	6.9	10.6	75	15
2004	7.7	18.3	90	18
2005	0.0	18.3	105	21
2006	11.9	30.2	120	24
2010	0.0	30.2	180	36
2011	0.0	30.2	195	39
2012	0.0	30.2	210	42
2013	0.0	30.2	225	45
2014	0.0	30.2	240	48
2015	0.4	30.6	255	52
2016	0.0	30.6	270	55
2017	0.0	30.6	285	58
2018	0.0	30.6	300	61
2019	0.0	30.6	315	64
2020	0.0	30.6	330	67
2021	0.0	30.6	345	70
2022	0.0	30.6	360	73
2023	0.0	30.6	375	76
2024	0.0	30.6	390	79
2025	0.0	30.6	405	82
2026	0.0	30.6	420	85
2027	0.0	30.6	435	88
2028	0.0	30.6	450	91
2029	0.0	30.6	465	94
2030	0.0	30.6	480	97
2031	0.0	30.6	495	100
2032	0.0	30.6	510	103
2033	0.0	30.6	525	106
2034	0.0	30.6	540	109
2035	0.0	30.6	555	112
2036	0.0	30.6	570	115
2037	0.0	30.6	585	118
2038	0.0	30.6	600	121
2039	0.0	30.6	615	124
2040	0.0	30.6	630	127
2041	0.0	30.6	645	130
2042	0.0	30.6	660	133
2043	0.0	30.6	675	136
2044	0.0	30.6	690	139
2045	0.0	30.6	705	142
2046	0.0	30.6	720	145
2047	0.0	30.6	735	148
2048	0.0	30.6	750	152
2049	0.0	30.6	765	155
2050	0.0	30.6	780	158

Table L-7
Cumulative VOC Emissions Impact of the Repeal of State Offset Requirements as a Percentage of Annual Total Emissions Inventory (Tons/Year)

Year	Total Inventory[152]	*Actual* or Projected Net Impact[153]	
		Tons	% of Total Inventory
1998	82,138	0.0	0.00%
1999	81,734	0.0	0.00%
2000	76,092	0.0	0.00%
2001	72,957	47.7	0.07%
2002	71,315	47.7	0.07%
2003	68,015	47.7	0.07%
2004	66,995	56.5	0.08%
2005	63,607	56.5	0.09%
2006	62,343	72.9	0.12%
2010	51,737	72.9	0.14%
2011	49,819	72.9	0.15%
2012	47,841	72.9	0.15%
2013	47,014	72.9	0.16%
2014	45,482	72.9	0.16%
2015	44,142	72.9	0.17%
2016	43,078	76.9	0.18%
2017	42,079	76.9	0.18%
2018	41,118	76.9	0.19%
2019	40,384	76.9	0.19%
2020	39,670	76.9	0.19%
2021	38,833	76.9	0.20%
2022	38,183	76.9	0.20%
2023	37,785	76.9	0.20%
2024	37,501	76.9	0.21%
2025	36,940	76.9	0.21%
2026	36,302	76.9	0.21%
2027	35,702	76.9	0.22%
2028	35,243	76.9	0.22%
2029	34,817	76.9	0.22%
2030	34,489	76.9	0.22%
2031	34,191	76.9	0.22%
2032	33,938	76.9	0.23%
2033	33,732	76.9	0.23%
2034	33,549	76.9	0.23%
2035	33,414	76.9	0.23%
2036	33,321	76.9	0.23%
2037	33,275	76.9	0.23%
2038	33,293	76.9	0.23%
2039	33,360	76.9	0.23%
2040	33,456	76.9	0.23%
2041	33,586	76.9	0.23%
2042	33,754	76.9	0.23%
2043	33,961	76.9	0.23%
2044	34,194	76.9	0.22%
2045	34,435	76.9	0.22%
2046	34,698	76.9	0.22%
2047	34,981	76.9	0.22%
2048	35,274	76.9	0.22%
2049	35,596	76.9	0.22%
2050	35,932	76.9	0.21%

Table L-8
Cumulative NOx Emissions Impact of the Repeal of State Offset Requirements as a Percentage of Annual Total Emissions Inventory (Tons/Year)

Year	Total Inventory[154]	*Actual* or Projected Net Impact[155]	
		Tons	% of Total Inventory
1998	92,728	0.0	0.00%
1999	92,153	3.7	0.00%
2000	78,763	3.7	0.00%
2001	76,778	3.7	0.00%
2002	75,705	3.7	0.00%
2003	71,652	10.6	0.01%
2004	67,563	18.3	0.03%
2005	63,652	18.3	0.03%
2006	61,293	30.2	0.05%
2010	48,155	30.2	0.06%
2011	45,072	30.2	0.07%
2012	42,516	30.2	0.07%
2013	40,086	30.2	0.08%
2014	38,128	30.2	0.08%
2015	35,094	30.6	0.09%
2016	33,094	30.6	0.09%
2017	33,875	30.6	0.09%
2018	33,085	30.6	0.09%
2019	31,687	30.6	0.10%
2020	29,399	30.6	0.10%
2021	28,396	30.6	0.11%
2022	26,894	30.6	0.11%
2023	25,506	30.6	0.12%
2024	24,514	30.6	0.12%
2025	23,587	30.6	0.13%
2026	23,072	30.6	0.13%
2027	22,584	30.6	0.14%
2028	22,132	30.6	0.14%
2029	21,777	30.6	0.14%
2030	21,332	30.6	0.14%
2031	21,056	30.6	0.15%
2032	20,824	30.6	0.15%
2033	20,623	30.6	0.15%
2034	20,469	30.6	0.15%
2035	20,347	30.6	0.15%
2036	19,560	30.6	0.16%
2037	19,406	30.6	0.16%
2038	19,325	30.6	0.16%
2039	19,126	30.6	0.16%
2040	18,987	30.6	0.16%
2041	18,732	30.6	0.16%
2042	18,504	30.6	0.17%
2043	18,380	30.6	0.17%
2044	18,330	30.6	0.17%
2045	18,356	30.6	0.17%
2046	18,321	30.6	0.17%
2047	18,389	30.6	0.17%
2048	18,415	30.6	0.17%
2049	18,399	30.6	0.17%
2050	18,413	30.6	0.17%

Table L-9
Cumulative VOC Emissions Impact of the Repeal of State Offset Requirements as a Percentage of Annual Stationary-Source Emissions Inventory (Tons/Year)

Year	Stationary Source Inventory[156]	*Actual* or Projected Net Impact[157]	
		Tons	% of Total Inventory
1998	10,053	0.0	0.00%
1999	11,512	0.0	0.00%
2000	13,691	0.0	0.00%
2001	13,414	47.7	0.36%
2002	13,895	47.7	0.34%
2003	13,361	47.7	0.36%
2004	13,605	56.5	0.42%
2005	13,387	56.5	0.42%
2006	12,640	72.9	0.58%
2010	10,924	72.9	0.67%
2011	10,290	72.9	0.71%
2012	10,124	72.9	0.72%
2013	10,356	72.9	0.70%
2014	10,109	72.9	0.72%
2015	10,136	72.9	0.72%
2016	10,625	76.9	0.72%
2017	10,087	76.9	0.76%
2018	9,924	76.9	0.77%
2019	9,745	76.9	0.79%
2020	9,498	76.9	0.81%
2021	9,489	76.9	0.81%
2022	9,412	76.9	0.82%
2023	9,380	76.9	0.82%
2024	9,439	76.9	0.81%
2025	9,388	76.9	0.82%
2026	9,325	76.9	0.82%
2027	9,261	76.9	0.83%
2028	9,224	76.9	0.83%
2029	9,221	76.9	0.83%
2030	9,227	76.9	0.83%
2031	9,252	76.9	0.83%
2032	9,288	76.9	0.83%
2033	9,334	76.9	0.82%
2034	9,393	76.9	0.82%
2035	9,466	76.9	0.81%
2036	9,555	76.9	0.80%
2037	9,663	76.9	0.80%
2038	9,791	76.9	0.79%
2039	9,924	76.9	0.77%
2040	10,058	76.9	0.76%
2041	10,198	76.9	0.75%
2042	10,344	76.9	0.74%
2043	10,494	76.9	0.73%
2044	10,655	76.9	0.72%
2045	10,813	76.9	0.71%
2046	10,975	76.9	0.70%
2047	11,147	76.9	0.69%
2048	11,316	76.9	0.68%
2049	11,494	76.9	0.67%
2050	11,675	76.9	0.66%

Table L-10
Cumulative NOx Emissions Impact of the Repeal of State Offset Requirements as a Percentage of Annual Stationary-Source Emissions Inventory (Tons/Year)

Year	Stationary Source Inventory[158]	*Actual* or Projected Net Impact[159]	
		Tons	% of Total Inventory
1998	5,227	0.0	0.00%
1999	5,011	3.7	0.07%
2000	4,842	3.7	0.08%
2001	4,590	3.7	0.08%
2002	2,893	3.7	0.13%
2003	2,656	10.6	0.40%
2004	2,766	18.3	0.66%
2005	2,784	18.3	0.66%
2006	2,586	30.2	1.17%
2010	1,809	30.2	1.67%
2011	1,756	30.2	1.72%
2012	1,749	30.2	1.73%
2013	1,813	30.2	1.66%
2014	1,717	30.2	1.76%
2015	1,630	30.6	1.88%
2016	1,620	30.6	1.89%
2017	1,615	30.6	1.90%
2018	1,502	30.6	2.04%
2019	1,464	30.6	2.09%
2020	1,519	30.6	2.02%
2021	1,520	30.6	2.01%
2022	1,515	30.6	2.02%
2023	1,501	30.6	2.04%
2024	1,492	30.6	2.05%
2025	1,517	30.6	2.02%
2026	1,515	30.6	2.02%
2027	1,503	30.6	2.04%
2028	1,499	30.6	2.04%
2029	1,489	30.6	2.06%
2030	1,473	30.6	2.08%
2031	1,473	30.6	2.08%
2032	1,479	30.6	2.07%
2033	1,471	30.6	2.08%
2034	1,478	30.6	2.07%
2035	1,486	30.6	2.06%
2036	1,464	30.6	2.09%
2037	1,491	30.6	2.05%
2038	1,494	30.6	2.05%
2039	1,510	30.6	2.03%
2040	1,523	30.6	2.01%
2041	1,531	30.6	2.00%
2042	1,545	30.6	1.98%
2043	1,560	30.6	1.96%
2044	1,575	30.6	1.94%
2045	1,587	30.6	1.93%
2046	1,603	30.6	1.91%
2047	1,617	30.6	1.89%
2048	1,632	30.6	1.88%
2049	1,648	30.6	1.86%
2050	1,662	30.6	1.84%

Table L-11
2021 Versus 1998[160] Projections of Cumulative VOC Emissions Impact of Repeal as a Percentage of Annual Total Emissions Inventory (Tons/Year)

Year	*Actual* or Projected Impact	1998 Worst-Case Assessment (% of total VOC's)	1998 Expected-Case Assessment (% of total VOC's)
1998	0.00%	0.00%	0.00%
1999	0.00%	0.04%	0.00%
2000	0.00%	0.09%	0.00%
2001	0.07%	0.14%	0.01%
2002	0.07%	0.19%	0.01%
2003	0.07%	0.24%	0.01%
2004	0.08%	0.30%	0.02%
2005	0.09%	0.36%	0.02%
2006	0.12%	0.42%	0.02%
2010	0.14%	0.77%	0.04%
2011	0.15%	0.86%	0.05%
2012	0.15%	0.97%	0.05%
2013	0.16%	1.05%	0.06%
2014	0.16%	1.16%	0.06%
2015	0.17%	1.27%	0.07%
2016	0.18%	1.38%	0.07%
2017	0.18%	1.49%	0.08%
2018	0.19%	1.61%	0.09%
2019	0.19%	1.72%	0.09%
2020	0.19%	1.83%	0.10%
2021	0.20%	1.95%	0.11%
2022	0.20%	2.07%	0.11%
2023	0.20%	2.18%	0.12%
2024	0.21%	2.29%	0.12%
2025	0.21%	2.41%	0.13%
2026	0.21%	2.55%	0.14%
2027	0.22%	2.68%	0.15%
2028	0.22%	2.81%	0.15%
2029	0.22%	2.94%	0.16%
2030	0.22%	3.06%	0.17%
2031	0.22%	3.19%	0.17%
2032	0.23%	3.31%	0.18%
2033	0.23%	3.42%	0.19%
2034	0.23%	3.54%	0.19%
2035	0.23%	3.65%	0.20%
2036	0.23%	3.76%	0.20%
2037	0.23%	3.87%	0.21%
2038	0.23%	3.96%	0.21%
2039	0.23%	4.06%	0.22%
2040	0.23%	4.14%	0.22%
2041	0.23%	4.22%	0.23%
2042	0.23%	4.30%	0.23%
2043	0.23%	4.37%	0.24%
2044	0.22%	4.44%	0.24%
2045	0.22%	4.50%	0.24%
2046	0.22%	4.57%	0.25%
2047	0.22%	4.62%	0.25%
2048	0.22%	4.68%	0.25%
2049	0.22%	4.73%	0.26%
2050	0.21%	4.78%	0.26%

Table L-12
2021 Versus 1998[161] Projections of Cumulative NOx Emissions Impact of Repeal as a Percentage of Annual Total Emissions Inventory (Tons/Year)

Year	*Actual* or Projected Impact	1998 Worst-Case Assessment (% of total NOx)	1998 Expected-Case Assessment (% of total NOx)
1998	0.00%	0.00%	0.00%
1999	0.00%	0.02%	0.00%
2000	0.00%	0.04%	0.01%
2001	0.00%	0.06%	0.01%
2002	0.00%	0.08%	0.02%
2003	0.01%	0.10%	0.02%
2004	0.03%	0.13%	0.03%
2005	0.03%	0.16%	0.03%
2006	0.05%	0.20%	0.04%
2010	0.06%	0.37%	0.08%
2011	0.07%	0.43%	0.09%
2012	0.07%	0.49%	0.10%
2013	0.07%	0.56%	0.11%
2014	0.08%	0.63%	0.13%
2015	0.09%	0.73%	0.15%
2016	0.09%	0.82%	0.16%
2017	0.09%	0.84%	0.17%
2018	0.09%	0.91%	0.18%
2019	0.10%	0.99%	0.20%
2020	0.10%	1.12%	0.23%
2021	0.11%	1.21%	0.25%
2022	0.11%	1.34%	0.27%
2023	0.12%	1.47%	0.30%
2024	0.12%	1.59%	0.32%
2025	0.13%	1.72%	0.35%
2026	0.13%	1.82%	0.37%
2027	0.14%	1.93%	0.39%
2028	0.14%	2.03%	0.41%
2029	0.14%	2.14%	0.43%
2030	0.14%	2.25%	0.45%
2031	0.15%	2.35%	0.47%
2032	0.15%	2.45%	0.49%
2033	0.15%	2.55%	0.51%
2034	0.15%	2.64%	0.53%
2035	0.15%	2.73%	0.55%
2036	0.16%	2.91%	0.59%
2037	0.16%	3.01%	0.61%
2038	0.16%	3.10%	0.63%
2039	0.16%	3.22%	0.65%
2040	0.16%	3.32%	0.67%
2041	0.16%	3.44%	0.70%
2042	0.17%	3.57%	0.72%
2043	0.17%	3.67%	0.74%
2044	0.17%	3.76%	0.76%
2045	0.17%	3.84%	0.78%
2046	0.17%	3.93%	0.79%
2047	0.17%	4.00%	0.81%
2048	0.17%	4.07%	0.82%
2049	0.17%	4.16%	0.84%
2050	0.17%	4.24%	0.86%

Table L-13
2021 Versus 1998 Projections of Cumulative VOC Emissions Impact of Repeal as a Percentage of Annual Stationary-Source Emissions Inventory (Tons/Year)

Year	*Actual* or Projected Impact	1998 Assessment Worst-Case (Cumulative)	1998 Assessment Expected-Case (Cumulative)
1998	0.00%	0.00%	0.00%
1999	0.00%	0.29%	0.02%
2000	0.00%	0.48%	0.03%
2001	0.36%	0.74%	0.04%
2002	0.34%	0.95%	0.05%
2003	0.36%	1.23%	0.07%
2004	0.42%	1.46%	0.08%
2005	0.42%	1.73%	0.09%
2006	0.58%	2.09%	0.11%
2010	0.67%	3.63%	0.20%
2011	0.71%	4.17%	0.22%
2012	0.72%	4.56%	0.25%
2013	0.70%	4.78%	0.26%
2014	0.72%	5.22%	0.28%
2015	0.72%	5.53%	0.30%
2016	0.72%	5.59%	0.30%
2017	0.76%	6.22%	0.34%
2018	0.77%	6.65%	0.36%
2019	0.79%	7.11%	0.38%
2020	0.81%	7.64%	0.41%
2021	0.81%	8.00%	0.43%
2022	0.82%	8.41%	0.45%
2023	0.82%	8.80%	0.47%
2024	0.81%	9.09%	0.49%
2025	0.82%	9.49%	0.51%
2026	0.82%	9.91%	0.53%
2027	0.83%	10.33%	0.56%
2028	0.83%	10.73%	0.58%
2029	0.83%	11.09%	0.60%
2030	0.83%	11.44%	0.62%
2031	0.83%	11.77%	0.63%
2032	0.83%	12.08%	0.65%
2033	0.82%	12.37%	0.67%
2034	0.82%	12.65%	0.68%
2035	0.81%	12.90%	0.70%
2036	0.80%	13.12%	0.71%
2037	0.80%	13.32%	0.72%
2038	0.79%	13.48%	0.73%
2039	0.77%	13.63%	0.74%
2040	0.76%	13.78%	0.74%
2041	0.75%	13.91%	0.75%
2042	0.74%	14.04%	0.76%
2043	0.73%	14.15%	0.76%
2044	0.72%	14.25%	0.77%
2045	0.71%	14.34%	0.77%
2046	0.70%	14.43%	0.78%
2047	0.69%	14.51%	0.78%
2048	0.68%	14.58%	0.79%
2049	0.67%	14.64%	0.79%
2050	0.66%	14.70%	0.79%

Table L-14
2021 Versus 1998 Projections of Cumulative NOx Emissions Impact of Repeal as a Percentage of Annual Stationary-Source Emissions Inventory (Tons/Year)

Year	*Actual* or Projected Impact	1998 Assessment Worst-Case (Cumulative)	1998 Assessment Expected-Case (Cumulative)
1998	0.00%	0.00%	0.00%
1999	0.07%	0.30%	0.06%
2000	0.08%	0.62%	0.13%
2001	0.08%	0.98%	0.20%
2002	0.13%	2.07%	0.42%
2003	0.40%	2.82%	0.57%
2004	0.66%	3.25%	0.66%
2005	0.66%	3.77%	0.76%
2006	1.17%	4.64%	0.94%
2010	1.67%	9.95%	2.01%
2011	1.72%	11.11%	2.24%
2012	1.73%	12.01%	2.43%
2013	1.66%	12.41%	2.51%
2014	1.76%	13.98%	2.82%
2015	1.88%	15.64%	3.16%
2016	1.89%	16.67%	3.37%
2017	1.90%	17.65%	3.57%
2018	2.04%	19.97%	4.03%
2019	2.09%	21.52%	4.35%
2020	2.02%	21.73%	4.39%
2021	2.01%	22.70%	4.59%
2022	2.02%	23.76%	4.80%
2023	2.04%	24.99%	5.05%
2024	2.05%	26.13%	5.28%
2025	2.02%	26.69%	5.39%
2026	2.02%	27.72%	5.60%
2027	2.04%	28.95%	5.85%
2028	2.04%	30.03%	6.07%
2029	2.06%	31.23%	6.31%
2030	2.08%	32.59%	6.58%
2031	2.08%	33.61%	6.79%
2032	2.07%	34.49%	6.97%
2033	2.08%	35.68%	7.21%
2034	2.07%	36.55%	7.38%
2035	2.06%	37.35%	7.54%
2036	2.09%	38.94%	7.87%
2037	2.05%	39.24%	7.93%
2038	2.05%	40.16%	8.11%
2039	2.03%	40.72%	8.23%
2040	2.01%	41.36%	8.35%
2041	2.00%	42.12%	8.51%
2042	1.98%	42.71%	8.63%
2043	1.96%	43.26%	8.74%
2044	1.94%	43.81%	8.85%
2045	1.93%	44.42%	8.97%
2046	1.91%	44.92%	9.07%
2047	1.89%	45.47%	9.18%
2048	1.88%	45.97%	9.29%
2049	1.86%	46.41%	9.37%
2050	1.84%	46.93%	9.48%

Table L-15
Comparison of Original 1998 and 2021[162] VOC Emissions Inventories and Inventory Projections for San Diego County (Tons/Year)

Year	Stationary		Area		Mobile		Total Inventory	
	1998 Demo	2021 Update	1998 Demo	2021 Update	1998 Demo	2021 Update	1998 Demo	2021 Update
1998	18,710	10,053	17,155	14,091	49,246	57,994	85,111	82,138
1999	18,900	11,512	16,863	14,337	44,771	55,885	80,534	81,734
2000	19,090	13,691	16,571	13,073	40,296	49,329	75,957	76,092
2001	--	13,414	--	13,141	--	46,401	--	72,957
2002	--	13,895	--	13,293	--	44,127	--	71,315
2003	--	13,361	--	12,671	--	41,983	--	68,015
2004	--	13,605	--	12,742	--	40,648	--	66,995
2005	20,973	13,387	17,411	12,103	30,003	38,117	68,387	63,607
2006	--	12,640	--	13,022	--	36,681	--	62,343
2010	25,769	10,924	17,958	11,624	23,360	29,189	67,087	51,737
2011	--	10,290	--	11,741	--	27,788	--	49,819
2012	--	10,124	--	11,699	--	26,017	--	47,841
2013	--	10,356	--	11,826	--	24,832	--	47,014
2014	--	10,109	--	11,956	--	23,418	--	45,482
2015	--	10,136	--	12,025	--	21,981	--	44,142
2016	--	10,625	--	11,816	--	20,637	--	43,078
2017	--	10,087	--	12,032	--	19,960	--	42,079
2018	--	9,924	--	12,092	--	19,101	--	41,118
2019	--	9,745	--	12,328	--	18,310	--	40,384
2020	--	9,498	--	12,586	--	17,585	--	39,670
2021	--	9,489	--	12,342	--	17,002	--	38,833
2022	--	9,412	--	12,347	--	16,424	--	38,183
2023	--	9,380	--	12,486	--	15,920	--	37,785
2024	--	9,439	--	12,655	--	15,408	--	37,501
2025	--	9,388	--	12,762	--	14,790	--	36,940
2026	--	9,325	--	12,824	--	14,153	--	36,302
2027	--	9,261	--	12,896	--	13,546	--	35,702
2028	--	9,224	--	13,033	--	12,986	--	35,243
2029	--	9,221	--	13,118	--	12,478	--	34,817
2030	--	9,227	--	13,254	--	12,007	--	34,489
2031	--	9,252	--	13,378	--	11,561	--	34,191
2032	--	9,288	--	13,469	--	11,181	--	33,938
2033	--	9,334	--	13,564	--	10,834	--	33,732
2034	--	9,393	--	13,660	--	10,497	--	33,549
2035	--	9,466	--	13,757	--	10,191	--	33,414
2036	--	9,555	--	13,856	--	9,911	--	33,321
2037	--	9,663	--	13,958	--	9,654	--	33,275
2038	--	9,791	--	14,065	--	9,437	--	33,293
2039	--	9,924	--	14,173	--	9,263	--	33,360
2040	--	10,058	--	14,282	--	9,115	--	33,456
2041	--	10,198	--	14,394	--	8,994	--	33,586
2042	--	10,344	--	14,509	--	8,902	--	33,754
2043	--	10,494	--	14,626	--	8,841	--	33,961
2044	--	10,655	--	14,746	--	8,793	--	34,194
2045	--	10,813	--	14,867	--	8,755	--	34,435
2046	--	10,975	--	14,993	--	8,730	--	34,698
2047	--	11,147	--	15,120	--	8,713	--	34,981
2048	--	11,316	--	15,251	--	8,706	--	35,274
2049	--	11,494	--	15,385	--	8,716	--	35,596
2050	--	11,675	--	15,519	--	8,738	--	35,932

Table L-16
Comparison of Original 1998 and 2021[163] NOx Emissions Inventories and Inventory Projections for San Diego County (Tons/Year)

Year	Stationary		Area		Mobile		Total Inventory	
	1998 Demo	2021 Update	1998 Demo	2021 Update	1998 Demo	2021 Update	1998 Demo	2021 Update
1998	4,855	5,227	2,139	988	66,766	86,513	73,760	92,728
1999	4,599	5,011	2,183	989	62,729	86,153	69,511	92,153
2000	4,344	4,842	2,227	1,251	58,692	72,670	65,262	78,763
2001	--	4,590	--	1,313	--	70,875	--	76,778
2002	--	2,893	--	1,338	--	71,474	--	75,705
2003	--	2,656	--	1,301	--	67,696	--	71,652
2004	--	2,766	--	1,365	--	63,433	--	67,563
2005	3,614	2,784	2,409	1,272	50,042	59,596	56,064	63,652
2006	--	2,586	--	1,371	--	57,336	--	61,293
2010	4,088	1,809	2,519	1,273	45,114	45,073	51,721	48,155
2011	--	1,756	--	1,224	--	42,092	--	45,072
2012	--	1,749	--	1,160	--	39,607	--	42,516
2013	--	1,813	--	1,214	--	37,059	--	40,086
2014	--	1,717	--	972	--	35,439	--	38,128
2015	--	1,630	--	980	--	32,484	--	35,094
2016	--	1,620	--	1,004	--	30,469	--	33,094
2017	--	1,615	--	1,001	--	31,259	--	33,875
2018	--	1,502	--	900	--	30,683	--	33,085
2019	--	1,464	--	922	--	29,301	--	31,687
2020	--	1,519	--	878	--	27,003	--	29,399
2021	--	1,520	--	837	--	26,039	--	28,396
2022	--	1,515	--	796	--	24,583	--	26,894
2023	--	1,501	--	758	--	23,247	--	25,506
2024	--	1,492	--	719	--	22,303	--	24,514
2025	--	1,517	--	678	--	21,391	--	23,587
2026	--	1,515	--	639	--	20,918	--	23,072
2027	--	1,503	--	602	--	20,480	--	22,584
2028	--	1,499	--	562	--	20,071	--	22,132
2029	--	1,489	--	566	--	19,723	--	21,777
2030	--	1,473	--	568	--	19,292	--	21,332
2031	--	1,473	--	565	--	19,018	--	21,056
2032	--	1,479	--	562	--	18,784	--	20,824
2033	--	1,471	--	559	--	18,593	--	20,623
2034	--	1,478	--	556	--	18,435	--	20,469
2035	--	1,486	--	553	--	18,309	--	20,347
2036	--	1,464	--	545	--	17,551	--	19,560
2037	--	1,491	--	542	--	17,373	--	19,406
2038	--	1,494	--	539	--	17,292	--	19,325
2039	--	1,510	--	535	--	17,080	--	19,126
2040	--	1,523	--	533	--	16,931	--	18,987
2041	--	1,531	--	530	--	16,671	--	18,732
2042	--	1,545	--	527	--	16,432	--	18,504
2043	--	1,560	--	524	--	16,296	--	18,380
2044	--	1,575	--	522	--	16,233	--	18,330
2045	--	1,587	--	519	--	16,250	--	18,356
2046	--	1,603	--	516	--	16,202	--	18,321
2047	--	1,617	--	514	--	16,259	--	18,389
2048	--	1,632	--	511	--	16,273	--	18,415
2049	--	1,648	--	508	--	16,243	--	18,399
2050	--	1,662	--	508	--	16,243	--	18,413

ATTACHMENT M

Glossary of Terms

A

AB 32 (The Global Warming Solutions Act of 2006)
Set the 2020 greenhouse gas emissions reduction goal into law. It directed ARB to develop discrete early actions to reduce greenhouse gases while also preparing a scoping plan to identify how best to reach the 2020 limit on greenhouse gas emissions.

AB 423 (Gloria)
Restructures the governing board of the San Diego County Air Pollution Control District, which is currently governed by the five San Diego County Supervisors, to be governed by an 11-member board consisting of two county supervisors, six council members or mayors from specified cities, and three public members. Adds specified duties to the district and requires an audit of the District by the California Air Resources Board.

AB 617 (C. Garcia)
Established the Community Air Protection Program in response to AB 617. The program's mission is to reduce pollution exposure in communities based on environmental, health and socioeconomic information. This first-of-its-kind statewide effort requires community air monitoring, community emission reduction plans, and incentive funding to deploy the cleanest technologies in the most impacted areas.

AB 1807 (Tanner)
A California state law (Health and Safety Code section 39650 et seq.) that became effective in January of 1984 and established the framework for California's toxic air contaminant identification and control program.

AB 2588 (Connelly) Air Toxics "Hot Spots" Information and Assessment Program
A California program (Health and Safety Code Section 44300 et seq.) that requires certain stationary sources to report the type and quantity of specific toxic substances they routinely release into the air. The program identifies high priority facilities and requires facilities posing significant risks to notify all exposed individuals.

AB 2766 (Sher) Motor Vehicle Fee Program
A program that permits air districts and local governments to allocate vehicle registration surcharge fees to projects that reduce motor vehicle emissions such as zero-emission vehicles, bike lanes and trip reduction programs.

Abatement
The reduction in degree, intensity, or elimination of pollution.

Acute Exposure
One or a series of short-term exposures generally lasting less than 24 hours.

Acute Health Effect
A health effect that occurs over a relatively short period of time (e.g., minutes or hours). The term is used to describe brief exposures and effects which appear promptly after exposure.

Add-On Control Device
An air pollution control device such as carbon absorber or incinerator that reduces the pollution in exhaust gas; does not affect the process being controlled and thus is "add-on" technology, as opposed to a scheme to control pollution through altering the basic process itself.

Adverse health effects
Health effects from exposure to air contaminants that may range from relatively mild temporary conditions, such as minor eye or throat irritation, shortness of breath, or headaches, to permanent and serious conditions such as birth defects, cancer, or damage to lungs, nerves, liver, heart, or other organs.

Agricultural Burning
The intentional use of fire for vegetation management in areas such as agricultural fields, orchards, rangelands and forests. The regulation is described in the Agricultural Burning Guidelines, Title 17, California Code of Regulations.

Air
So-called "pure" air is a mixture of gases containing about 78% nitrogen; 21% oxygen; less than 1% of carbon dioxide, argon, and other inert gases; and varying amounts of water vapor.

Air basin
An area defined by geographic or administrative boundaries; used for air pollution control programs.

Air district
A political body responsible for managing air quality on a regional or county basis. California is currently divided into 35 air districts. Synonymous with *Air Quality Management District (AQMD).*

Air monitoring
Sampling for and measuring of pollutants present in the atmosphere.

Air pollutants
Amounts of foreign and/or natural substances occurring in the atmosphere that may result in adverse effects to humans, animals, vegetation and/or materials. (See also *Air pollution*.)

Air pollution
The presence of polluting gases and suspended particles in the atmosphere in excess of air quality standards.

Air Pollution Control District (APCD)
A county agency with authority to regulate stationary, indirect and area sources of air pollution (e.g., power plants, highway construction and housing developments) within a given county and governed by a district air pollution control board composed of the elected county supervisors. Synonymous with *Air Quality Management District (AQMD).*

Air quality criteria
The varying amounts of pollution and lengths of exposure at which specific adverse effects to health and comfort take place.

Air Quality Index (AQI)
A numerical index used for reporting severity of air pollution levels to the public. It replaces the formerly used Pollutant Standards Index (PSI). Incorporates five criteria pollutants -- ozone, particulate matter, carbon monoxide, sulfur dioxide and nitrogen dioxide -- into a single index. Incorporates the 8-hour ozone standard and the 24-hour PM2.5 standard into the index calculation. AQI levels range from 0 (Good air quality) to 500 (Hazardous air quality). The higher the index, the higher the level of pollutants and the greater the likelihood of health effects.

Air Quality Management District (AQMD)
A group of counties or portions of counties, or an individual county specified in law with authority to regulate stationary, indirect and area sources of air pollution within the region and governed by a regional air pollution control board comprised mostly of elected officials from within the region. Synonymous with *Air Pollution Control District.*

Air Quality Management Plan (AQMP)
A plan prepared by an APCD/AQMD, for a county or region designated as a non-attainment area, for the purpose of bringing the area into compliance with the requirements of the national and/or California ambient air quality standards. AQMPs are incorporated into the *State Implementation Plan* (SIP).

Air Quality Plan (AQP)
A plan developed to attain and maintain an air quality standard.

Air Quality Simulation Model
A mathematical relationship between emissions and air quality which simulates on a computer the transport, dispersion and transformation of compounds emitted into the air.

Air Quality Standard (AQS)
The prescribed level of a pollutant in the outside air that should not be exceeded during a specific time period to protect public health. Established by both federal and state governments.

Air Resources Board (ARB)
See *California Air Resources Board*

Air Toxics
Generic term referring to a harmful chemical or group of chemicals in the air. Substances that are especially harmful to health, such as those considered under U.S. EPA's hazardous air pollutant program or California's AB 1807 and/or AB 2588 air toxics programs, are considered to be air toxics. Any compound that is in the air and has the potential to produce adverse health effects is an air toxic (in contrast to Toxic Air Contaminant).

Airborne Toxic Control Measure (ATCM)
A control measure adopted by the ARB (Health and Safety Code Section 39666 et seq.), which reduces emissions of toxic air contaminants.

Airshed
A term denoting a geographical area that, because of topography, meteorology, and climate, shares the same air (see *Air Basin*).

Alternative Fuels
Fuels such as methanol, ethanol, natural gas and liquid petroleum gas that are cleaner burning and help to meet ARB's mobile and stationary emission standards. These fuels may be used in place of less clean fuels for powering motor vehicles.

Ambient air
Outside air; any portion of the atmosphere not confined by walls and a roof.

Ambient Air Quality Standards (AAQS)
Health- and welfare-based standards for outdoor air which identify the maximum acceptable average concentrations of air pollutants during a specified period of time. (See also *CAAQS* and *NAAQS* and *Criteria Air Pollutant*.)

Areawide Sources
Sources of pollution where the emissions are spread over a wide area, such as consumer products, fireplaces, road dust and farming operations. Area-wide sources do not include mobile sources or stationary sources.

Asbestos
A mineral fiber that can pollute air or water and cause cancer or asbestosis when inhaled. EPA has banned or severely restricted its use in manufacturing and construction.

Asthma
A medical condition characterized by abnormal restriction of breathing, especially in response to allergens or air contaminants.

Attainment
A designation used when an area meets an air quality standard.

Attainment Area
A geographical area identified to have air quality as good as, or better than, the national and/or California ambient air quality standards (NAAQS/CAAQS). An area may be an attainment area for one pollutant and a nonattainment area for others.

Authority to Construct (A/C)
A pre-construction permit issued by the Air District.

B

Banking
A provision in Air District permit regulations that allows a facility to obtain credits for reducing emissions beyond regulatory limits and use those credits at a later date, similar to how a savings account works.

Best Available Control Measure (BACM)
A term used to describe the "best" measures (according to U.S. EPA guidance) for controlling small or dispersed sources of particulate matter and other emissions from sources such as roadway dust, woodstoves and open burning.

Best Available Control Technology (BACT)
An emissions limitation based on using the most up-to-date methods, systems, techniques, and production processes available to achieve the greatest feasible emission reductions. These are the most stringent requirements for new or modified sources and are determined on a case-by-case basis as part of New Source Review.

Best Available Retrofit Control Technology (BARCT)
An emissions limitation based on the maximum degree of reduction achievable for existing sources taking into account environmental, energy, and economic impact.

Biodiesel
Biodiesel is a diesel replacement fuel made from natural, renewable sources such as new and used vegetable oils and animal fats. Like petroleum diesel, biodiesel operates in compression-ignition engines.

Biogenic Source
Biological sources such as plants and animals that emit air pollutants such as volatile organic compounds. Examples of biogenic sources include animal management operations and oak and pine tree forests.

Bulk Plant
An intermediate gasoline distribution facility where delivery of gasoline to and from the facility is solely by truck.

Bunker Fuel
Fuel oil used to power ships, typically No. 2 (Bunker A), No. 4 or No. 5 (Bunker B), or No. 6 (Bunker C) fuel oil. Since No. 6 is most common, “bunker fuel” is often used synonymously with No. 6 fuel oil.

Burn Day
A day that is not officially determined by meteorologists and air quality managers to be a no-burn day. Burn days vary by air basin on any given day.

C

Cal/EPA
See *California Environmental Protection Agency*

California Air Resources Board (CARB)
The state agency responsible for air pollution control in California. CARB is responsible for attainment and maintenance of the state and federal air quality standards, California climate change programs, and is fully responsible for motor vehicle pollution control. It oversees county and regional air pollution management programs.

California Ambient Air Quality Standards (CAAQS)
A legal limit that specifies the maximum level and time of exposure in the outdoor air for a given air pollutant and which is protective of human health and public welfare. CAAQSs are recommended by the OEHHA and adopted into regulation by the ARB. CAAQSs are the standards which must be met per the requirements of the California Clean Air Act (CCAA).

California Clean Air Act (CCAA)
State legislation enacted in 1988, and amended in 1992 and 1996, mandating a planning process to attain state ambient air quality standards.

California Air Pollution Control Officers Association (CAPCOA)
A nonprofit association of the air pollution control officers from all 35 air quality agencies throughout California. CAPCOA was formed in 1975 to promote clean air and to provide a forum for sharing of knowledge, experience and information among the air quality regulatory agencies around the state. CAPCOA is an organization of air quality professionals who promote unity and efficiency and strive to encourage consistency in methods and practices of air pollution control.

California Environmental Protection Agency (Cal/EPA)
A state government agency established in 1991 for unifying environmental activities related to public health protection in the State of California. There are five boards, departments and offices under the organization of Cal/EPA including the California Air Resources Board (ARB), State Water Resources Control Board (SWRCB) and its nine Regional Water Quality Control Boards (RWQCB), Department of Pesticide Regulation (DPR), Department of Toxic Substances Control (DTSC) and Office of Environmental Health Hazard Assessment (OEHHA). The Cal/EPA boards, departments and offices are directly responsible for implementing California environmental laws, or play a cooperative role with other regulatory agencies at regional, local, state and federal levels.

California Environmental Quality Act (CEQA)
A California law that sets forth a process for public agencies to make informed decisions on discretionary project approvals. The process aids decision-makers to determine whether any environmental impacts are associated with a proposed project. It requires environmental impacts associated with a proposed project to be eliminated or reduced and that air quality mitigation measures are implemented.

Cap-and-Trade
Cap-and-trade is a regulatory approach used to control pollution by setting a firm cap on allowed emissions while employing market mechanisms to achieve emissions reductions while driving costs down. In a cap-and-trade program, a limit, or cap is put on the amount of greenhouse gases that can be emitted.

CARB Gasoline, California Reformulated Gasoline (CaRFG)
Gasoline sold, intended for sale, or made available for sale as a motor vehicle fuel in California subject to the California reformulated gasoline standards.

Carbon Capture and Sequestration (CCS)
The process of capturing CO2 from a stationary source, followed by compressing, transporting and injecting it into a suitable geologic formation where it will be sequestered.

Carbon Dioxide (CO2)
Colorless, odorless, non-poisonous gas that results from fossil fuel combustion and is a normal constituent of ambient air.

Carbon Dioxide Equivalent (CO2E)
The amount of carbon dioxide by weight that would produce the same global warming impact as a given weight of another greenhouse gas, based on the best available science, including from the Intergovernmental Panel on Climate Change.

Carbon Monoxide (CO)
A colorless, odorless, toxic gas produced by the incomplete combustion of carbon-containing substances. One of the major air pollutants, it is emitted in large quantities by exhaust from gasoline-powered vehicles.
Carbon Sequestration
The process of removing carbon dioxide (CO2) from the atmosphere by storing it in a carbon reservoir other than the atmosphere. Sequestration enhances carbon storage in trees and soils, preserves existing tree and soil carbon and reduces emissions of CO2, methane (CH4) and nitrous oxide (N2O).
Carcinogen
Any substance that can cause or contribute to the production of cancer.
Cargo Handling Equipment (CHE)
Off-road vehicle used to lift or move container, bulk, or liquid cargo carried by ship, train, or another vehicle, within an intermodal facility. Equipment includes but is not limited to cranes, yard tractors, top handlers, side handlers, forklifts, loaders, sweepers, excavators, reach stackers, and dozers.
Carl Moyer Fund
A multi-million dollar incentive grant program designed to encourage reduction of emissions from heavy-duty engines. The grants cover the additional cost of cleaner technologies for on-road, off-road, marine, locomotive and agricultural pump engines, as well as forklifts and airport ground support equipment.
Catalyst
A substance that can increase or decrease the rate of a chemical reaction between the other chemical species without being consumed in the process.
Certified, Certification
The formal process where the manufacturer of a vehicle, product, or process demonstrates compliance with all applicable regulations and is granted permission to market, sell, or deliver the item in California. Certification in California is usually indicated by the granting of an Executive Order (EO).
Chronic
Marked by long duration or frequent recurrence, as with a chronic disease.
Chronic Exposure
Long-term exposure, usually lasting one year to a lifetime.
Chronic Health Effect
A health effect that occurs over a relatively long period of time (e.g., months or years).
Clean Air Act (CAA)
Long-standing federal legislation that is the legal basis for the national clean air programs, last amended in 1990.
Clean Vehicle Rebate Project (CVRP)
Incentive program that encourages zero-emission vehicle deployment by providing grants to eligible vehicles.
Climate Change
See *Global Warming*

Community Air Protection Program (CAPP)
See *AB 617*

Compressed Natural Gas (CNG)
Natural gas that is primarily composed of methane and is stored at a higher pressure; typically used as an alternative fuel to gasoline or diesel.

Conformity
A demonstration of whether a federally supported activity is consistent with the State Implementation Plan (SIP) -- per Section 176 (c) of the Clean Air Act. Transportation conformity refers to plans, programs and projects approved or funded by the Federal Highway Administration or the Federal Transit Administration. General conformity refers to projects approved or funded by other federal agencies.

Consumer Products
Products such as hairspray, detergents, cleaning compounds, polishes, lawn and garden products, personal care products and automotive specialty products that are part of our everyday lives and, through consumer use, may produce volatile organic air emissions which contribute to air pollution.

Continuous Emission Monitor (CEM)
A type of emissions monitoring device installed to operate continuously inside of a smoke stack or other emissions source.

Control Techniques Guidelines (CTG)
Guidance documents issued by U.S. EPA that define reasonably available control technology (RACT) to be applied to existing facilities that emit excessive quantities of air pollutants; they contain information both on the economic and technological feasibility of available techniques.

Cost-Effectiveness
The cost of an emission control measure assessed in terms of dollars-per-pound, or dollars-per-ton, of air emissions reduced

Criteria Air Pollutant
An air pollutant for which acceptable levels of exposure can be determined and for which an ambient air quality standard has been set. Examples include: ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, PM10 and PM2.5. The term "criteria air pollutants" derives from the requirement that the U.S. EPA must describe the characteristics and potential health and welfare effects of these pollutants. The U.S. EPA and ARB periodically review new scientific data and may propose revisions to the standards as a result.

D

Degreaser
Equipment that removes grease, dirt, or unwanted materials from any part or product. Degreasers typically use solvents, as liquid baths or condensing vapors, to remove such material.

Design Value (DV)
The pollutant concentration used by air quality managers for designating attainment status of an air district with respect to the state and federal ambient air quality standards. Generally, the designation value is the highest concentration that remains after excluding certain qualifying values. For a specific pollutant, the designation value for the state and federal standards may not be the same.

Diesel engine
A type of internal-combustion engine that uses low-volatility petroleum fuel and fuel injectors, and initiates combustion using compression ignition (as opposed to spark ignition, which is used with gasoline engines).

Diesel Particulate Matter (Diesel PM)
The portion of the exhaust from a diesel fueled compression ignition engine which is collected via a particulate matter sampling method. Diesel PM consists of several constituents, including: an elemental carbon fraction, a soluble organic fraction and a sulfate fraction. The majority of diesel PM (i.e., 98%) is smaller than 10 microns in diameter.

Dose
The amount of a pollutant that is absorbed. A level of exposure which is a function of a pollutant's concentration, the length of time a subject is exposed and the amount of the pollutant that is absorbed. The concentration of the pollutant and the length of time that the subject is exposed to that pollutant determine dose.

Dose-Response
The relationship between the dose of a pollutant and the response (or effect) it produces on a biological system.

Dust
Solid particulate matter that can become airborne.

E

Emission (or Emissions)
Released or discharged air contaminants in the ambient air from any source.

Emission factor
The relationship between the amount of pollution produced and the amount of raw material processed or burned. For example, the emission factor for oxides of nitrogen from fuel oil combustion in an industrial boiler would be the number of pounds of oxides of nitrogen emitted per 1000 gallons of fuel oil burned. By using the emission factor of a pollutant and specific data regarding quantities of material used by a given source, it is possible to compute emissions for the source. This approach is used in preparing an emissions inventory.

Emission inventory
A list of air pollutants emitted into a community's atmosphere in amounts (commonly tons) per day or year, by type of source.

Emission Offsets (Emissions Trading)
A rule-making concept whereby approval of a new or modified stationary source of air pollution is conditional on the reduction of emissions from other existing stationary sources of air pollution. These reductions are required in addition to reductions required by best available control technology.

Emission Permit
A non-transferable or tradable allocation of entitlements by a government to an individual firm to emit a specified amount of a substance.

Emission Rate
The weight of a pollutant emitted per unit of time (e.g., tons/year).

Emission standard
The maximum amount of pollution that is allowed to be discharged from a polluting source. For example, the number of pounds of dust that may be emitted per hour from an industrial process.

Environmental Justice (EJ)
The fair treatment of people of all races and incomes with respect to development, implementation and enforcement of environmental laws, regulations and policies.

Environmental Protection Agency (EPA)
The federal agency responsible for control of air and water pollution, toxic substances, solid waste, and cleanup of contaminated sites.

Evaporation
The physical transformation of a liquid to a gas at any temperature below its boiling point.

Evaporative Emissions
Emissions from evaporating gasoline, which can occur during vehicle refueling, vehicle operation and even when the vehicle is parked. Evaporative emissions can account for two-thirds of the hydrocarbon emissions from gasoline-fueled vehicles on hot summer days.

Exceedance
A measured level of an air pollutant higher than the national or state ambient air quality standard.

Executive Order (EO)
The legal document that indicates that a product subject to ARB regulations has in fact meet those requirements and can be offered for sale in California. The Executive Order, or EO, also lists important compliance information such as the legal description of the product and manufacturer, the actual standards met, when the executive order was granted and any conditions of the certification.

Exposure
The concentration of the pollutant in the air multiplied by the population exposed to that concentration over a specified time period.

F

Federal Clean Air Act (FCAA)
A federal law passed in 1970 and amended in 1974, 1977 and 1990 that forms the basis for the national air pollution control effort. Basic elements of the act include national ambient air quality standards for major air pollutants, mobile and stationary control measures, air toxics standards, acid rain control measures and enforcement provisions. For more information, visit the Federal Clean Air Act.

Federal Implementation Plan (FIP)
In the absence of an approved State Implementation Plan (SIP), a plan prepared by the U.S. EPA that provides measures that nonattainment areas must take to meet the requirements of the Federal Clean Air Act.

Fleet
The total collection of vessels, vehicles, or mobile equipment owned, rented, or leased by an owner or operator in an air district or distinct locale within Regulated California Waters or the statewide population of a specific vessel type.

Flexible Fuel Vehicle (FFV)
Vehicles that can use either alcohol fuels (methanol or ethanol) or a combination of alcohol fuel and unleaded gasoline.

Fossil fuels
Coal, oil, and natural gas; called fossil fuels because they are the remains of ancient plant and animal life.

Fuel Cell
An electrochemical cell that captures the electrical energy of a chemical reaction between fuels such as liquid hydrogen and liquid oxygen and converts it directly and continuously into the energy of a direct electrical current.

Fugitive Dust
Dust particles that are introduced into the air through certain activities such as soil cultivation, or vehicles operating on open fields or dirt roadways. This is a subset of fugitive emissions.

Fugitive Emissions
Emissions not caught by a capture system due to equipment leaks, evaporative processes and windblown disturbances.

G

Gas Turbine
An engine that uses a compressor to draw in air and compress it. Fuel is then added to the air and combusted in a combustor. Hot combustion gases exiting the engine turn a turbine which also turns the compressor. The engine's power output can be delivered from the compressor or turbine side of the engine.

Global Warming
An increase in the temperature of the Earth's troposphere. Global warming has occurred in the past as a result of natural influences, but the term is most often used to refer to the warming predicted by computer models to occur as a result of increased emissions of greenhouse gases.

Global Warming Potential (GWP)
The relative warming of a greenhouse gas over a specified period of time as compared to carbon dioxide (GWP of 1). GWP allows for the conversion of different greenhouse gas emissions into the same emissions unit, carbon dioxide equivalents (CO2E).

Goods Movement
The processes and activities involved in the pickup, movement and delivery of goods (agricultural, consumer, industrial products and raw materials) from producers/points of origin to consumers/point of use or delivery. 'Goods movement' relies on a series of transportation, financial and information systems for this to occur, that involves an international, national, state, regional and local networks of producers and suppliers, carriers and representative agents from the private sector, the public sector (federal, state, regional and local governmental agencies) and the general public.

Greenhouse Effect
The warming effect of the Earth's atmosphere. Light energy from the sun which passes through the Earth's atmosphere is absorbed by the Earth's surface and re-radiated into the atmosphere as heat energy. The heat energy is then trapped by the atmosphere, creating a situation similar to that which occurs in a car with its windows rolled up. A number of scientists believe that the emission of CO2 and other gases into the atmosphere may increase the greenhouse effect and contribute to global warming.

Greenhouse Gases (GHG)
Atmospheric gases such as carbon dioxide, methane, chlorofluorocarbons, nitrous oxide, ozone, and water vapor that slow the passage of re-radiated heat through the Earth’s atmosphere.

H

Harbor Craft
Any private, commercial, government, or military marine vessel including, but not limited to, passenger ferries, tugboats, towboats, push-boats, crew vessels, work boats, pilot vessels, supply boats, research vessels, United States Coast Guard vessels, hovercraft, emergency response harbor craft, and barge vessels that do not otherwise meet the definition of ocean-going vessels or recreational vessels.

Hazardous Air Pollutant (HAP)
An air pollutant listed under section 112 (b) of the Federal Clean Air Act as particularly hazardous to health. Emission sources of hazardous air pollutants are identified by U.S. EPA and emission standards are set accordingly.

Haze (or Hazy)
A phenomenon that results in reduced visibility due to the scattering of light caused by aerosols. Haze is caused in large part by man-made air pollutants.

Health risk
The probability that exposure to a given set of toxic air contaminants will result in an adverse health effect. The health risk is affected by several factors: the amount and toxicity of emissions; the weather; how far sources are from people; the distance between sources; and the age, health and lifestyle of the people living and working at the receptor location. The term "risk" usually refers to the increased chance of contracting cancer as a result of an exposure and is expressed as a probability, e.g., chances-in-a-million.

Health Risk Assessment (HRA)
A document that identifies the risks and quantities of possible adverse health effects that may result from exposure to emissions of toxic air contaminants. A health risk assessment cannot predict specific health effects; it only describes the increased possibility of adverse health effects based on the best scientific information available.

Health-Based Standard (Primary Standard)
Dosage of air pollution determined to protect against human health effects such as asthma, emphysema and cancer.

Heavy Duty Vehicle
Any motor vehicle having a gross vehicle weight rating greater than 14,000 pounds.

Heavy Duty Vehicle Inspection Program (HDVIP)
This regulation authorizes random roadside smoke opacity testing of heavy-duty diesel trucks and buses. The opacity of exhaust emitted from these engines must not exceed 40 percent (1991 and newer engine model years) or 55 percent (all pre-1991 engines). Gasoline and diesel trucks and buses are also inspected for tampering and for engine certification label compliance.

Hot Spot
A location where emissions from specific sources may expose individuals and population groups to elevated risks of adverse health effects (including, but not limited to, cancer) and contribute to the cumulative health risks.

Hydrocarbon
Any of a vast number of compounds containing carbon and hydrogen in various combinations; found especially in fossil fuels. Some of the hydrocarbon compounds are major air pollutants; they may be active participants in the photochemical process or affect health.

I

Idling
The act of leaving a vehicle's engine running while the vehicle stays stationary.

Indirect Source
Any facility, building, structure, or installation, or combination thereof, which generates or attracts mobile source activity that results in emissions of any pollutant (or precursor) for which there is a state ambient air quality standard. Examples of indirect sources include employment sites, shopping centers, sports facilities, housing developments, airports, commercial and industrial development and parking lots and garages.

Indirect Source Control Program
Rules, regulations, local ordinances and land use controls and other regulatory strategies of air pollution control districts or local governments used to control or reduce emissions associated with new and existing indirect sources. Indirect source control programs include regulatory strategies such as transportation control measures (e.g., South Coast's Regulation XV for employer-based trip reduction); parking charges; land use controls that reduce the need for vehicle travel and increase transit, bicycle and pedestrian access; and, source-specific regulations such as truck idling and travel schedule requirements.

Indirect Source Review (ISR)
A major component of an indirect source control program which applies to new and modified indirect sources. Strategies for indirect source review include permit programs, review and comment on new and modified indirect source projects through the California Environmental Quality Act (CEQA) process and coordination of air quality, transportation and land use policies through local government general plans. Indirect source review reduces emissions from new and modified sources through best available mitigation measures and additional offsite mitigation such as offsets and mitigation fees.

Individual Cancer Risk
The probability, expressed as chances in a million, that a person experiencing 70 years of continuous area-wide outdoor exposure to a toxic air contaminant will develop cancer.

Indoor Air Pollution
Air pollutants that occur within buildings or other enclosed spaces, as opposed to those occurring in outdoor, or ambient air. Some examples of indoor air pollutants are nitrogen oxides, smoke, asbestos, formaldehyde and carbon monoxide.

Industrial Source
Any of a large number of sources -- such as manufacturing operations, oil and gas refineries, food processing plants and energy generating facilities -- that emit substances into the atmosphere.

Inspection and Maintenance Program (I/M Program)
A motor vehicle inspection program implemented *BAR*. The purpose is to reduce emissions by assuring cars are running properly. Designed to identify vehicles in need of maintenance and to assure the effectiveness of their emission control systems on a biennial basis. Enacted in 1979 and strengthened in 1990. (Also known as the "Smog Check" program.)

Intermodal Facility
Any facility used in the movement of cargo by more than one means of conveyance, such as ship to truck, ship to rail, etc.

Internal Combustion Engine (ICE)
An engine in which both the heat energy and the ensuing mechanical energy are produced inside the engine.

Inversion
Phenomenon of a layer of warm air pressing down on cooler air below it. Inversions are a special problem because they prevent the natural dispersion and dilution of air contaminants.

J

K

L **Lead (Pb)**
A gray-white metal that is soft, malleable, ductile and resistant to corrosion. Sources of lead resulting in concentrations in the air include industrial sources and crustal weathering of soils followed by fugitive dust emissions. Health effects from exposure to lead include brain and kidney damage and learning disabilities. Lead is the only substance which is currently listed as both a criteria air pollutant and a toxic air contaminant.

Light-Duty Vehicle (LDV)
Any motor vehicle with a gross vehicle weight of < 6,000 lbs.

Line Haul Locomotive
The movement of trains between terminals and stations on the main or branch lines of the road, exclusive of switching movements.

Liquified Natured Gas (LNG)
Natural gas that has been converted to liquid form for storage or shipment.

Liquified Petroleum Gas (LPG)
A compressed gas that consists of flammable hydrocarbons (such as propane and butane) and is used especially as fuel or as raw material for chemical synthesis.

Low Carbon Fuels Standard (LCFS)
LCFS is a discreet early action measure of the Global Warming Solutions Act of 2006. This regulation reduces the carbon intensity (greenhouse gas emissions per unit of energy in the fuel) of transportation fuels by 10 percent by 2020.

Low Emission Vehicle (LEV)
A vehicle that meets the ARB's low emission vehicle standards.

Low Emission Vehicle II (LEV II)
California exhaust emission standards for 2004 and subsequent model passenger cars, light-duty trucks and medium-duty vehicles. Find more information at "Drive Clean."

Low NOx Burners
One of several combustion technologies used to reduce emissions of nitrogen oxides.

Lowest Achievable Emission Rate (LAER)
Under the Clean Air Act, the rate of emissions that reflects (a) the most stringent emissions limitation in the state implementation plan identified for a source unless the owner or operator demonstrates such limitations are not achievable or (b) the most stringent emissions limitation achieved in practice, whichever is more stringent.

M

Major source
A stationary facility that emits a regulated pollutant in an amount exceeding the threshold level depending on the location of the facility and attainment with regard to air quality status.

Maximum Achievable Control Technology (MACT)
EPA standards mandated by the 1990 amendments to the federal Clean Air Act for the control of toxic emissions from various industries. Industries range from dry cleaners to petroleum refineries.

Medium Duty Vehicle (MDV)
Any pre-1995 model year heavy-duty vehicle having a manufacturer's gross vehicle weight rating of 8,500 pounds or less; any 1992 through 2006 model-year heavy-duty low-emission, ultra-low-emission, super-ultra-low emission or zero-emission vehicle certified to standards in section 1960.1(h)(2) having a manufacturer's gross vehicle weight rating of 14,000 pounds or less; any 1995 through 2003 model year heavy-duty vehicle certified to the standards in section 1960.1(h)(1) having a manufacturer's gross vehicle weight rating of 14,000 pounds or less; and any 2000 and subsequent model heavy-duty low-emission, ultra-low-emission, super-ultra-low emission or zero-emission vehicle certified to the standards in Section 1961(a)(1) or 1962 having a manufacturer's gross vehicle weight rating between 8,500 and 14,000 pounds.

Micron
A unit of length equal to one thousandth of a millimeter, or about 1/25,000 of an inch.

Mixing depth
The expanse in which air rises from the earth and mixes with the air above it until it meets air of equal or warmer temperature.

Mobile source
A moving source of air pollution; includes cars, trucks, motorcycles, and airplanes.

Monitoring
The periodic or continuous sampling and analysis of air pollutants in ambient air or from individual pollution sources.

Morbidity
Rate of disease incidence.

Mortality
Death rate.

Motor Vehicle Fee Program
See *AB 2766*

Multimedia Exposure
Exposure to a toxic substance from multiple pathways such as air, water, soil, food and breast milk.

N

National Ambient Air Quality Standards (NAAQS)
Standards established by the U.S. EPA that apply for outdoor air throughout the country. There are two types of NAAQS. Primary standards set limits to protect public health and secondary standards set limits to protect public welfare. For more information, visit our AAQS website.

National Emissions Standards for Hazardous Air Pollutants (NESHAP)
Emissions standards set by EPA for air pollutants not covered by NAAQS that may cause an increase in deaths or in serious, irreversible, or incapacitating illness; includes toxic emissions such as benzene.

Natural gas
Natural gas is a mixture of hydrocarbons (mainly methane [CH4]) and is produced either from gas wells or in conjunction with crude oil production. Because of the gaseous nature of this fuel, it must be stored onboard a vehicle in either a compressed gaseous state (CNG) or in a liquefied state (LNG).

Natural Sources
Non-manmade emission sources, including biological and geological sources, wildfires and windblown dust.

Naturally Occurring Asbestos (NOA)
The six asbestos minerals that have been identified as toxic air contaminants and occur naturally in rocks and soils. During many earth-disturbing activities, asbestos minerals may be released from rocks and soils, become airborne and inhaled deep into the lung.

New Source Performance Standards (NSPS)
Uniform national U.S. EPA air emission standards that limit the amount of pollution allowed from new sources or from modified existing sources.

New Source Review (NSR)
A Clean Air Act requirement that State Implementation Plans must include a permit review, which applies to the construction and operation of new and modified stationary sources in nonattainment areas, to ensure attainment of National Ambient Air Quality Standards. The two major requirements of NSR are Best Available Control Technology and Emission Offsets.

Nitric Oxide (NO)
Precursor of ozone, nitrogen dioxide (NO2), and nitrate; usually emitted from combustion processes. Converted to NO2 in the atmosphere, it then becomes involved in the photochemical process and/or particulate formation.

Nitrogen Oxides (Oxides of Nitrogen, NOx)
A general term pertaining to compounds of nitric oxide (NO), nitrogen dioxide (NO2) and other oxides of nitrogen. Nitrogen oxides are typically created during combustion processes and are major contributors to smog formation and acid deposition. NO2 is a criteria air pollutant and may result in numerous adverse health effects.

Non-Carcinogenic Effects
Non-cancer health effects which may include birth defects, organ damage, morbidity and death.

Non-Methane Hydrocarbon (NMHC)
The sum of all hydrocarbon air pollutants except methane. NMHCs are significant precursors to ozone formation.
Non-Point Sources
Diffuse pollution sources that are not recognized to have a single point of origin.
Non-Road Emissions
Pollutants emitted by a variety of non-road sources such as farm and construction equipment, gasoline-powered lawn and garden equipment, and power boats and outboard motors.
Non-Road Engine
Any engine that is in or on a piece of equipment that is self-propelled or serves a dual purpose by both propelling itself and performing another function, such as lawnmowers and string trimmers; or is in or on a piece of equipment that is intended to be propelled while performing its function, such as lawnmowers and string trimmers; or that, by itself or in a piece of equipment, is portable or transportable.
Nonattainment area
Defined geographic area that does not meet one or more of the federal air quality standards for the criteria pollutants.

O

Office of Environmental Health Hazard Assessment (OEHHA)
A department within the California Environmental Protection Agency that is responsible for evaluating chemicals for adverse health impacts and establishing safe exposure levels. OEHHA also assists in performing health risk assessments and developing risk assessment procedures for air quality management purposes.
Offsets
Offsets are tradable credits that represent greenhouse gas emissions reductions that are made in areas or sectors not covered by a cap-and-trade program. Under a greenhouse gas cap-and-trade program, covered entities could buy offset credits in lieu of buying allowances or reducing their greenhouse gas emissions on-site. One offset credit would be equal to one metric ton of greenhouse gas emissions. Offsets must meet rigorous criteria that demonstrate that the emissions reductions are real, permanent, verifiable, enforceable and quantifiable.
Onboard Diagnostics (OBD)
Devices that are incorporated into the computer systems of new motor vehicles to monitor components and systems that affect emissions when malfunctioning. If a problem is detected, the OBD system illuminates a warning lamp on the vehicle instrument panel to alert the driver. This warning lamp typically contains the phrase Check Engine or Service Engine Soon. The system will also store important information about the detected malfunction so that a repair technician can accurately find and fix the problem.

On-Road (On-Road Vehicle)
Vehicles that are intended by their manufacturer for use on public highways. On-road vehicles must be certified by their manufacturer with the U.S. Department of Transportation (DOT), National Highway Traffic Administration (NHTSA), as compliant with on-highway safety standards as well as certified to all applicable ARB and U.S. EPA on-road emission standards. Compliance with these standards is indicated by separate safety and emissions labels on the vehicle.

Onboard Vapor Recovery
Devices placed on vehicles to capture gasoline vapor during refueling and then route the vapors to the engine when the vehicle is started so that they can be efficiently burned.

Opacity
The amount of light obscured by particle pollution in the atmosphere. Opacity is used as an indicator of changes in performance of particulate control systems.

Open burning
The uncontrolled burning of waste materials in the open, in outdoor incinerators, or in an open dump, either intentionally or accidentally.

Organic compounds
A large group of chemical compounds that contain carbon. All living organisms are made up of organic compounds. Some types of organic gases, including olefins, substituted aromatics and aldehydes, are highly reactive -- i.e., have high ozone-producing potential.

Oxidant
An air pollutant containing oxygen that can react chemically with other substances. Ozone and nitrogen compounds are examples of oxidants.

Oxidation
The chemical reaction of a substance with oxygen or a reaction in which the atoms in an element lose electrons and its valence is correspondingly increased.

Oxides of Nitrogen
See *Nitrogen Oxides*

Ozone (O3)
A strong smelling, pale blue, reactive toxic chemical gas consisting of three oxygen atoms. It is a product of the photochemical process involving the sun's energy and ozone precursors, such as hydrocarbons and oxides of nitrogen. Ozone exists in the upper atmosphere ozone layer (stratospheric ozone) as well as at the Earth's surface in the troposphere (ozone). Ozone in the troposphere causes numerous adverse health effects and is a criteria air pollutant. It is a major component of smog.

Ozone depletion
Destruction of the stratospheric ozone layer, which shields the earth from ultraviolet radiation. This destruction is caused by the breakdown of certain chlorine and/or bromine-containing compounds (chlorofluorocarbons or halons) that catalytically destroy ozone molecules in the stratosphere.

Ozone Generator
Some indoor "air purifiers" or air cleaners emit ozone, a major component of outdoor smog, either intentionally or as a by-product of their design. Those that intentionally emit ozone are often called "ozone generators."

Ozone Layer
A layer of ozone in the lower portion of the stratosphere -- 12 to 15 miles above the Earth's surface -- which helps to filter out harmful ultraviolet rays from the sun. It may be contrasted with the ozone component of photochemical smog near the Earth's surface, which is harmful.

Ozone Precursors
Chemicals such as non-methane hydrocarbons and oxides of nitrogen, occurring either naturally or as a result of human activities, which contribute to the formation of ozone, a major component of smog.

P

Particulate
A particle of solid or liquid matter; soot, dust, aerosols, fumes, and mists.

Particulate Matter (PM)
Any material, except pure water, that exists in the solid or liquid state in the atmosphere. The size of particulate matter can vary from coarse, wind-blown dust particles to fine particle combustion products.

Parts per million (PPM)
The number of parts of a given pollutant in a million parts of air.

Periodic Smoke Inspection Program (PSIP)
Regulation requiring fleet owners of two or more heavy-duty diesel powered trucks or buses to perform annual smoke opacity inspections on each vehicle's engine that is four years old or older. Engines that exceed opacity standards must be repaired to be brought into compliance. Fleet owners must keep records of the annual smoke test for two years and make these records available to ARB upon request.

Permit to Operate (P/O)
An operational permit issued annually by the Air District to sources that meet regulation requirements.

Persistence
Refers to the length of time a compound stays in the atmosphere, once introduced. A compound may persist for less than a second or indefinitely.

Photochemical process
The process by which sunlight acts upon various compounds, causing a chemical reaction to occur.

Photochemical reaction
A term referring to chemical reactions brought about by the light energy of the sun. The reaction of nitrogen oxides with hydrocarbons in the presence of sunlight to form ozone is an example of a photochemical reaction.

Photochemical smog
Produced when hydrocarbons and oxides of nitrogen combine in the presence of sunlight to form ozone.

Plume
A visible or measurable discharge of a contaminant from a given point of origin that can be measured according to the Ringelmann scale.

PM
See *Particulate Matter*

PM10 (particulate matter less than 10 microns)
Tiny solid or liquid particles of soot, dust, smoke, fumes, and aerosols. The size of the particles (10 microns or smaller, about 0.0004 inches or less) allows them to easily enter the air sacs in the lungs where they may be deposited, resulting in adverse health effects. PM10 also causes visibility reduction and is a criteria air pollutant.

PM2.5 (particulate matter less than 2.5 microns)
Tiny solid or liquid particles, generally soot and aerosols. The size of the particles (2.5 microns or smaller, about 0.0001 inches or less) allows them to easily enter the air sacs deep in the lungs where they may cause adverse health effects; PM2.5 also causes visibility reduction.

Point Sources
Specific points of origin where pollutants are emitted into the atmosphere such as factory smokestacks. (See also *Area-Wide Sources* and *Fugitive Emissions*.)

Precursor
Compounds that change chemically or physically after being emitted into the air and eventually produce air pollutants. For example, organic compounds are precursors for ozone.

Prescribed Burning
Planned application of fire to vegetation to achieve any specific objective on lands selected in advance of that application. Governed under the Agricultural Burning Guidelines.

Prevention of Significant Deterioration (PSD)
A permitting program for new and modified stationary sources of air pollution located in an area that attains or is unclassified for national ambient air quality standards (NAAQS). The PSD program is designed to ensure that air quality does not degrade beyond those air quality standards or beyond specified incremental amounts. The PSD permitting process requires new and modified facilities above a specified size threshold to be carefully reviewed prior to construction for air quality impacts. PSD also requires those facilities to apply BACT to minimize emissions of air pollutants. A public notification process is conducted prior to issuance of final PSD permits.

Primary Particles
Particles that are directly emitted from combustion and fugitive dust sources.

Q

R

Reactive Organic Gases (ROG)
A photochemically reactive chemical gas, composed of non-methane hydrocarbons, that may contribute to the formation of smog. Also sometimes referred to as Non-Methane Organic Gases (NMOGs).

Reactivity (or Hydrocarbon Photochemical Reactivity)
A term used in the context of air quality management to describe a hydrocarbon's ability to react (participate in photochemical reactions) to form ozone in the atmosphere. Different hydrocarbons react at different rates. The more reactive a hydrocarbon, the greater potential to form ozone.

Reasonable Further Progress (RFP)
A specified rate of progress toward meeting an air quality standard, as set forth in law or in a plan.

Reasonably Available Control Measures (RACM)
A broadly defined term referring to technologies and other measures that can be used to control pollution. They include Reasonably Available Control Technology and other measures.

Reasonably Available Control Technology (RACT)
Air pollution abatement equipment that is both technologically feasible and cost effective. Control techniques defined in U.S. EPA guidelines for limiting emissions from existing sources in nonattainment areas. RACTs are adopted and implemented by states and local air districts.

Reasonably Available Retrofit Control Technology (RARCT)
See *Best Available Control Technology*

Reciprocating Internal Combustion Engine (RICE)
Engine in which air and fuel are introduced into cylinders, compressed by pistons and ignited by a spark plug or by compression. Combustion in the cylinders pushes the pistons sequentially, transferring energy to the crankshaft, causing it to rotate.

Reference Exposure Level (REL)
A term used in risk assessment. It is the concentration at or below which no adverse health effects are anticipated for a specified exposure period..

Reformulated Gasoline (RFG)
Gasoline with a different composition from conventional gasoline (e.g., lower aromatics content) that results in the production of lower levels of air pollutants.

Regional Air Quality Strategy (RAQS)
Originally adopted by the San Diego County Air Pollution Control Board in 1992, the RAQS is a plan addressing state ozone standards that is periodically updated by law as new emission control measures become technologically feasible, improve air quality, or protect public health. These measures reduce ozone-forming emissions from stationary sources, such as industrial operations and manufacturing facilities. The individual measures in the RAQS are then developed into proposed rules that are reviewed by the public and considered for adoption by the Governing Board. Once adopted, the District assists affected facilities to help understand and comply with new requirements that may affect their operations.

Regional Haze
The haze produced by a multitude of sources and activities which emit fine particles and their precursors across a broad geographic area. National regulations require states to develop plans to reduce the regional haze that impairs visibility in national parks and wilderness areas.

Renewable Fuel Standard (RFS)
A federal program to increase the volume of renewable fuels used in transportation fuels. Created under the Energy Policy Act of 2005, and revised by the Energy Independence and Security Act of 2007, the RFS program requires increasing annual volumes of renewable fuel, starting from 9 billion gallons in 2008 to 36 billion gallons by 2022. Within those total volumes, the RFS also requires certain volumes of specific fuels, such as cellulosic and advanced biofuels.

Residual Risk
The quantity of health risk remaining after application of emission control.

Ringelmann Chart
A series of charts, numbered 0 to 5, that simulate various smoke densities by presenting different percentages of black. A Ringelmann No. 1 is equivalent to 20% black; a Ringelmann No. 5 is 100% black. They are used for measuring the opacity or equivalent obscuration of smoke arising from stacks and other sources by matching the actual effluent with the various numbers, or densities, indicated by the charts.

Risk Assessment
An evaluation of risk which estimates the relationship between exposure to a harmful substance and the likelihood that harm will result from that exposure.

S

Sanctions
Actions taken against a state or local government by the federal government for failure to plan or to implement a State Implementation Plan (SIP). Examples include withholding of highway funds and a ban on construction of new sources of potential pollution.

Scoping Plan
AB 32 directed ARB to prepare a scoping plan for achieving the maximum technologically feasible and cost-effective reductions in greenhouse gas emissions by 2020. The scoping plan provides the outline for actions to reduce greenhouse gases in California. The approved scoping plan indicates how these emission reductions will be achieved from significant greenhouse gas sources via regulations, market mechanisms and other actions.

Scrubber
A device that uses a high energy liquid spray to remove aerosol and gaseous pollutants from an air stream. The gases are removed either by absorption or chemical reaction.

Secondary Particle
Particles that are formed in the atmosphere. Secondary particles are products of the chemical reactions between gases, such as nitrates, sulfur oxides, ammonia and organic products.

Selective Catalytic Reduction (SCR) System
An emission control system that reduces NOx emissions through the catalytic reduction of NOx in diesel exhaust to N2 and H2O by injecting nitrogen-containing compounds into the exhaust stream, such as ammonia or urea.

Sensitive Groups
Identifiable subsets of the general population that are at greater risk than the general population to the toxic effects of a specific air pollutant (e.g., infants, asthmatics, elderly).

Sequestration
See *Carbon Sequestration*

Shore Power
"Shore power", also known as Cold Ironing, refers to providing electrical power to a vessel that is docked. The purpose of shore power is to allow the vessel operator to turn off the vessel's auxiliary engines, which would normally be providing the necessary electricity. Although there are emissions associated with the generation of electricity used for shore power, those emissions are much less than those from the auxiliary engines, which burn diesel fuel.

Smog
A combination of smoke and other particulates, ozone, hydrocarbons, nitrogen oxides and other chemically reactive compounds which, under certain conditions of weather and sunlight, may result in a murky brown haze that causes adverse health effects. The primary source of smog in California is motor vehicles.

Smog Check Program
See *Inspection and Maintenance Program*

Solvent Base
Hydrocarbon-containing compounds such as paint thinner used for the purpose of thinning various coatings such as paint.

Soot
Very fine carbon particles that appear black when visible.

Source
Any place or object from which air pollutants are released. Sources that are fixed in space are stationary sources and sources that move are mobile sources.

Spray Booth
A power ventilated structure enclosing a coating operation, to confine and limit the escape of spray, vapor and residue and to safely conduct or direct them to an exhaust system. The spray booth contains and captures particulate emissions and vents them to a control device.

State Implementation Plan (SIP)
A plan prepared by states and submitted to U.S. EPA describing how each area will attain and maintain national ambient air quality standards. SIPs include the technical foundation for understanding the air quality (e.g., emission inventories and air quality monitoring), control measures and strategies and enforcement mechanisms. (See also *AQMP*.)

Stationary source
A fixed, non-mobile producer of pollution, usually at industrial or commercial facilities.

Storage tank
Any stationary container, reservoir, or tank used for the storage of liquids. District regulations usually only apply to the storage of organic liquids.

Stratosphere
The layer of Earth's atmosphere above the troposphere and below the mesosphere. It extends between 10 and 30 miles above the Earth's surface and contains the ozone layer in its lower portion. The stratospheric layer mixes relatively slowly; pollutants that enter it may remain for long periods of time.

Suggested Control Measure (SCM)
Model rule used by local air districts to use to control emissions from certain stationary sources of air pollution.

Sulfates
See *Sulfur Oxides*

Sulfur Dioxide (SO2)
Strong smelling, colorless gas that forms by the combustion of fossil fuels. Power plants, which may use coal or oil high in sulfur content, can be major sources of SO2. SO2 contribute to the problem of acid deposition. SO2 is a criteria air pollutant.

Sulfur Oxides
Pungent, colorless gases formed primarily by the combustion of sulfur-containing fossil fuels, especially coal and oil. Considered major air pollutants, sulfur oxides may impact human health and damage vegetation.

Switcher Engine
Locomotive engines that move rail cars around a rail yard.

T

Terminal
An intermediate gasoline distribution facility where delivery of gasoline to and from the facility is solely by pipeline.

Title III
A section of the 1990 amendments to the federal Clean Air Act that deals with the control of toxic air emissions.

Title V
A section of the 1990 modifications to the federal Clean Air Act that requires a federally enforceable operating permit for major sources of air pollution.

Total organic gases (TOG)
Gaseous organic compounds, including reactive organic gases and relatively unreactive organic gases, such as methane.

Total suspended particulates (TSP)
Particles of solid or liquid matter (such as soot, dust, aerosols, fumes and mist) up to approximately 30 microns in size.

Toxic Air Contaminant (TAC)
An air pollutant which may cause or contribute to an increase in deaths or in serious illness, or which may pose a present or potential hazard to human health. TACs are considered under the regulatory process (California Health and Safety Code section 39650 et seq.). Health effects to TACs may occur at extremely low levels, and it is typically difficult to identify levels of exposure which do not produce adverse health effects.

Toxics Best Available Control Technology (T-BACT)
Similar to BACT standards, except it applies to sources of toxic emissions. In many cases, it is the same as BACT. The standards are based on using the most up-to-date methods, systems, techniques, and production processes available to achieve the greatest feasible emission reductions. These are the most stringent requirements for new or modified sources and are determined on a case-by-case basis.

Toxic Hot Spot
Location where emissions from specific sources may expose individuals & population groups to elevated risks of adverse health effects -- including but not limited to cancer -- and contribute to the cumulative health risks of emissions from other sources in the area.

Transportation Control Measures (TCMs)
Strategies to reduce vehicle trips, vehicle use, vehicle miles traveled, vehicle idling, or traffic congestion for the purpose of reducing motor vehicle emissions.

Transportation Refrigeration Unit (TRU)
Diesel powered cooling units that are installed on vehicles used in transporting produce, meat, dairy products, and other perishable goods. TRUs are found on refrigerated vans, trucks, trailers, and railroad cars.

U

Ultra Low Sulfur Diesel (ULSD)
A term used to describe a standard for defining diesel fuel with a very low sulfur content. ULSD fuels reduce the amount of DPM emitted from diesel combustion engines.

Underground Storage Tank
A tank located completely or partially underground that is designed to hold gasoline or other petroleum products or chemical solutions.

Unit Risk Number
The number of potential excess cancer cases from a lifetime exposure to one microgram per cubic meter (µ/m3) of a given substance. For example, a unit risk value of 5.5x10-6 would indicate an estimated 5.5 cancer cases per million people exposed to an average concentration of 1 µ/m3 of a specific carcinogen for 70 years.

United States Environmental Protection Agency (USEPA)
See *Environmental Protection Agency*

Urban Airshed Model
A three-dimensional photochemical grid model designed to calculate the concentrations of both inert and chemically reactive pollutants in the atmosphere. It simulates the physical and chemical processes that affect pollution concentrations.

V

Vapor
The gaseous phase of liquids or solids at atmospheric temperature and pressure.

Vapor Pressure
Pressure expressed in millimeters of mercury (mm Hg) or pounds per square inch (PSI) that is characteristic at any given temperature of a vapor in equilibrium with its liquid/solid form.

Vapor Recovery Systems
Mechanical systems that collect and recover chemical vapors resulting from transfer of gasoline from operations such as tank-to-truck systems at refineries, tanker-to-pipeline systems at offshore oil operations and pump-to-vehicle systems at gasoline stations.

Variance
Permission granted for a limited time under stated conditions for a person or company to operate outside the limits prescribed in a regulation.

Vehicle Miles Traveled (VMT)
The miles traveled by motor vehicles over a specified length of time (e.g., daily, monthly or yearly) or over a specified road or transportation corridor.

Verified Diesel Emission Control Strategy (VDECS)
An emission control strategy designed primarily for the reduction of diesel particulate matter emissions that has been verified per the Verification Procedure, Warranty and In-Use Compliance Requirements for In-Use Strategies to Control Emissions from Diesel Engines (13 CCR Sections 2700-2710). Examples of diesel retrofit systems that may be verified include, but are not limited to, diesel particulate filters, diesel oxidation catalysts, fuel additives (e.g., fuel-borne catalysts), alternative diesel fuels, and combinations of the above.

Vessel Speed Reduction (VSR)
A way to reduce emissions of NOx, SOx, diesel PM and CO2 from oceangoing vessels. Emissions are decreased when vessels slow their speeds, thereby reducing the energy requirements of the main engine. The Ports of Los Angeles (POLA), Long Beach (POLB), and San Diego (POSD) currently have a voluntary VSR program in place which requests that vessels slow to 12 knots from certain distances from port (20 nautical miles (nm) for POSD and 20 or 40 nm for POLA and POLB). Ports typically offer incentives for complying.

Visibility
A measurement of the ability to see and identify objects at different distances. Visibility reduction from air pollution is often due to the presence of sulfur, nitrogen oxides, and PM.

Visibility Reducing Particles
Particles in the atmosphere that obstruct the range of visibility.

Volatile Organic Compound (VOC)
Carbon-containing compounds that evaporate into the air (with a few exceptions). VOCs contribute to the formation of smog and/or may themselves be toxic. VOCs often have an odor and some examples include gasoline, alcohol and the solvents used in paints.

W **Water Base**
Water used as the solvent for coatings such paint.
Water Solubility
The solubility of a substance in water provides information on the fate and transport in the environment. The higher the water solubility, the greater the tendency to remain dissolved and the less likely to volatilize from the water. Low water soluble substances will volatilize more readily in water and will partition to soil or bioconcentrate in aquatic organisms.
Welfare-Based Standard (Secondary Standard)
An air quality standard that prevents, reduces, or minimizes injury to agricultural crops and livestock, damage to and the deterioration of property and hazards to air and ground transportation.

X

Y

Z **Zero Emission Vehicle (ZEV)**
Vehicles which produce no emissions from the on-board source of power (e.g., an electric vehicle).

ATTACHMENT N

Endnotes

[1] H&SC §40925(b)
[2] Health endpoints include mortality, nonfatal heart attacks, infant mortality, hospital admissions (respiratory and cardiovascular), acute bronchitis, respiratory symptoms (upper and lower), emergency room visits for asthma, and asthma exacerbation.
[3] https://cobra.epa.gov/
[4] The 2022 RAQS specifically responds to planning requirements pursuant to state law for state ozone standards. The 2022 RAQS does not address federal air quality planning requirements for ozone or regionally required GHG or Climate Action plans, nor is it part of a State Implementation Plan (SIP) for federal air quality planning purposes.
[5] GHGs include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), black carbon, and fluorinated gases ("F-gases")
[6] https://www.sandiegocounty.gov/content/sdc/sustainability/regional-decarbonization/rdfsummary.html
[7] Governor Schwarzenegger Executive Order S-3-05 (2005) established a long-term goal of statewide GHG emission reduction of 80% below 1990 levels by 2050. California Senate Bill (SB) 32 mandated a shorter-term target, establishing statewide GHG emission reductions of 40% below 1990 levels by 2030. The California Air Resources Board (CARB), through its 2022 Scoping Plan Update, is now assessing a pathway statewide to achieve carbon neutrality no later than 2045.
[8] CARB has not reclassified the region to attainment of state PM2.5 standards yet due to (1) incomplete data, and (2) the use of non-California Approved Samplers (CAS). While data collected meets the requirements for designation of attainment with federal $PM_{2.5}$ standards, the data completeness requirements for state $PM_{2.5}$ standards substantially exceed federal requirements and mandates, and have historically not been feasible for most air districts to adhere to given local resources. The District has begun replacing most regional filter-based $PM_{2.5}$ monitors as they reach the end of their useful life with continuous $PM_{2.5}$ air monitors to ensure collected data meets stringent completeness requirements in the future. The District anticipates these new monitors will be approved as "CAS" monitors once CARB reviews/revises the list of approved monitors, which has not been updated since 2013.
[9] District Rules 1200, 1202, 1203, 1205, 1206, and 1210.
[10] https://www.sdapcd.org/permits/toxics-emissions/hot-spots/
[11] https://www.sandiegocounty.gov/content/sdc/sustainability/regional-decarbonization.html

[12] Ozone can also impact the agricultural and forest industries, slowing plant growth, reducing crop yields, and increasing susceptibility to disease, pests, and harsh weather.

[13] More information on the District's emission inventory can be found at https://www.sdapcd.org/content/sdapcd/permits/toxics-emissions.html. More information on CARB's statewide planning emission inventory can be found at https://ww2.arb.ca.gov/criteria-pollutant-emission-inventory-data.

[14] Federal Clean Air Act requirements are codified, as amended, in the U.S. Code at 42 U.S.C.
Sections 7401, et seq.

[15] *2020 Plan for Attaining the National Ambient Air Quality Standards for Ozone in San Diego County.*

[16] California Health & Safety Code (H&SC) §39000 et seq.

[17] Ozone, Carbon Monoxide, Sulfur Dioxide, or Nitrogen Dioxide.

[18] H&SC §40911(a).

[19] CARB has not reclassified San Diego County to attainment yet for the state PM2.5 standard due to (1) incomplete data, and (2) the use of non-California Approved Samplers (CAS). While data that has been collected meets the requirements for designation of attainment with federal PM2.5 standards, the data completeness requirements for state PM2.5 standards substantially exceeds federal requirements and mandates, and have historically not been feasible for most air districts to adhere to given local resources. The District has begun replacing most regional filter-based PM2.5 monitors as they reach the end of their useful life with continuous PM2.5 air monitors to ensure collected data meets stringent completeness requirements in the future. The District anticipates these new monitors will be approved as "CAS" monitors once CARB updates their list of approved CAS monitors, which has not been updated since 2013.

[20] CARB has not reclassified the region to attainment yet due to (1) incomplete data, and (2) the use of non-California Approved Samplers (CAS). While data collected meets the requirements for designation of attainment with federal $PM_{2.5}$ standards, the data completeness requirements for state $PM_{2.5}$ standards substantially exceed federal requirements and mandates, and have historically not been feasible for most air districts to adhere to given local resources. The District has begun replacing most regional filter-based $PM_{2.5}$ monitors as they reach the end of their useful life with continuous $PM_{2.5}$ air monitors to ensure collected data meets stringent completeness requirements in the future. The District anticipates these new monitors will be approved as "CAS" monitors once CARB reviews/revises the list of approved monitors, which has not been updated since 2013. California H&SC (40911) does not require air districts to submit a respective state attainment plan for PM standards.

[21] Not applicable in San Diego County.

[22] No information available.

[23] De Leon. https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201120120SB535

[24] Designations were initially made using CalEnviroScreen Version 2.0

[25] https://ww2.arb.ca.gov/news/carb-expands-number-california-disadvantaged-communities-statewide-community-air-protection
[26] The indicator for ozone was the mean of summer months (May through October) of the daily maximum eight-hour ozone concentration in parts per million (ppm) average over three years, which is a measurement used to represent short-term ozone health impacts.
[27] The census tract that exhibited the highest ozone percentile within the International Border community (census tract #6073010015) is furthest inland along the local foothills near the U.S.-Mexico border.
[28] https://insights.aclima.io/san-diego
[29] 10 parts per billion (ppb)
[30] 40 ppb
[31] https://www.epa.gov/sites/default/files/2018-04/documents/placeholder_2.pdf, Page 33 – EPA Response.
[32] https://ww2.arb.ca.gov/sites/default/files/classic/msprog/nvepb/macs/_MACs/mac9906/att.pdf
[33] https://www.portofsandiego.org/press-releases/general-press-releases/port-san-diego-purchases-all-electric-mobile-harbor-cranes
[34] Turner, A.D. (2016). A large increase in U.S. Methane emissions over the past decade inferred from satellite data and surface observations. *Geophysical Research Letter, 43.* doi:10.1002/2016GL067987
[35] Response #4. https://www.federalregister.gov/documents/2019/10/01/2019-21325/approval-of-air-quality-implementation-plans-california-south-coast-air-basin-1-hour-and-8-hour#footnote-33-p52011
[36] 4th National Climate Assessment. https://nca2018.globalchange.gov/chapter/13/
[37] The National Climate Assessment Model utilizes ozone data between 1995-2005.
[38] 1 parts per billion (ppb)
[39] 2 ppb
[40] https://ww2.arb.ca.gov/news/california-moves-accelerate-100-new-zero-emission-vehicle-sales-2035
[41] https://www.whitehouse.gov/briefing-room/statements-releases/2022/08/15/by-the-numbers-the-inflation-reduction-act/
[42] https://ww2.arb.ca.gov/sites/default/files/2022-08/2022_State_SIP_Strategy.pdf
[43] VOC, NOx, Carbon Monoxide, PM, and GHGs
[44] AB 423 (Gloria, 2019)
[45] SCAQMD. (2010). *SCAQMD Board Directs Further Development of Indirect Source Measures* [Press release]. Retrieved from https://www.aqmd.gov/docs/default-source/news-archive/2018/indirect-source-measures.pdf
[46] SCAQMD Rule 2305 (Warehouse Indirect Source Rule – Warehouse Actions and Investments to Reduce Emissions (WAIRE) Program
[47] https://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2021/2021-May7-027.pdf?sfvrsn=10, AQMD Master Responses Page 5.
[48] If a similar measure were adopted in San Diego County, a population-weight estimate of possible NOx emission reductions ranges from 0.16 to 0.39 tons per day.

[49] H&SC Section 40100.6.5 (a)(6)
[50] California Code of Regulations, title 17, Section 93118.5
[51] Feasible Measure" is not defined in the CCAA. However, the statutory criteria for assessing a potential control measure include cost-effectiveness, technological feasibility, total emission reduction potential, rate of emission reduction, public acceptability, and enforceability (H&SC §40922(a)). Similarly, transport mitigation regulations (17 CCR §§70600-01) define "all feasible measures" based on the "maximum degree of reductions achievable for emissions of ozone precursors, taking into account technological, social, environmental, energy and economic factors, including cost-effectiveness."
[52] H&SC §40925(b)
[53] See Table 6.
[54] See Table 7
[55] H&SC §40914
[56] H&SC §40924 and §40925
[57] H&SC §40925(b)
[58] Statistically derived values based on monitored air quality data. See Attachments C and D.
[59] Two additional sites, at Escondido and San Ysidro, are under construction and in the permitting process. Additional sites may also be deployed in the future to support efforts pursuant to AB 617 and under-resourced communities found within San Diego County.
[60] The 1979 national one-hour ozone standard was 0.120 ppm averaged over one hour and was attained when each monitor had no more than three exceedances over a three-year period. The EPA revoked this standard in 2005.
[61] The 1997 national eight-hour ozone standard was 0.08 ppm and was attained when the three-year average of the annual 4th-highest daily maximum eight-hour average ozone concentration at each monitor did not exceed it. The EPA revoked this standard in 2015.
[62] Photochemical modeling conducted separate to this RAQS Revision predicts San Diego County will attain the 0.075 ppm standard by 2026, and the 0.070 ppm by 2032.
[63] Between 2016 and 2050, the region's population is forecasted to increase by over 12% (from 3.3 million to 3.7 million) and employment by 25% (from 1.6 million to 2.0 million) according to SANDAG's 2021: San Diego Forward: The 2021 Regional Plan (December 2021), and vehicle miles traveled (VMT) by almost 22% (from 91 million to 111 million) according to CARB EMFAC2021 data.
[64] Source: CARB 2019 California Emissions Projection Analysis Model (CEPAM), Version 1.04.
[65] Source: CARB 2019 California Emissions Projection Analysis Model (CEPAM), Version 1.04.
[66] Source: CARB 2019 California Emissions Projection Analysis Model (CEPAM), Version 1.04.

[67] The three-year base period is 1986-1988 for the state one-hour or 2006-2008 for the state eight-hour for exposure indicators, and 1990-1992 for EPDC. No state eight-hour exposure indicator data is available prior to 2006 because CARB approved the state eight-hour ozone standard in 2005. The three-year end period is 2018-2021 for both the exposure indicators and the EPDC.

[68] The District has regulatory authority over some area-wide sources, including coatings and industrial solvents.

[69] EPDC values for El Cajon were combined due to temporary monitoring site relocations in 2014-2016. The original monitor at Redwood Avenue was temporarily relocated to Floyd Smith Drive in 2014 until a permanent site could be located. The site was moved to its new permanent location at Lexington Elementary in 2016. Because of the close proximity between all three locations and no gaps in data, values for all three locations were combined. Eight-hour EPDC values were not calculated by CARB for the El Cajon monitoring site due to a lack of representative data. Consequently, eight-hour EPDC values were forecast between 2015-2021 based on historical one-hour and eight-hour trends, and is not considered official data.

[70] The original monitor in Kearny Mesa (San Diego – Overland Avenue) was decommissioned in 2010. The Overland location previously housed only a wind profiler. In 2010, when the District permanently relocated the Overland monitoring site as well as the wind profiler, it was formally re-designated as San Diego – Kearny Villa Rd. Because of the close proximity between the two locations and no gaps in data, values for the two locations were combined for the purposes of the EPDC.

[71] The original monitor in Otay Mesa (Paseo International) was decommissioned in 2014. When the District permanently relocated the Paseo International monitoring site in 2014, it was formally re-designated as Otay Mesa – Donovan. Because of the close proximity between the two locations and no gaps in data, values for the two locations were combined for the purposes of the EPDC.

[72] Alpine is downwind of the denser metropolitan areas and major transportation corridors of the San Diego region. Emissions from these sources are blown inland by the onshore breeze to the mountain slopes where Alpine is located. During this transport of pollution, the emissions have time to react under sunlight and heat to form ozone, which gets trapped below a naturally occurring thermal inversion layer and causes ozone levels to rise.

[73] The Annual Monitoring Network Report fully describes the network of ambient air quality monitors within San Diego County and meets the requirements for an Annual Network Report as listed in Title 40 of the Code of Federal Regulations (CFR), Part 58.10, which is required to be submitted to the EPA by July 1 each year.

[74] Two additional monitoring sites are under construction and still in the permitting process.

[75] 2019 CARB CEPAM emissions inventory, Version 1.04.

[76] 2019 CARB CEPAM emissions inventory, Version 1.04.

[77] The District's 2020 Ozone Plan predicted attainment of the 0.070 ppm ozone standard by 2032.
[78] https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/sad2022/appb.pdf
[79] https://ww2.arb.ca.gov/sites/default/files/2020-10/2007%20SCM.pdf
[80] https://ww2.arb.ca.gov/sites/default/files/2020-05/10602_scm_final.pdf
[81] "Feasible Measure" is not defined in the CCAA. However, the statutory criteria for assessing a potential control measure include cost-effectiveness, technological feasibility, total emission reduction potential, rate of emission reduction, public acceptability, and enforceability (H&SC §40922(a)). Similarly, transport mitigation regulations (17 CCR §§70600-01) define "all feasible measures" based on the "maximum degree of reductions achievable for emissions of ozone precursors, taking into account technological, social, environmental, energy and economic factors, including cost-effectiveness."
[82] The largest wastewater treatment facility in San Diego County (Point Loma Wastewater Treatment) operates three flares that consume digester gas. Combined, these three flares have emitted no more than 10 tons of NOx per year since 2014.
[83] SJVAPCD Rule 4311 exempts flares found at municipal solid waste landfills subject to SJVAPCD Rule 4642 (Solid Waste Disposal Sites), flares subject to 40 CFR 60 Subparts WWW or Cc, and/or flares found at stationary sources with a PTE of less than ten tons of VOC and NOx per year. Thus, should the District adopt a flare rule in the future to control NOx at any control level from landfills, it would be considered more stringent than what SJVAPCD currently allows.
[84] "Spare The Air – Cool the Climate. A Blueprint for Clean Air and Climate Protection in the Bay Area. Final 2017 Clean Air Plan." Stationary Source Control Measure #SS23. Adopted April 19, 2017.
[85] SCAQMD Rule 1118.1 controls NOx at the "ultra-low" NOx level (0.025 lbm/MMBtu) for all categories except flares consuming digester gas at non-major sources and flares that consume non-digester/landfill/produced gas (0.06 lbm/MMBtu). Flares consuming produced gas have a lower NOx limit of 0.018 lbm/MMBtu. SCAQMD staff determined further controls for these specific categories would not be cost-effective for adoption.
[86] "Spare The Air – Cool the Climate. A Blueprint for Clean Air and Climate Protection in the Bay Area. Final 2017 Clean Air Plan." Volume 2 – Stationary Source Sector. Stationary Source Control Measure #SS23. Adopted April 19, 2017.
[87] The proposed rule may also incorporate applicable flare requirements found in 40 CFR 60.18 (General Control Device and Work Practice Requirements) as needed.
[88] South Coast AQMD Rule 1118.1 sets an "ultra-low" NOx emission limit of 0.025 lbm/MMBtu for most new or replaced flares, as well as capacity thresholds for existing flares. The staff report indicated that the cost-effectiveness of controlling landfill gas flare at this level, from a baseline control level of 0.06 lbm/MMBtu, ranged between $48,000 and $50,000 depending on the capacity threshold evaluated (see Table 7 in Staff Report).
[89] https://www.epa.gov/system/files/documents/2021-09/oar-21-000-6324.pdf

[90] https://www.epa.gov/system/files/documents/2021-09/oar-21-000-6324.pdf
[91] In fact, the EPA proposed disapproving California's state Title V permitting programs at the time due to the inclusion of the exemption.
[92] A 2001 study sponsored by CARB estimated that of a restaurant's total VOC emissions, 13% emanate from chain-driven charbroilers, 13% emanate from griddles, and 69% emanate from underfired charbroilers. The study can be reviewed at https://www.arb.ca.gov/research/apr/reports/l943.pdf
[93] Per Appendix A, Table 3, found at: https://planning.lacity.org/eir/8150Sunset/References/4.B.%20Air%20Quality/AQ.14_SJVAPCD%20Charbroiling%20EF%20by%20Meat.pdf
[94] The District obtained a list of all restaurants with active permits from the San Diego County Department of Environmental Health. Of the 8,000+ restaurant facilities listed, the District only counted restaurants that are well-known to use charbroilers in their operations.
[95] https://www.sdapcd.org/content/dam/sdapcd/documents/capp/cerp/Portside-Environmental-Justice-CERP-July-2021.pdf
[96] Other California air districts have already adopted composting rules, including SCAQMD (Rule 1133-General Administrative Requirements, Rule 1133.1-Chipping and Grinding Activities, Rule 1133.2-Emisssion Reductions from Co-Composting operations, and Rule 1133.3-Emission Reductions from Green Waste Composting Operations) and SJVAPCD (Rule 4565-Biosolids, Animal Manure, and Poultry Litter Operations, and Rule 4566-Orngnic Material Composting Operations). These rules establish best management practices (BMPs) for chipping and grinding of green waste to produce materials for compositing or other uses, and to better manage stockpile operations to reduce VOC emissions.
[97] SB 1383 (Lara, 2016)
[98] EPA AP-42 VOC emission factor wood combustion is 229 pounds of VOC per ton of fireplace wood burned.
[99] Ventura County APCD's Rule 74.31 Final Staff Report noted the Independent Lubricant Manufacturers Association (ILMA), as well as the leading manufacturer of metalworking fluid, supported the adoption of SCAQMD Rule 1144 in 2009, as well as Rule 74.31 in 2013.
[100] CARB Executive Order #G-97-007-2
[101] https://www.energy.ca.gov/news/2021-08/energy-commission-adopts-updated-building-standards-improve-efficiency-reduce-0
[102] https://ww2.arb.ca.gov/sites/default/files/2022-08/2022_State_SIP_Strategy.pdf
[103] https://www.energy.ca.gov/news/2021-08/energy-commission-adopts-updated-building-standards-improve-efficiency-reduce-0
[104] https://ww2.arb.ca.gov/sites/default/files/2022-08/2022_State_SIP_Strategy.pdf
[105] https://www.participatesdapcd.org/
[106] The incentive program, codified in H&SC §44275 et seq., is named in honor of the late scientist Dr. Carl Moyer (1937-1997), in recognition of his work in the air quality field and his efforts to bring about this incentive.

[107] In October 2017, AB1274 (O'Donnell) exempted smog check requirements for vehicles 8 or less model-years old. Instead of a smog check, the modification assessed a $25 DMV fee for vehicles that are 7 or 8 model-years old. The resulting revenue is directed to the state's Carl Moyer Program. As a result, in Carl Moyer Year 24, air districts statewide will be receiving additional Carl Moyer Program funding compared to the program's previous funding levels.

[108] AB 2836 (E. Garcia, 2022)

[109] Outside of three air districts, CAPP funding was not codified in statute for each air district in California. Instead, AB 134 directed CARB to distribute 5% of the overall funds (i.e. $12.5 million) to other districts, $3 million of which was allocated to San Diego County.

[110] To date, CAPP incentive funding has been dependent on availability and annual appropriation by the state legislature.

[111] Additional detail can be found in "Appendix G - Draft Supplemental Disclosure Discussion of Oxides of Nitrogen Potential Caused by the Low Carbon Fuel Standard Regulation." March 6, 2018. Available at https://www.arb.ca.gov/regact/2018/lcfs18/appg.pdf

[112] NRM-eligible projects had to adhere to a cost-effectiveness threshold of $10,000 per ton of NOx reduced (compared to $30,000 for conventional Carl Moyer-eligible projects), unless the air district could demonstrate that no NOx reductions below the $10,000 threshold were available.

[113] For additional information, refer to https://www.auditor.ca.gov/pdfs/reports/2019-127.pdf

[114] VRF funding infusions for off-road equipment in FY2013-14 and locomotive replacement projects in FY2017-18 will be reported annually to CARB for several years to fulfill the District's match funding requirements of the Carl Moyer program.

[115] AB 8 (Perea, 2013)

[116] AB 2836 (E. Garcia, 2022)

[117] San Diego Gas & Electric (SDG&E) also contributed $200,000 in matching funds for services related to the development of charging and/or refueling infrastructure supporting the demonstration vehicles in San Diego County.

[118] https://ww2.arb.ca.gov/news/carb-approves-updated-regulations-requiring-most-new-small-road-engines-be-zero-emission-2024

[119] https://ww2.arb.ca.gov/sites/default/files/2022-06/CORE%20PL%20presentation%20slides%20for%20WG2%20V8.1%20FINAL_.pdf

[120] https://ww2.arb.ca.gov/carl-moyer-program-state-reserve-solicitation

[121] https://sd-sequel.org/

[122] https://tinyurl.com/fxkfhrmn

[123] https://www.ourair.org/wp-content/uploads/leafblowers-APCD.pdf

[124] https://ww2.arb.ca.gov/resources/fact-sheets/uss-bonhomme-richard-fire-post-incident-review-public-workshop

[125] AB 630 (Cooper, 2017)

[126] Revenue (car) miles are the total distance that a fleet travels while available for passenger service.
[127] The San Diego Trolley is a 54-mile light rail transit system serving southern San Diego County.
[128] The SPRINTER is a 22-mile light rail line, connecting Oceanside to Escondido that began service in January 2008.
[129] The COASTER is a 42-mile passenger rail line between Oceanside and Downtown San Diego that began service in FY 1996.
[130] "iCommute" is a regional transportation demand management program charged with providing shared-ride services and education to employers and individuals on all ridesharing and biking options. Example services include but are not limited to: (1) Carpool Ride Matching, (2) Guaranteed Ride Home Program, (3) Promotion of teleworking and alternative work schedules, and (4) Park-and-Ride Programs.
[131] Variable tolls for solo drivers based on traffic congestion in the general lanes.
[132] The District amended NSR rules again in 2016, 2019, and 2021 for federal purposes.
[133] California Health and Safety Code (H&SC) Sections 40918.5 and 40918.6
[134] Ongoing NSR provisions include state requirements for Best Available Control Technology (BACT) on equipment with potential to emit 10 pounds or more per day of VOC or NOx, and federal requirements for Lowest Achievable Emission Rate (LAER) control technology and offsets (currently at a 1.2-to-1 ratio) for new or modified facilities with potential to emit currently at 50 tons or more per year of VOC or NOx. Federal nonattainment reclassifications now require a more stringent 1.3-to-1 offset ratio and a potential to emit at 25 tons or more per year of VOC or NOx.
[135] The emission reductions must also be real, quantifiable, and enforceable.
[136] Shutdowns are a federally authorized source of offsets. See "Use of Shutdown Credits for Offsets," John Seitz, Director, Office of Air Quality Planning and Standards, EPA, date unknown.
[137] In fact, a majority of shutdown-related emission reductions are never banked.
[138] "Air Resources Board Staff's Basis For A Determination That A District's No-Net-Increase Permitting Program Is Not Necessary Pursuant to Health and Safety Code §40918.5 and 40918.6" (October 31, 1997).
[139] Page 5 of the CARB guidance
[140] CARB Executive Order G-97-007-02 (December 17, 1998).
[141] Pursuant to Rule 26.0, Banking of Emission Reduction Credits, emission reductions from shutdowns for which credits are granted are discounted by the emission reductions that would have occurred had Reasonably Available Control Technology or Best Available Retrofit Control Technology requirements applied.
[142] In reality, many sources with actual emissions between 10 and 15 tons per year would not have been subject to state offset requirements because of permit conditions capping their potential to emit at 15 tons per year.

[143] Considerable effort is required to accurately quantify unbanked emission reductions from shutdowns, including making adjustments for eligibility as emission offsets. Consequently, likely not all unbanked emission reductions have been uncovered, particularly those from smaller sources.

[144] Applications above required no emission offsets for the pollutant increases. Emissions of 0.00 are less than 0.005 tons per year.

[145] No adjustments to the listed unbanked shutdown emissions above were necessary due to any equipment subject to RACT were not included.

[146] 1998-1999 data based on CEIDARS. 2000-2050 data based on CARB 2019 CEPAM Emissions Projection Data (V1.04). Since repeal of State offset requirements has not "caused" emission reductions, any negative values (indicating unbanked shutdowns had exceeded new sources) were replaced with zero values.

[147] 1998 worst-case scenario did not consider emission benefits from shutdowns. Conservatively assumed annual increase of historic-high, 33 tons per year starting in 1999.

[148] 1998 expected-case scenario assumed repeal of state offset requirements would result in foregoing offsetting reductions from voluntary process or control technology improvements. Assumed annual net increase of 1.78 tons per year starting in 1999.

[149] 1998-1999 data based on CEIDARS. 2000-2050 data based on CARB 2019 CEPAM Emissions Projection Data (V1.04). Since repeal of State offset requirements has not "caused" emission reductions, any negative values (indicating unbanked shutdowns had exceeded new sources) were replaced with zero values.

[150] 1998 worst-case scenario did not consider emission benefits from shutdowns. Assumed annual increase of 15 tons per year starting in 1999

[151] 1998 expected-case scenario assumed repeal of state offset requirements would result in foregoing offsetting reductions from voluntary process or control technology improvements. Assumed annual net increase of 3 tons per year starting in 1999.

[152] 1998-1999 data based on CEIDARS. 2000-2050 data based on CARB 2019 CEPAM Emissions Projection Data (V1.04). Since repeal of State offset requirements has not "caused" emission reductions, any negative values (indicating unbanked shutdowns had exceeded new sources) were replaced with zero values.

[153] From Table L-3. Since repeal of state offset requirements has not "caused" emission reductions, any negative values (indicating unbanked shutdowns had exceeded new sources) were replaced with zero values.

[154] 1998-1999 data based on CEIDARS. 2000-2050 data based on CARB 2019 CEPAM Emissions Projection Data (V1.04). Since repeal of State offset requirements has not "caused" emission reductions, any negative values (indicating unbanked shutdowns had exceeded new sources) were replaced with zero values.

[155] From Table L-3. Since repeal of state offset requirements has not "caused" emission reductions, any negative values (indicating unbanked shutdowns had exceeded new sources) were replaced with zero values.

[156] 1998-1999 data based on CEIDARS. 2000-2050 data based on CARB 2019 CEPAM Emissions Projection Data (V1.04). Since repeal of State offset requirements has not "caused" emission reductions, any negative values (indicating unbanked shutdowns had exceeded new sources) were replaced with zero values.

[157] From Table L-3. Since repeal of state offset requirements has not "caused" emission reductions, any negative values (indicating unbanked shutdowns had exceeded new sources) were replaced with zero values.

[158] 1998-1999 data based on CEIDARS. 2000-2050 data based on CARB 2019 CEPAM Emissions Projection Data (V1.04). Since repeal of State offset requirements has not "caused" emission reductions, any negative values (indicating unbanked shutdowns had exceeded new sources) were replaced with zero values.

[159] From Table L-3. Since repeal of state offset requirements has not "caused" emission reductions, any negative values (indicating unbanked shutdowns had exceeded new sources) were replaced with zero values.

[160] Percentages updated to reflect September 2022, CARB emission inventory and projections.

[161] Percentages updated to reflect September 2022, CARB emission inventory and projections.

[162] 1998-1999 data based on CEIDARS. 2000-2050 data based on CARB 2019 CEPAM Emissions Projection Data (V1.04). Total inventory does not include natural sources and off-shore emissions.

[163] 1998-1999 data based on CEIDARS. 2000-2050 data based on CARB 2019 CEPAM Emissions Projection Data (V1.04). Total inventory does not include natural sources and off-shore emissions.