Staff Report

CARB Review of the 2020 Plan for Attaining the National Ambient Air Quality Standards for Ozone in San Diego County

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EXECUTIVE SUMMARY

This report presents the California Air Resources Board (CARB or Board) staff's assessment of the 2020 Plan for Attaining the National Ambient Air Quality Standards for Ozone in San Diego County (2020 Plan) by the San Diego County Air Pollution Control District (San Diego County or the District). CARB staff has concluded that the 2020 Plan meets the SIP planning requirements of the federal Clean Air Act (the Act) for a Severe classification for both the 75 parts per billion (ppb) 8-hour ozone standard (75 ppb standard) and the 70 ppb 8-hour ozone standard (70 ppb standard). The 2020 Plan includes comprehensive emissions inventories, reasonable further progress demonstrations along with milestones, assessments of reasonably available control measures and technologies, contingency measures for progress and attainment, transportation conformity budgets, and modeled attainment demonstrations. To attain the 70 ppb standard in 2032, the 2020 Plan includes CARB's proposed commitment to achieve four tons per day (tpd) of emission reductions of oxides of nitrogen (NOx) by 2032 and the District's NOx commitment of 1.7 tpd to attain the 70 ppb standard. CARB also commits to pursue the following measures: Heavy-Duty Engine and Vehicle Omnibus Regulation, Advanced Clean Trucks Regulation, and Heavy-Duty Vehicle Inspection Program and Periodic Smoke Inspection Program. The Board is scheduled to consider the 2020 Plan on November 19, 2020. If adopted, CARB will submit the 2020 Plan to the U.S. Environmental Protection Agency (U.S. EPA) as a revision to the California State Implementation Plan (SIP).

The Act requires U.S. EPA to set air quality standards and periodically review the latest health research to ensure that standards remain protective of public health. Based on research demonstrating adverse health effects at lower exposure levels, U.S. EPA has set a series of increasingly health protective ozone standards, beginning with a 1-hour ozone standard in 1979. Subsequent health studies have demonstrated greater adverse effects of exposure to ozone over longer periods, resulting in U.S. EPA establishing an 8-hour ozone standard of 80 ppb in 1997, the 75 ppb standard in 2008, and, most recently, the 70 ppb standard in 2015. CARB and the District have developed a series of SIPs defining actions needed to meet these standards, with each SIP and the corresponding control programs providing the foundation for subsequent planning efforts. The SIP process established under the Act has been an important driver for air quality progress in San Diego County.

The 2020 Plan addresses both the 2008 75 ppb and 2015 70 ppb 8-hour ozone standards and represents the next building block in planning efforts to meet increasingly health protective air quality standards. The District's ozone strategy has

relied upon parallel emissions reductions of NOx and reactive organic gases (ROG)[1] from stationary and mobile sources. Since 1990, ozone levels in San Diego County have significantly improved in response to reductions in emissions of NOx and ROG from current control programs, despite a population increase of approximately 35 percent. Emissions reductions from mobile sources have been substantial during this period.

Along with CARB's comprehensive strategy to reduce emissions from mobile sources outlined in its 2016 State SIP Strategy,[2] CARB is furthering efforts to foster clean and new technologies, incentive programs to promote and accelerate the use of advanced clean technologies, as well as providing enhanced enforcement strategies to ensure programs are achieving their anticipated benefits, outreach and education to engage consumers regarding advanced vehicle technologies, and supporting infrastructure planning and development for cleaner technologies.[3] Together, these programs will provide a 53 percent reduction of NOx and 40 percent reduction of ROG from 2017 levels that will collectively ensure attainment of the 75 ppb standard by the District's attainment year of 2026. For the 70 ppb standard, CARB control programs will provide a 60 percent reduction of NOx and 51 percent reduction of ROG from 2017 levels, which will provide for attainment of that standard by the District's attainment year of 2032.

I. BACKGROUND

The Act requires U.S. EPA to set air quality standards and periodically review the latest health research to ensure that standards remain protective of public health. Based on research demonstrating adverse health effects at lower exposure levels, U.S. EPA has set a series of increasingly health protective ozone standards, beginning with a 1-hour ozone standard in 1979. Health studies conducted later showed the greater effects of exposure to ozone over longer time periods. This led U.S. EPA to establish an 8-hour ozone standard of 80 ppb in 1997, 75 ppb in 2008, and more recently, the 70 ppb in 2015.

Effective on July 20, 2012,[4] U.S. EPA designated San Diego County as a nonattainment area (NAA) for the 75 ppb standard, with a Marginal classification and a July 20, 2015 attainment date. Despite substantial progress to improve air quality, the

[1] In the District's plan, the term volatile organic compounds (VOC) is used. CARB uses the term ROG instead, as it is generally more inclusive, and represents a slightly broader group of compounds than those specified in U.S. EPA's list of VOCs.
[2] CARB's 2016 State SIP Strategy.
[3] CARB's 2020 Mobile Source Strategy discussion draft.
[4] 77 FR 30088, Posted May 21, 2012 and effective July 20, 2012, "Air Quality Designations for the 2008 Ozone National Ambient Air Quality Standards."

region did not attain the standard by the July 2015 Marginal attainment deadline. Consequently, on June 3, 2016, U.S. EPA classified San Diego County as a Moderate nonattainment area, which required the District to submit a SIP meeting Moderate area requirements and showing attainment by the July 20, 2018 attainment date for Moderate areas.[5] On December 14, 2016, the District adopted an Ozone Plan to address requirements of the Act that are applicable to a Moderate 8-hour ozone nonattainment area, consistent with U.S. EPA's 2015 Implementation Rule for the 75 ppb standard (2015 Implementation Rule).[6] While the District continued to make progress to improve air quality, the area did not attain the standard by the July 2018 attainment deadline. Hence, on August 23, 2019, U.S. EPA determined the area did not meet the standard and classified San Diego County as a Serious nonattainment area with an attainment date of July 20, 2021. On June 4, 2018, U.S. EPA designated San Diego County as a nonattainment area with a Moderate classification for the 70 ppb standard. This designation became effective on August 3, 2018.[7] The attainment date for Moderate areas is August 3, 2024. Attainment must be demonstrated the full year prior to the attainment date.

To maximize resources, the District determined that developing a comprehensive SIP for both standards was the most logical approach. While the area was classified as Serious for the 75 ppb standard and Moderate for the 70 ppb standard, the District and CARB determined that the most expeditious attainment date for both standards corresponded to a Severe area classification with attainment dates of July 20, 2027 and August 3, 2033, respectively. The attainment years are 2026 and 2032, respectively, because those represent the years with one full ozone season, which is generally May through October. This is due to modeling showing that the District will attain the standards at later timeframes than the due dates provided for lower classifications as set out by the Act's implementation rules.[4, 8] The site with the worst air quality or design value site is the Alpine-Victoria Drive monitoring site (Alpine). Based on air quality modeling, Alpine is predicted to be at 74 ppb in 2026 and 70 ppb in 2032, the attainment years for the 75 ppb and 70 ppb standards, respectively.

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[5] 81 FR 26697, Posted May 3, 2016 and effective June 3, 2016, "Determinations of Attainment by the Attainment Date, Extensions of the Attainment Date, and Reclassifications of Several Areas for the 2008 Ozone National Ambient Air Quality Standards."

[6] 80 FR 12264, Posted March 6, 2015 and effective on April 5, 2015, "*Implementation of the 2008 National Ambient Air Quality Standards for Ozone: State Implementation Plan Requirements.*"

[7] 83 FR 25776, Posted June 4, 2018 and effective August 3, 2018, "*Additional Air Quality Designations for the 2015 Ozone National Ambient Air Quality Standards."*

[8] 83 FR 62998, Posted December 6, 2018 and effective on February 4, 2019, "*Implementation of the 2015 National Ambient Air Quality Standards for Ozone: Nonattainment Area State Implementation Plan Requirements.*"

Thus, the 2020 Plan includes the Severe nonattainment area requirements to meet both the 75 ppb and 70 ppb standards.

II. CLEAN AIR ACT REQUIREMENTS

The Act requires Severe area ozone SIPs to include the elements listed below:

- Attainment demonstration of the ozone standard;
- Reasonably available control technology (RACT) demonstration (See Attachment B of the 2020 Plan);
- Reasonably available control measures (RACM) demonstration;
- Base year emission inventories and future year forecasts for ozone precursors, and emissions statement certification;
- Reasonable further progress (RFP) demonstration;
- Milestone compliance demonstrations for RFP and attainment;
- Transportation conformity emission budgets;
- Contingency measures;
- Vehicle Miles Traveled (VMT) growth and Transportation Control Measures (TCMs) offset demonstration;
- Demonstration of a New Source Review program;
- Enhanced Inspection and Maintenance Program;
- Section 185 Fee Rules Program; and
- Clean Fuels for Fleets Program.

Additionally, in Attachment P of its 2020 Plan, the District lists the requirements of the Act and where each requirement is discussed in their Plan.

III. NATURE OF THE OZONE PROBLEM IN SAN DIEGO COUNTY

San Diego County is located south of Orange and Riverside Counties, with Imperial County on the east, the Pacific Ocean on the west, and Mexico on the south. The City of San Diego is 20 miles north of Mexico. San Diego County has a diverse economy that includes agriculture, biotechnology, biomedical instruments, communications, defense, entertainment, environmental technology, financial services, horticulture, hospitality, software, and travel. The Port of San Diego moves goods and tourists in and out of the area. The County is also home to seven military bases.

San Diego County is comprised of developed urban areas that are mostly concentrated near the coast, as well as undeveloped, and agricultural land. The undeveloped land in the county represents 48 percent of the County's land mass and accounts for 1.3 million acres of land. The County will maintain this land as habitat

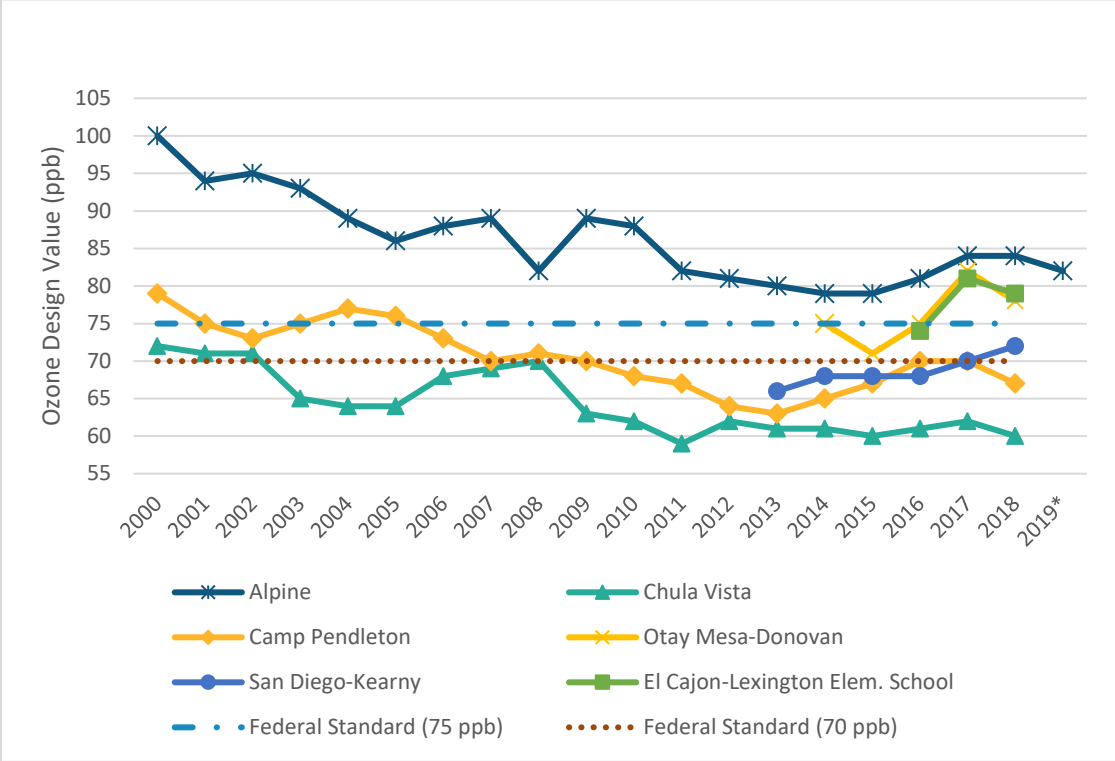
conservation areas, parks, steep slopes, farmland, floodplains, and wetlands. San Diego County has a Mediterranean climate made up of coastal, inland valleys, mountains and desert microclimates.

Elevated ozone levels occur in San Diego County from the last months of spring through early fall, when high temperatures and stable atmospheric conditions favor ozone formation. Ozone generally reaches peak levels by mid-afternoon and, along with ozone precursors, prevailing winds often transport it inland. As a result, inland foothill areas such as El Cajon, Otay Mesa, and Alpine have higher ozone levels and more days exceeding the federal ozone standard than the County's coastal areas. The Otay Mesa monitor is also located near the Mexico border.

Both locally generated emissions and emissions transport (from the South Coast Air Basin to the north and Mexico to the south) can contribute to ozone levels in the San Diego County nonattainment area. Again, the Orange County and Riverside County portions of the South Coast Air Basin lie directly north of San Diego County. Ocean-going vessels calling on the Port of San Diego or the Ports of Los Angeles and Long Beach also impact the County's air quality, as well as transiting vessels passing through Southern California waters that do not call at any of the ports. The ozone nonattainment area includes all of San Diego County.

Significant improvements in San Diego County's air quality have occurred over the past 30 years, as shown in Figure 1. Over the past three decades, the number of exceedance days in San Diego County has declined by 90 percent for the 75 ppb standard, and by 70 percent for the 70 ppb standard. The Alpine monitor (which has shown the highest ozone readings in the area) reflects design values that have decreased by 18 percent between 2000 and 2019, from 100 ppb to 82 ppb.

Figure 1. San Diego County Ozone Trends and Design Values at Monitoring Sites 2000 – 2019



* At the time the modeling and analysis was conducted for this attainment demonstration, the 2019 design value was not yet finalized.
Source: Table K-1, *Ozone Design Values for each of the monitors within the San Diego NAA*; Site iADAM: Air Quality Data Statistics; and AQMIS2.

Design values are used to demonstrate an area's ozone compliance status in relation to the standard. The 8-hour ozone design value is the fourth highest (4th highest) ozone measurement each year, averaged over three consecutive years at each monitoring site. Of the three monitoring sites with design values exceeding the standards in 2000, only the Alpine monitor still reflected a design value above the 75 ppb standard in 2018, while both the Camp Pendleton and Chula Vista monitors reflected significant improvements and registered design values below the 70 ppb standard in 2018.

However, several of the area's monitors did not exist in 2000; three new monitors were added between 2000 and 2018, including Otay Mesa-Donovan (Otay Mesa), El Cajon-Lexington Elementary School (El Cajon), and San Diego-Kearny. In 2018, the Otay Mesa and El Cajon monitors were above the 75 ppb standard, and the Otay Mesa, El Cajon, and San Diego-Kearny monitors were also above the 70 ppb standard.

Overall, the District continues to make steady progress toward attaining both the 75 ppb and 70 ppb standards.

IV. DEMONSTRATING ATTAINMENT

SIPs must identify both the magnitude of reductions needed and the actions necessary to achieve those reductions as part of demonstrating attainment of the standard. The District has prepared an attainment demonstration that provides for the expeditious attainment of both the 75 ppb and 70 ppb 8-hour ozone standards.

The Act requires the use of air quality modeling to relate ozone levels to emissions in a region, and to simulate future air quality based on changes in emissions. The San Diego County ozone nonattainment area is one part of the greater Southern California region. CARB staff prepared the photochemical model used in the District's 2020 Plan that covers the entire Southern California region and a portion of northern Mexico.

The modeled attainment demonstration in this plan was prepared using photochemical dispersion and meteorological modeling tools developed in response to U.S. EPA modeling guidelines,[9] and recommendations from air quality modeling experts. The model uses emission inventories, together with measurements of meteorology and air quality, to establish the relationship between emissions and air quality. The modeling is used to identify the benefits of controlling ozone precursors as well as the most expeditious attainment date.

For both the 75 ppb and 70 ppb standards, the year 2017 was chosen as the modeling base (or reference) year. The future years modeled were 2026 for the 75 ppb standard, and 2032 for the 70 ppb standard. These future years are the years in which attainment must be demonstrated for a Severe classification for each applicable standard.

For the 75 ppb standard, the attainment demonstration modeling includes the emission reduction benefits of both CARB's mobile source control program and District regulations submitted through July 8, 2020. Together, these measures provide the necessary control strategy to achieve the emission reductions needed, and demonstrate that the San Diego County nonattainment area will attain the 75 ppb standard by 2026. The attainment demonstration modeling for the 70 ppb standard also includes the emission reduction benefits listed for the 75 ppb standard, as well as

[9] U.S. EPA, 2018, Modeling Guidance for Demonstrating Air Quality Goals for Ozone, $PM_{2.5}$, and Regional Haze.

CARB's proposed commitment of 4 tons per day of NOx reductions, and the District's NOx commitments of 1.7 tpd for 2032.

Tables 1 and 2 summarize the emissions modeled in the attainment demonstration for the years 2017, 2026, and 2032. For the 75 ppb standard, emissions between 2017 and 2026 are predicted to decline by 30 percent for NOx and by 11 percent for ROG. For the 70 ppb standard, emissions from 2017 to 2032 are predicted to decline by 43 percent for NOx and by 14 percent for ROG. For both standards, the largest reductions are predicted to come from on-road mobile sources.

Table 1. San Diego County Base Year and Attainment Year Emissions of Oxides of Nitrogen (NOx)
(tpd, summer planning inventory)

Source Category	2017	2026	2032
Stationary	4.1	4.0	4.1
Area-wide	1.7	1.2	1.0
On-Road Motor Vehicles	37.7	17.5	15.1
Off-Road Vehicles and Equipment	33.5	30.3	28.9
Emission Reduction Credit (ERC) Balance	-	0.6	0.6
Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Adjustment[a]	-	0.0	0.0
CARB proposed mobile sources commitment	-	-	-4.0
District stationary source commitment	-	-	-1.7
Total	**77.0**	**53.6**	**44.0**

Source: 2020 Plan, Attachment A: *San Diego County Emissions Inventory Documentation.*
Numbers may not add up due to rounding

[a] The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks.

Table 2. San Diego County Base Year and Attainment Year Emissions of Reactive Organic Gases (ROG)
(tpd, summer planning inventory)

Source Category	2017	2026	2032
Stationary	27.6	26.3	27.2
Area-wide	33.6	35.2	36.1
On-Road Motor Vehicles	20.5	12.3	10.0
Off-Road Vehicles and Equipment	32.1	26.3	24.3
Emission Reduction Credit (ERC) Balance	-	0.7	0.7
Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Adjustment	-	0.0	0.1
Total	**113.8**	**100.8**	**98.3**

Source: 2020 Plan, Attachment A: *San Diego County Emissions Inventory Documentation.*
Numbers may not add up due to rounding.

Results of the attainment demonstration modeling are shown in Table 3. The 2026 design values are predicted to be below the 75 ppb standard at all sites, with design values that range between 61 and 74 ppb, including the design site at Alpine. The 2032 design values are predicted to be below the 70 ppb standard at all sites, with design values that range from 61 to 70 ppb – including the design site at Alpine. Further information on the modeled attainment demonstration is included in Chapters 3 and 4, and Attachments K and L of the 2020 Plan.

Table 3. Modeled 8-hour Ozone Design Values (DV) Demonstrating Attainment

Monitoring Site	2017 Base Year DV (ppb)	2026 Future Year DV (ppb)	2032 Future Year DV (ppb)
Alpine	84	74	70
Chula Vista	62	61	61
Camp Pendleton	70	65	64
Otay Mesa-Donovan	70	65	64
San Diego-Kearny Villa Rd.	70	68	66

Source: 2020 Plan, Table 3-5: *Calculation of Model-Predicted 2026 Design Values at San Diego County Monitoring Sites, 2008 Ozone NAAQS*, and Table 4-7: *Calculation of Model-Predicted 2032 Design Values at San Diego County Monitoring Sites, 2015 Ozone NAAQS.*

U.S. EPA modeling guidance requires that modeled attainment demonstrations be accompanied by a weight of evidence analysis (WOE) to provide a set of complementary analyses. Examining an air quality problem in a variety of ways provides a more informed basis for the attainment strategy as well as better understanding of the overall problem and the level and mix of emissions controls needed for attainment. WOE analyses include an assessment of trends in ozone air quality, ozone precursor emissions trends, meteorology impacts on ozone air quality trends, and a summary of corroborating analyses. CARB staff prepared the WOE that is provided in Appendix M of the 2020 Plan. The WOE indicates that San Diego County is on track to attain the 75 ppb standard by 2026, and the 70 ppb standard by 2032. This analysis is consistent with design value projections derived from the regional photochemical modeling assessment conducted by CARB staff.

A. CONTROL STRATEGY

The ongoing emissions reductions from continued implementation of CARB and District control strategies developed to meet prior standards, as well as CARB and District commitments proposed in this document and included the District's 2020 Plan, respectively, provide the attainment control strategy for the 2020 Plan. The following sections highlight ongoing CARB control programs, CARB's commitment, and District measures, which together provide the emission reductions included in the attainment demonstration.

i. CARB Control Program

Given the severity of California's air quality challenges, CARB has implemented the most stringent mobile source emissions control program in the nation. CARB's comprehensive strategy to reduce emissions from mobile sources consists of a suite of

complementary actions, including: policy and regulatory mechanisms that establish emissions and performance standards for new vehicles and fuels; mandates and sales requirements for advanced technologies; pilot programs to encourage development of new technologies; and incentive and other programs to accelerate technology deployment. A detailed description of the mobile source control programs and a comprehensive list of CARB regulations are included in Attachments D and E of the 2020 Plan.

ii. CARB Commitment

In 2017, CARB adopted the *2016 State Strategy for the State Implementation Plan* (2016 State SIP Strategy) that included additional control measures to reduce emissions from mobile sources that are primarily under State and federal jurisdiction, including on-road and off-road mobile sources. The 2016 State SIP Strategy includes California's SIP commitment to take action on defined new measures according to a schedule and to achieve aggregate emissions reductions in the South Coast and San Joaquin Valley. The 2016 State SIP Strategy also included a statement that if additional areas require emissions reductions to meet current ozone and PM2.5 standards, CARB will quantify area and year specific reductions as part of individual attainment plans. In October 2018, CARB adopted an updated schedule for action on the measures in the *San Joaquin Valley Supplement to the 2016 State SIP Strategy for the State Implementation Plan* (Valley State SIP Strategy) that contained an updated and expanded version of the Heavy-Duty Vehicle Inspection and Maintenance Program measure, as well as a San Joaquin Valley-specific State commitment. As a part of the San Diego County attainment demonstration for the 70 ppb 8-hour ozone standard, CARB is including a State commitment of 4 tpd of NOx emissions reductions in 2032 from mobile sources that is needed to attain this standard in San Diego County. These reductions are beyond the emissions reductions from current programs as included in the inventory provided with this Plan.

The State's proposed commitment to achieve an aggregate emissions reduction of 4 tpd of NOx in 2032 in San Diego County represents the estimated emissions reductions in San Diego County from three rules that CARB committed to adopt in the 2016 State SIP Strategy, as supplemented by the Valley State SIP Strategy, that address emissions from heavy-duty diesel trucks – one of the largest sources of NOx emissions in San Diego County. While other measures in the 2016 State SIP Strategy will yield benefits in San Diego County, these emissions reductions represent the amount that is needed to demonstrate attainment of the 70 ppb 8-hour ozone standard, in addition to the reductions from current programs. Table 4 shows the

three CARB measures providing the needed emissions reductions as well as the schedule by which CARB anticipates taking action on each measure.

Table 4. CARB 2016 State SIP Strategy Measures and Schedule of Anticipated Action

Regulation	Action	Implementation Begins
Heavy-Duty Low-NOx Engine Standard – California Action	**2020**	**2024**
Advanced Clean Trucks (Last Mile Delivery)	**2020**	**2024**
Heavy-Duty Vehicle Inspection and Maintenance Program	**2021**	**2023**

CARB staff is hard at work developing each of these measures. Since adoption of the 2016 State SIP Strategy, staff has held numerous workshops on the regulation that will meet the Heavy-Duty Low-NOx Engine standard measure requirement. This regulation, referred to as the Heavy-Duty Low-NOx Omnibus Regulation, was adopted by the CARB Board on August 27, 2020. Earlier in the year, on June 25, 2020, the CARB Board adopted the Advanced Clean Trucks Regulation. Finally, beginning in 2019, CARB staff initiated public workshops on the development of a Heavy-Duty Inspection and Maintenance Program, which is anticipated for Board consideration in 2021.

Table 5 represents the State's commitment to achieve aggregate emissions reductions of 4 tpd of NOx emissions in San Diego County based upon implementation of the three measures previously described. While the table shows the anticipated emissions reductions associated with each measure, the measures as proposed by CARB staff, or adopted by the Board, may provide more or less reductions than the amount shown. The State's commitment is to achieve an aggregate emissions reduction of 4 tpd of NOx emissions in San Diego County in 2032 to demonstrate attainment of the 70 ppb 8-hour ozone standard.

Table 5. San Diego County Expected Emissions Reductions From 2016 State SIP Strategy Measures

Regulation	NOx Reductions 2032 (tpd)
Heavy-Duty Low-NOx Engine Standard – California Action	1.9
Advanced Clean Trucks (Last Mile Delivery)	0.4
Heavy Duty Vehicle Inspection and Maintenance Program	1.7
Total Aggregate Commitment	**4.0**

Besides CARB's commitment, implementation of the mobile source program has led to significant emissions reductions in San Diego and the State as a whole. For over 50 years, CARB has pursued a range of strategies to reduce mobile source emissions, thereby significantly improving air quality. In 2011, NOx emissions from mobile sources in San Diego County were 104.4 tpd and were reduced to 61.1 tpd in 2020 representing a 41 percent decrease in NOx emissions. Over the same time period, ROG emissions from mobile sources were reduced from 72.4 tpd in 2011 to 45.0 tpd in 2020. This decrease in emissions represents a 38 percent reduction.

Through these efforts, the State and our most polluted regions, including San Diego County, have seen dramatic improvements in ambient air quality and, as a byproduct, CARB has helped California become a world leader in environmental policies. Even with our progress, many areas of the State exceed current health-based ambient air quality standards that the State must legally meet. In addition, many sources of air pollution are located near low-income and disadvantaged communities which continue to experience disproportionately high levels of air pollution and resulting detrimental impacts to their health. CARB is working diligently with the District to address these community scale sources of air pollution through the AB 617 process while continuing to address regional air quality needs.

iii. District Control Program

Consistent with their regulatory authority, the District has adopted rules for reducing emissions from a broad scope of stationary and area sources. Table 6 highlights the District's stationary source rules that achieve emission reductions in 2017 and beyond.

Table 6. Adopted District Rules Achieving Emissions Reductions

District Rule Number and Name	Date Rule Adopted, Last Amended, or Planned
19.3, Emission Information	May 15, 1996
20.1, New Source Review (NSR) – General Provisions	July 19, 2019 (Effective October 16, 2020 per 85 FR 57727)
20.2, New Source Review (NSR)-Non-Major Stationary Sources	July 19, 2019 (Effective October 16, 2020 per 85 FR 57727)
20.3, New Source Review (NSR)-Major Stationary Sources and Prevention of Significant Deterioration (PSD) Stationary Sources	July 19, 2019 (Effective October 16, 2020 per 85 FR 57727)
20.4, New Source Review (NSR)-Portable Emission Units	July 19, 2019 (Effective October 16, 2020 per 85 FR 57727)
67.6.1, Cold Solvent Cleaning and Stripping Operations	2021
69.2.1, Small Boilers, Process Heaters, and Steam Generators	July 8, 2020
69.2.2, Medium Boilers, Process Heaters, and Steam Generators	July 8, 2020
69.4.1, Stationary Reciprocating Internal Combustion Engines	July 8, 2020

Source: 2020 Plan, Attachment G: *Analyses of Potential Additional Stationary Source Control Measures.*

In addition to CARB's commitment for new emission reductions, the District is also committing to revising some stationary source rules. The District's commitment comes from stationary source rules that regulate stationary reciprocating internal combustion engines as well as small and medium boilers, process heaters, and steam generators. Specifically, these include Rule 69.4.1, *Stationary Reciprocating Internal Combustion Engines*, Rule 69.2.1, *Small Boilers, Process Heaters, and Steam Generators*, and Rule 69.2.2, *Medium Boilers, Process Heaters, and Steam*

Generators. The District commitment represents 1.7 tons per day of NOx reductions in 2032 as shown in Table 7.

Table 7. District Commitment for NOx Reductions (tpd) in 2032

Source Type	2032
Stationary Reciprocating Internal Combustion Engines	0.8
Small and Medium Boilers, Process Heaters, and Steam Generators	0.9
Total	**1.7**

iv. Additional District Measures

As part of the 2020 Plan, the District prepared a Reasonably Available Control Technology (RACT) demonstration (See Attachment B, *2020 Reasonably Available Control Technology Demonstration for the National Ambient Air Quality Standards for Ozone in San Diego County,* to the District's 2020 Plan*)*. Through this process, the District has recommended a list of new stationary source control measures. The District determined that more stringent requirements are feasible and will provide additional emissions reductions beyond those in the attainment demonstration. The new stationary source control measures are: 1) an amendment to Rule 69.3.1, *Stationary Gas Turbine Engines – Best Available Retrofit Control Technology (BARCT),* which the District plans to amend in the spring of 2021; *and 2)* a new major source landfill flare NOx control measure, which the District plans to propose in spring 2021.

v. Reasonably Available Control Measures (RACM) Demonstration

As specified in the Act, the SIP shall provide for the implementation of RACM as expeditiously as practicable to provide for attainment of the ozone standard. RACM must also include emissions reductions from existing sources that may be obtained through the adoption, at a minimum, of reasonably available control technology (RACT). The U.S. EPA has interpreted RACM as those emissions control measures that are technologically and economically feasible and when considered in aggregate, would advance the attainment date by at least one year.[10] The 2020 Plan contains a

[10] 83 FR 62998, Posted December 6, 2018 and effective on February 4, 2019, "*Implementation of the 2015 National Ambient Air Quality Standards for Ozone: Nonattainment Area State Implementation Plan Requirements.*"

RACM analysis that demonstrates that no new measures were identified that would advance attainment from 2026 to 2025 for the 75 ppb standard, or from 2032 to 2031 for the 70 ppb standard. These analyses are further described in Chapters 3 and 4, and Attachments A, G, and I of the 2020 Plan. The District has prepared the required RACT SIP, Attachment B, *2020 Reasonably Available Control Technology Demonstration for the National Ambient Air Quality Standards for Ozone in San Diego County,* to be submitted to U.S. EPA with their 2020 Plan.

V. CLEAN AIR ACT REQUIREMENTS

In addition to the elements related to the attainment demonstration described above, the Act also requires SIPs for Severe ozone nonattainment areas to address the following elements. The following presents an analysis of these additional Act requirements.

A. Emission Inventory and Emissions Statement Certification

An emissions inventory is a critical tool used to evaluate, control, and mitigate air pollution. At its core, an emissions inventory is a systematic listing of the sources of air pollutants along with the amount of pollutants emitted from each source or category over a given time period. The planning emissions inventory is divided into three major categories: stationary, area-wide, and mobile sources. The summer season inventory is used for ozone planning because it reflects the activity levels and conditions presented when higher ozone levels occur in the San Diego region.

California's 2020 SIP updates use a 2017 baseline inventory; the inventory uses 2017 emissions and activity levels, and inventories for other years are back-cast or forecast from that base inventory. The inventories reflect District rules submitted through July 2020. The 2020 Plan in Chapters 3 and 4, and Attachment A, present a summary of the data sources, along with revisions and improvements made to the emission inventory.

On-road motor vehicle emissions were generated using CARB's mobile source emissions model, EMFAC2017, with Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule adjustments incorporated. Off-road mobile source emissions were estimated using a suite of category-specific models or, where a new model was not available, CARB's OFFROAD2007 model was used. The new models were developed for use in the 2020 SIP revisions, and represent significant improvements over models used in prior SIP updates.

The emissions inventory was used to perform ozone modeling and analysis and to report emission reduction progress as required by the Act. Detailed information regarding the emission inventory development and emissions by major source category in the base year and for future year baseline emissions can be found in Chapters 3 and 4 and Attachment A of the 2020 Plan.

The Act also requires ozone nonattainment areas to have an Emissions Statement program that mandates stationary sources with emissions over 25 tons per year of NOx or ROG report, and also certify the accuracy of their reported NOx and ROG emissions annually. District Rule 19.3, *Emission Information*, addresses this requirement for both the 75 ppb and 70 ppb standards, as stated on page 23 of the 2020 Plan.

B. Reasonable Further Progress (RFP) Demonstration

The Act and the Implementation Rule specify that each ozone nonattainment area must demonstrate ongoing emission reductions relative to the base year. For the 75 ppb standard, the RFP base year is 2011 and for the 70 ppb standard, it is 2017. Federal law requires a three percent per year reduction in ROG emissions. Where both ROG and NOx emissions have been shown to contribute to high ozone levels, the Act allows NOx emissions reductions to augment ROG emissions reductions in order to demonstrate RFP.

The 2020 Plan includes RFP demonstrations that meet the Act's requirements for the 75 ppb and 70 ppb standards. For the 75 ppb standard, San Diego County has met the 15 percent VOC-only rate of progress requirement. The County also demonstrates that it meets the additional 3 percent per year emissions reductions required for NAAs classified as Severe. The analysis indicates that the CARB existing control measures from the mobile source program will provide emissions reductions beyond what is needed for San Diego County's RFP demonstration. As discussed below, an additional three percent of NOx reductions for ROG substitution are set aside for RFP contingency purposes. Further information on the RFP demonstration can be found in Chapters 3 and 4 of the 2020 Plan for the 75 ppb and 70 ppb standards, respectively, and in Attachment A, Table A-3.

C. Milestone Compliance Demonstrations (MCDs)

Section 182(g)(2) of the Act describes Milestone Compliance Demonstrations (MCDs). MCDs are RFP progress reports submitted every three years to ensure that RFP progress is being achieved. If the District fails to submit an adequate MCD, they could be reclassified to an Extreme classification or they could be required to implement

additional control measures to make up for the needed emissions reductions. The District has laid out its plan for submittal of MCDs for the 75 ppb and 70 ppb standards in Chapters 3 and 4 of their 2020 Plan, respectively.

D. Transportation Conformity Budgets

Under section (§)176(c) of the Act, transportation plans, programs, and projects that receive federal funding or approval must be fully consistent with the SIP before being approved by a Metropolitan Planning Organization (MPO). U.S. EPA's transportation conformity rule[11] details requirements for establishing motor vehicle emission budgets (budgets) in SIPs for ensuring the conformity of transportation plans and programs with the SIP.

The 2020 Plan establishes county-level on-road motor vehicle emission budgets for each RFP milestone year, as well as for the attainment year, for both the 75 ppb and 70 ppb standards. Table 8 summarizes the motor vehicle emissions budget for transportation conformity purposes under a Severe federal 8-hour ozone classification for the 75 ppb standard, and Table 9 summarizes the budget for the 70 ppb standard. The emission budgets will apply to all subsequent transportation conformity years, per the federal transportation conformity regulation. Emission budgets for NOx and ROG were calculated using EMFAC2017, and reflect summer average emissions. Once U.S. EPA approves the emission budgets established in the 2020 Plan, they will serve as the conformity emissions budgets for future transportation conformity determinations in San Diego County. Additional details on the on-road motor vehicle emission budgets can be found in Chapter 3 on page 36 of the 2020 Plan for the 75 ppb standard, and in Chapter 4 on page 56 of the 2020 Plan for the 70 ppb standard.

[11] Federal transportation conformity regulations are found in 40 CFR Part 51, subpart T – Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Developed, Funded or Approved under Title 23 U.S.C. of the Federal Transit Laws. Part 93, subpart A of this chapter was revised by the EPA in the August 15, 1997 Federal Register.

Table 8. On-Road Motor Vehicle Emissions Budgets for the 75 ppb Standard
(tons per day (tpd), summer planning inventory)

Conformity Budget Item	2017 ROG Reference Year	2017 NOx Reference Year	2020 ROG RFP	2020 NOx RFP	2023 ROG RFP	2023 NOx RFP	2026+ ROG Attain.	2026+ NOx Attain.
Baseline Emissions	-	-	16.25	28.01	13.51	19.24	12.02	17.20
SAFE Rule Adjustment	-	-	0.00	0.00	0.01	0.00	0.02	0.01
Total	**-**	**-**	**16.25**	**28.01**	**13.52**	**19.24**	**12.04**	**17.21**
Conformity Budget (rounded)	**23**	**42**	**16.3**	**28.1**	**13.6**	**19.3**	**12.1**	**17.3**

Source: 2020 Plan, Table 3-1: *On-Road Motor Vehicle Emission Budgets in San Diego County, 2008 Ozone NAAQS.*

Table 9. On-Road Motor Vehicle Emissions Budgets for the 70 ppb Standard
(tons per day (tpd), summer planning inventory)

Conformity Budget Item	2017 ROG Reference Year	2017 NOx Reference Year	2023 ROG RFP	2023 NOx RFP	2026 ROG (RFP)	2026 NOx (RFP)	2029 ROG (RFP)	2029 NOx (RFP)	2032 ROG (Attain.)	2032 NOx (Attain.)
Baseline Emissions	-	-	13.51	19.24	12.02	17.20	10.93	15.83	9.93	15.07
SAFE Rule Adjustment	-	-	0.01	0.00	0.02	0.01	0.03	0.02	0.04	0.02
Total	**-**	**-**	**13.52**	**19.24**	**12.04**	**17.21**	**10.96**	**15.85**	**9.97**	**15.09**
Conformity Budget (rounded)	**23**	**42**	**13.6**	**19.3**	**12.1**	**17.3**	**11.0**	**15.9**	**10.0**	**15.1**

Source: 2020 Plan, Table 4-1: *On-Road Motor Vehicle Emission Budgets in San Diego County, 2015 Ozone NAAQS.*

E. Contingency Measures

Contingency measures provide additional emissions reductions in the event that a nonattainment area fails to achieve RFP targets, or to attain the ozone standard by its attainment date. As they are reductions not accounted for in the attainment demonstration, these emission reductions are additional to the reductions needed for attainment. U.S. EPA has interpreted this requirement to represent one year's worth of RFP, which amounts to a three percent reduction from measures that would be triggered only if the District fails to achieve RFP, or if the District does not attain the standard by the attainment date (See the U.S. Court of Appeals for the Ninth Circuit in *Bahr v. U.S. Environmental Protection Agency*[12]).

The RFP demonstration in the 2020 Plan shows the District's commitment to meet RFP milestone year contingency requirements to achieve three percent emissions reductions by each of the milestone years 2011, 2017, 2020, 2023, and 2026 for the 75 ppb standard, and 2017, 2023, 2026, 2029, and 2032 for the 70 ppb standard.

To meet the three percent emissions reduction for attainment contingency, the 2020 Plan relies on additional reductions occurring between 2026 and 2032 from continued implementation of CARB's mobile source control program, including the turnover in the mobile source fleet. CARB's ongoing mobile source control program will provide emissions reductions beyond San Diego County's 2026 and 2032 attainment years for the 75 ppb and 70 ppb standards, respectively, as newer vehicles enter the fleet due to continued implementation of the mobile source programs. The 2020 Plan relies on these continuing emission reductions to fulfill the contingency requirements should San Diego County fail to attain the ozone NAAQS in 2026 or 2032, as shown below in Table 10.

[12] *Bahr v. U.S. Environmental Protection Agency,* (9th Cir. 2016) 836 F.3d 1218.

Table 10. San Diego County Mobile Source Emissions (tons per day (tpd))

Source Category	2017 NOx	2026 NOx	2032 NOx	2017 ROG	2026 ROG	2032 ROG
On-Road Mobile	38	18	15	21	12	10
Off-Road Mobile	51	49	48	32	26	24
Total	**89**	**67**	**63**	**53**	**38**	**34**

Source: 2020 Plan, Attachment A: *Emission Inventories and Documentation for Baseline, RFP, and Attainment Years.*
Numbers may not add up due to rounding.

If, for some reason, the District fails to achieve RFP or attain either the 75 ppb or 70 ppb standard, they have proposed to include an additional contingency measure in their 2020 Plan. This contingency measure would withdraw the small container exemption provision found in District Rule 67.0.1, *Architectural Coatings*. If triggered, it would represent an estimated 0.72 tons per day of VOC emission reductions, a conservative estimate, for the 75 ppb or the 70 ppb standard.

F. Other Requirements

i. Federal New Source Review Program

Federal New Source Review (NSR) rules require new and modified major stationary sources that increase emissions in amounts exceeding specified thresholds to provide emissions reduction offsets to mitigate the emissions growth. Emissions reduction offsets represent either on-site emissions reductions or the use of banked emission reduction credits (ERC). ERCs are voluntary, surplus emissions reductions, which are registered, or banked, with the District for future use as offsets.

Per U.S. EPA policy, ERCs banked before the plan's emission inventory base year (2017 for this plan) must be explicitly treated as emissions in the air. Table 11 shows the ERCs registered with the District for future use as offsets. Further detail on ERCs is provided in Chapter 2 on page 20 and in Attachment F of the 2020 Plan.

Table 11. San Diego County Emission Reduction Credits (ERC) Balance as of January 2017

Pollutant	ERC Total (tons per day)
NOx	0.56
ROG	0.71

Source: 2020 Plan, Attachment F: *Pre-Baseline Banked Emission Reduction Credits*

ii. Enhanced Inspection and Maintenance

The District already has in place an Enhanced Vehicle Inspection and Maintenance Program (Enhanced I&M). This program already exists because historically, the District had been classified as a Serious Nonattainment Area for the 160 – 180 ppb 1979 one-hour ozone and the 107 – 119 ppb 1997 eight-hour ozone NAAQS. This program has remained in place because of anti-backsliding provisions.[13] Anti-backsliding means that even if U.S. EPA revokes an ozone standard, a nonattainment area is still obligated to adopt and implement the applicable requirements for the standard that it was required to meet for its classification. See Chapters 3 and 4 of the 2020 Plan for more information.

iii. Section 185 Fee Program

In Chapters 3 and 4 of the 2020 Plan, the District describes its plan for meeting the requirement in Section 185 of the Act (Section 185 Fee Program). The program entails charging a fee to major sources that emit 25 tons or more per year of NOx or ROG if the District does not attain the 75 ppb or 70 ppb standard.

iv. Clean Fuels for Fleets Program

The District already has in place a Clean Fuels for Fleets Program. This program already exists because historically, the District had been classified as a Serious Nonattainment Area for the 160 – 180 ppb 1979 one-hour ozone and the 107 – 119 ppb 1997 eight-hour ozone NAAQS. This program has remained in place because of anti-backsliding provisions.[14] See Chapters 3 and 4 of the 2020 Plan for more information.

[13] 40 CFR § 51.1105, *Transition from the 1997 ozone NAAQS to the 2008 ozone NAAQS and anti-backsliding.*
[14] ibid.

VI. ENVIRONMENTAL IMPACTS

CARB has determined that the proposed 2020 Plan is not a project subject to, or is otherwise exempt from, the requirements of the California Environmental Quality Act (CEQA). CARB's certified regulatory program, which applies to the adoption, approval, amendment, or repeal of standards, rules, regulations, or plans for the protection and enhancement of the State's ambient air quality, has been certified by the California Secretary for Natural Resources under Public Resources Code section 21080.5 of CEQA (14 California Code of Regulations (CCR) 15251(d)). Public agencies with certified regulatory programs are exempt from certain CEQA requirements, including but not limited to, preparing environmental impact reports, negative declarations, and initial studies. For activities that constitute project approvals, as those terms are used in CEQA, CARB, as a lead agency, prepares a substitute environmental document (referred to as an "Environmental Analysis" or "EA") as part of the Staff Report prepared for a proposed action to comply with CEQA (17 CCR 60000-60008).

The 2020 Plan includes comprehensive emission inventories, emissions statements, attainment demonstrations, reasonable further progress demonstrations, assessments of reasonably available control measures and technologies, transportation control measures, programs for enhanced inspection and maintenance, clean fuels for fleets, severe area fees, and identification of contingency measures if San Diego County fails to meet reasonable further progress milestones or attain the standard. The 2020 Plan also includes motor vehicle transportation conformity budgets developed using the EMFAC2017 emissions model that reflects the latest planning assumptions. Lastly, the 2020 Plan also includes CARB's commitment for emissions reductions of approximately 4 tons per day of NOx from the Low NOx Standard, the Advanced Clean Trucks Regulation, and the Heavy-Duty Inspection and Maintenance Program. CARB's approval simply acknowledges and reaffirms requirements, already binding and enforceable, to identify, for SIP planning purposes, the control measures that will achieve emissions reductions, and to revisit air quality photochemical modeling to reflect emission inventory improvements. CARB's reaffirmation of those requirements, and explaining how it has met those requirements through the submittal of this report to the U.S. EPA, does not repeal or revise these requirements, and thus would not cause a substantial change to the environment requiring additional environmental review. (See *Sherwin-Williams Co. v SCAQMD* (2001) 86 Cal.App.4th 1258, 1286.)

Even if the proposed 2020 Plan were considered a project under CEQA, it would be exempt from CEQA under the common sense exemption (14 CCR § 15061(b)(3)) and the Class 8 exemption (14 CCR § 15308). CEQA Guidelines state that, "the activity is

covered by the common sense exemption that CEQA applies only to projects, which have the potential for causing a significant effect on the environment. Where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA," (14 CCR § 15061). The proposed 2020 Plan is also categorically exempt from CEQA under the "Class 8" exemption because it is an action taken by a regulatory agency for the protection of the environment.

The District determined that both of these exemptions apply to their 2020 Plan. In addition, CARB has quantified and committed to achieving reductions of criteria pollutants from mobile sources in the San Diego Air Basin from measures it already analyzed and approved in the State SIP Strategy, and which CARB has already adopted through regulatory processes that involved all required environmental review.[15] CARB's commitment here essentially involves quantifying emissions reductions for specific years that would result from these already-adopted programs. There is no possibility that CARB's quantification of these emissions reductions resulting from programs already in place may result in a significant adverse impact on the environment, nor any substantial evidence indicating the proposal could adversely affect air quality or any other environmental resource area. CARB's commitment here would not alter these existing programs, and thus would have no possibility of causing any new or substantially increased significant impacts related to implementing these programs. Therefore, it can be seen with certainty that there is no possibility that the proposed 2020 Plan may result in significant adverse impact on the environment.

VII. CONCLUSION

CARB staff has concluded that the 2020 Plan for Attaining the National Ambient Air Quality Standards for Ozone in San Diego County prepared by the San Diego County Air Pollution Control District meets the SIP planning requirements of the federal Clean Air Act for a Severe classification for both the 75 ppb 8-hour ozone standard and the 70 ppb 8-hour ozone standard. The elements discussed in this staff report and in the 2020 Plan meet the requirements of the Act.

VIII. STAFF RECOMMENDATION

CARB staff recommends that the Board:

1. Adopt CARB's commitment for the San Diego County Air Pollution Control District of 4 tons NOx per day, to be achieved through CARB's Heavy-Duty

[15] CARB's Advanced Clean Trucks Regulation, Heavy-Duty Vehicle Inspection Program and Periodic Smoke Inspection Program Regulation, and Heavy-Duty Engine and Vehicle Omnibus Regulation.

Engine and Vehicle Omnibus Regulation, Advanced Clean Trucks Regulation, and Heavy-Duty Vehicle Inspection Program and Periodic Smoke Inspection Program.

2. Adopt the 2020 Plan for the federal 75 ppb and 70 ppb 8-hour ozone standards, including the emission inventories, attainment demonstration, RACT SIP, RACM demonstration, RFP demonstration, contingency measures, MCDs, transportation conformity budgets, enhanced inspection and maintenance program, clean fuels for fleets program, and section 185 fee program, including CARB's commitment described below, as a revision to the California SIP.

3. Direct the Executive Officer to submit the 2020 Plan including CARB's commitment to U.S. EPA as a revision to the California SIP.

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