Second Maintenance Plan for the 1997 8-hour Ozone NAAQS

Clark County, Nevada

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EXECUTIVE SUMMARY

This *Second Maintenance Plan for the 1997 8-hour Ozone NAAQS* is submitted by the Clark County Department of Environment and Sustainability to the U.S. Environmental Protection Agency (EPA) to fulfill its requirements related to maintenance plans for the 1997 8-hour ozone National Ambient Air Quality Standard (NAAQS). The plan summarizes Clark County's continued maintenance of the 1997 8-hour ozone standard and presents a plan to assure continued attainment over the next ten years.

This plan provides an ozone attainment demonstration that makes use of the most recently adopted planning variables (e.g., vehicle miles traveled projections and population forecasts) approved by the designated Metropolitan Planning Organization for the Las Vegas urban area, (i.e., the Regional Transportation Commission of Southern Nevada). The plan also provides, among other things, revised emission inventories and updated motor vehicle emissions budgets (MVEBs).

After EPA approval, the plan will become a federally enforceable plan that identifies how Clark County will maintain the 1997 ozone NAAQS through 2033. Once approved, the MVEBs contained in the plan will become the projected budgets that the Regional Transportation Commission of Southern Nevada will use for transportation conformity determinations in future regional transportation plans.

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ACRONYMS AND ABBREVIATIONS

AQR	Clark County Air Quality Regulations
BCC	Clark County Board of County Commissioners
CAA	Federal Clean Air Act
CFR	Code of Federal Regulations
CO	carbon monoxide
DAF	Department of Air Force
DAQ	Clark County Department of Environment and Sustainability, Division of Air Quality
DAQEM	Clark County Department of Air Quality & Environmental Management
DES	Clark County Department of Environment and Sustainability
DRI	Desert Research Institute
EPA	U.S. Environmental Protection Agency
EQM	Environmental Quality Management, Inc
ERC	Emission Reduction Credit
HA	Hydrographic Area
HPMS	Highway Performance Monitoring System
I/M	Nevada Vehicle Inspection and Maintenance Program
MVEB	Motor Vehicle Emission Budget
NAAQS	National Ambient Air Quality Standards
NAC	Nevada Administrative Code
NEI	National Emission Inventory
NDEP	Nevada Division of Environmental Protection
NOx	nitrogen oxides
NRS	Nevada Revised Statues
PM	particulate matter
ppm	parts per million
QAPP	Quality Assurance Project Plan
RTC	Regional Transportation Commission of Southern Nevada
SIP	state implementation plan
SLAMS	State and Local Air Monitoring System
SNSA	Southern Nevada Supplemental Airport
TDM	Transportation Demand Model
tpd	tons per day
TSD	Technical Support Document
VMT	vehicle miles traveled
VOCs	volatile organic compounds

1.0 PLAN OVERVIEW

1.1 INTRODUCTION

The Clean Air Act ("CAA") sets forth the proposition that air pollution prevention and air pollution control are "the primary responsibility of States and local governments" (42 U.S.C. §7401(a)(3)). In recognition of this responsibility, the CAA established a framework of cooperative federalism wherein EPA sets forth minimum requirements for state air quality programs. *See* CAA Section 110 Implementation Plans (42 U.S.C §7410). Under EPA's implementing regulations at 40 C.F.R Part 51, each state must submit plans, referred to as "state implementation plans" or "SIPs" to carry out air pollution control measures required by the CAA. Part of these SIP requirements is the development of maintenance plans for areas previously designated nonattainment with a National Ambient Air Quality Standard ("NAAQS").

In Nevada, under the Nevada Revised Statutes ("NRS") for Air Pollution, each county in the State with a population equal to or greater than 100,000 people must establish a board of county commissioners to establish and implement an air pollution control program. (NRS §445B.500). In 2001, the Clark County Board of County Commissioners ("BCC") established the Department of Air Quality") to carry out the mandated program of air pollution control. The State of Nevada then delegated its responsibilities for meeting CAA requirements, including the requirement to develop and submit maintenance plans, to the BCC. EPA subsequently approved this delegation of power into the Nevada SIP (40 CFR §52.1470). Between 2001 and 2020, the department also functioned under the names "Department of Air Quality and Environmental Management" and "Department of Air Quality Management."

In 2020, the BCC renamed the Department of Air Quality to the Department of Environment and Sustainability and divided the department into three divisions: Air Quality, Desert Conservation Program and Office of Sustainability. The Division of Air Quality ("DAQ") is now responsible for administering the air pollution control program for Clark County under the provisions of the Clark County Air Quality Regulations and the EPA-approved SIP (Clark County Air Quality Regulations Section 00 through Section 94 as adopted in 40 CFR Part 52, Subpart DD). The mission of DAQ is to develop and implement high-quality, effective local programs to fulfill air quality regulatory requirements and address community concerns, thereby protecting the region's quality of life while facilitating orderly growth.

In furtherance of this mission, the DAQ prepared this second maintenance plan to fulfill the State Implementation Plan ("SIP") obligations for Clark County, Nevada. This plan projects that the areas in Clark County previously designated nonattainment for the 1997 8-hour ozone NAAQS (now the "maintenance area") will continue to attain the NAAQS for the entirety of the second maintenance period (2022 through 2033).

To demonstrate continued attainment, DAQ used the Emission Inventory Method (Calcagni 1992). The DAQ previously used the Emissions Inventory Method in its first maintenance plan for the NAAQS- *Ozone Redesignation Request and Maintenance Plan* (hereafter referred to as "the 2011 Maintenance Plan") (DAQEM 2011). EPA approved this plan in 2013 (78 FR 1149). DAQ also used the Emissions Inventory Method for a revision to the Motor Vehicle Emissions Budget

(MVEB) estimates in 2018 (DAQ 2018). EPA conditionally approved this MVEB in 2019 (84 FR 44699).

Using the Emissions Inventory Method, DAQ used the 2017 National Emissions Inventory (NEI) for volatile organic compounds ("VOCs") and nitrogen oxides ("NO_x") as the base year inventory. Then DAQ adjusted those emissions to project future emissions for 2023 and 2033. The adjustments reflect the effect of federal, state, and local rules on VOC and NO_x emissions already adopted or implemented and potential growth in sector emissions during the maintenance period. After making these adjustments, the DAQ projections demonstrate that future annual summer weekday emissions will remain below the attainment year inventory; this demonstrates continued attainment of the 1997 8-hour ozone NAAQS.

The following provides an overview of ozone health effects and the history of ozone nonattainment in Clark County. Sections 2 through 5 of this document contain the recommended elements of a maintenance plan, including a maintenance demonstration, commitment to operate a monitor network, a method for continued verification of attainment, and a contingency measures plan if ambient ozone concentrations approach or exceed the level of the 1997 8-hour ozone NAAQS.

1.2 CHARACTERISTICS AND HEALTH EFFECTS OF OZONE

Ozone is a gas composed of three oxygen atoms that occurs both in Earth's upper atmosphere (stratosphere) and at ground level (troposphere). Ozone in the stratosphere, which extends upward from 6 to 30 miles, occurs naturally, and protects life from harmful ultraviolet rays. In the troposphere, however, ozone poses a significant health risk, especially for children, the elderly, and people with chronic illnesses. It may also damage crops, trees, and other vegetation.

Ground-level ozone is not usually emitted directly into the air but is instead formed through chemical reactions between NOx and VOCs in the presence of sunlight. NOx and VOCs are known as ozone precursor pollutants because of their potential to form ozone through chemical reactions. Ozone and its precursor pollutants can travel hundreds of miles from their original sources through wind currents. This type of pollution is known as "transport" pollution.

Ozone can irritate lung airways and cause an inflammation that resembles sunburn. Symptoms include wheezing, coughing, pain when taking a deep breath, and difficulty breathing during exercise or outdoor activities. Children and those with respiratory problems are particularly susceptible, but ozone can affect even healthy people who are active outdoors. Repeated exposure to ozone pollution over many months may cause permanent lung damage. Even when concentrations are low, ozone pollution may aggravate asthma, reduce lung capacity, and increase susceptibility to respiratory illnesses like pneumonia and bronchitis.

Ground-level ozone may also affect plants and ecosystems. It interferes with the ability of plants to produce and store food, which makes them more susceptible to disease, insects, harsh weather, and other pollutants. This in turn can impact crop and forest yields. In addition, ozone can damage the leaves of trees and other plants.

The United States Environmental Protection Agency ("EPA") classifies sources of NOx and VOCs emissions by sectors (also sometimes called source categories) in the national emissions inventory that include:

Point Sources: Larger emissions sources located at fixed geographic locations such as power plants and industrial manufacturers.

Nonpoint Sources (area sources): Emissions sources that individually are too small to report as point sources. For example, VOC sources include gas stations, dry cleaners, print shops, and consumer products. NOx sources include natural gas-fired sources such as water heaters and agricultural fires.

On-road sources (mobile sources): Vehicles traveling on paved roads that use gasoline, diesel, and other fuels, e.g., cars, trucks, buses, and motorcycles.

Nonroad sources (mobile sources): Off-road mobile sources not traveling on paved roads that use gasoline, diesel and other fuels, e.g., construction equipment and agricultural vehicles, lawn care equipment, and motorboats.

Biogenic: Emissions generated by living organisms or biological processes such as trees.

Rail (mobile): Includes emissions from locomotives.

Airports (mobile and stationary): Emissions from aircraft, auxiliary power units (APUs) and ground support equipment, including ground power units (GPUs).

Emissions Reduction Bank – stored emission reduction credits (ERCs) from previous emissions reduction projects that may be used to offset future emissions increases.

In Clark County, nearly 71% of summer weekday NOx emissions (tpd) come from on-road and off-road mobile sources, and over 74% of VOC summer weekday emissions (tpd) come from biogenic sources. Transport of pollutants from California into southern Nevada also contributes to elevated ozone concentrations in Clark County during the summer months.

1.3 NATIONAL AMBIENT AIR QUALITY STANDARDS FOR OZONE

There are two federal NAAQS for ozone that establish maximum allowable ambient concentrations of ozone: a primary NAAQS that protects public health, including the health of sensitive populations such as asthmatics, children, and the elderly. The secondary NAAQS protects public welfare, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings. EPA originally set a NAAQS for ozone in 1971 based on photochemical oxidant concentrations and then subsequently revised that standard four times.

In 1971, EPA originally set a NAAQS based on 1-hour total photochemical oxidant concentrations below 0.08 ppm (a predecessor to the ozone NAAQS). Later, in 1979, EPA revised the form of the standard and level of the NAAQS to a 1-hour ozone NAAQS of 0.12 ppm. Then in 1997, EPA

revised both the averaging time and form of the ozone NAAQS to set both the primary and secondary 1997 ozone NAAQS at a design value concentration of 0.08 parts per million ("ppm") based on a three-year average of the annual fourth-highest daily maximum 8-hour average concentration ("1997 8-hour ozone NAAQS"). Design values at or above 0.085 ppm are considered a violation of this NAAQS. In 2008, EPA lowered the 1997 8-hour ozone NAAQS to a design value of 0.075 ppm without changing the form or averaging time of the standard. In 2015, EPA further lowered that design value to 0.070 ppm. This maintenance plan sets forth Clark County's plan for continued attainment of the 0.08 ppm 1997 8-hour NAAQS, in accordance with state implementation plan requirements for this former NAAQS. Clark County addresses the subsequent NAAQS in separate planning documents.

The following section discusses these NAAQS revisions as they relate to Clark County's attainment and maintenance of those standards.

1.4 HISTORY OF THE CLARK COUNTY NONATTAINMENT AREA

The history of Clark County's ozone air quality planning efforts spans multiple decades through the four NAAQS revisions. EPA's implementation rules and federal court decisions related to those rules also impacted the requirements and submission deadlines for meeting SIP requirements. The following provides a brief overview of these events and efforts.

On March 3, 1978, EPA designated the Las Vegas Valley a nonattainment area for the 1971 photochemical oxidant NAAQS (43 FR 8962). Air quality monitoring data for calendar years 1975 through 1977 showed violations of the 1-hour ozone NAAQS (0.08 ppm) in effect at the time.

On February 8, 1979, the EPA established a primary 1-hour ozone NAAQS of 0.12 ppm (44 FR 8220) and designated the Las Vegas Valley as a nonattainment area for that NAAQS. Thereafter, the DAQ required targeted industries to implement control technologies that curbed precursor pollutants because research demonstrated that industrial processes within Clark County contributed to elevated ozone levels. By the end of 1984, Clark County had implemented a suite of control technologies and completed a SIP demonstrating attainment of the 1979 ozone NAAQS.

In January 1985, the Nevada governor submitted the Clark County ozone SIP to EPA for review and approval. This SIP demonstrated attainment of the 1979 1-hour ozone NAAQS, in accordance with EPA requirements and federal law. In April 1986, the state of Nevada requested that EPA redesignate the Las Vegas Valley as an attainment area and provided documentation showing how control measures and technologies resulted in improved air quality and compliance with the 1979 ozone NAAQS. EPA approved the SIP submission in August 1986, and on November 19, 1986, EPA re-designated the Las Vegas Valley to an attainment area for the 1979 1-hour ozone NAAQS effective January 20, 1987 (51 FR 41788).

Clark County remained in compliance with the 1979 1-hour ozone NAAQS for over a decade. Then, on July 18, 1997, EPA revised the ozone NAAQS (62 FR 38856), replacing the 1979 1-hour 0.12 ppm ozone NAAQS with the 1997 8-hour ozone NAAQS. This rule became effective September 16, 1997.

On June 27, 2003, Clark County submitted a recommendation to the Nevada Department of Environmental Protection (NDEP) that EPA designate Clark County as an attainment area for the 1997 8-hour ozone NAAQS. At that time, the preceding three years of data (2000, 2001, and 2002) indicated that Clark County complied with the 1997 8-hour ozone NAAQS. On July 10, 2003, pursuant to Section 107(d) of the 1990 CAA, the State of Nevada submitted this recommended designation to EPA's Region 9 office. EPA subsequently agreed with the governor's recommendation but noted that it was tracking 2003 ozone monitoring data. That data indicated that Clark County exceeded the NAAQS at one location.

Before acting on the governor's recommended designation, EPA promulgated an implementation rule for the 1997 8-hour ozone NAAQS on April 30, 2004 (69 FR 23951). Both Subpart 1 and Subpart 2 of the CAA contain planning and control requirements for areas designated nonattainment. CAA Subpart 1 contains general requirements that apply to all nonattainment areas for any NAAQS, while CAA Subpart 2 contains requirements specific to ozone classifications based on EPA's 1979 1-hour ozone NAAQS. Under the final rule, EPA would designate ozone nonattainment areas with 8-hour ozone design values above the 1997 8-hour ozone NAAQS under Subpart 2 based on that area's current 1-hour ozone design values. If an area's current design value was below the level of the 1979 1-hour ozone NAAQS (as was Clark County's), but above the 1997 NAAQS (as was Clark County's), then EPA would designate that area as a "basic" ozone nonattainment area under Subpart 1.

Using this approach for designations, EPA on the same day as the promulgation of the implementation rule (April 30, 2004) designated Clark County as a basic nonattainment for the 1997 8-hour ozone NAAQS, to become effective 45 days later. (69 FR 23858). EPA based its decision on the 2001, 2002, and 2003 monitoring data, which showed the area was not meeting the 1997 8-hour ozone NAAQS. Before this designation became effective, however, the Nevada Governor submitted a request to EPA, on May 21, 2004, asking EPA to delay the effective date of this nonattainment designation for Clark County until October 15, 2004 to provide Clark County time to revise its designation recommendation. EPA agreed and promulgated a final rule deferring the effective date of the nonattainment designation to September 13, 2004 (69 FR 34076). The EPA further agreed that relevant factors for defining a nonattainment area might support a different recommendation than the one the state submitted on April 12, 2004. On August 2, 2004, the state submitted a revised recommendation to designate a portion of the County (instead of the entire county) nonattainment for the 1997 8-hour ozone NAAQS. This recommendation encompassed the following hydrographic areas (HAs) in Clark County:

- Ivanpah Valley (HAs 164A, 164B, 165, and 166).
- Eldorado Valley (HA 167).
- Las Vegas Valley (HA 212).
- Colorado River Valley (HA 213).
- Paiute Valley (HA 214).
- Apex Valley (HAs 216 and 217).
- A portion of Moapa Valley (HA 218).

EPA accepted the state's recommendations and issued a final rule on September 17, 2004, delineating the revised boundaries consistent with the included HAs (69 FR 55956). Figure 1-1

shows the areas within Clark County designated as basic nonattainment for the 1997 8-hour ozone NAAQS in this rule.

Subsequently, on December 22, 2006, a three-judge panel from the U.S Court of Appeals for the District of Columbia Circuit vacated EPA's Phase 1 Implementation Rule for the 1997 ozone NAAQS (472 F. 3d 882 (D.C. Cir. 2006)), including use of the basic nonattainment classification under CAA Subpart 1. EPA and other organizations filed petitions for an *en banc* review (review by the entire Court) of the decision. On June 8, 2007, the full Court revised the decision by vacating only certain portions of the Phase I rule. The vacatur, however, included the "basic" classification determinations for nonattainment areas like Clark County. Following the Court's decision, EPA issued a memorandum (dated 6/15/2007) stating that nonattainment areas classified under "Subpart 1 are not currently subject to the June 15, 2007, submission date for their attainment demonstrations." These actions obligated Clark County to develop and submit to EPA in 2008 the *8-Hour Ozone Early Progress Plan for Clark County, Nevada* (DAQEM 2008) to establish motor vehicle emission budgets (MVEBs) for maintaining transportation conformity. The BCC adopted and approved the early action plan on June 17, 2008. EPA formally approved these MVEBs on May 14, 2009 (74 FR 22738).

On March 29, 2011, EPA determined that the Clark County 1997 8-hour ozone nonattainment area attained the ozone NAAQS based on monitoring data from 2007 through 2009 (76 FR 17343). At the same time, DAQEM prepared and submitted a request for EPA to redesignate the nonattainment area to attainment, along with a 2011 maintenance plan for the first ten-year period following redesignation to attainment (DAQEM 2011). EPA approved this submission and formally redesignated the 1997 8-hour ozone nonattainment area to attainment on January 8, 2013. (78 FR 1149)

In the meantime, EPA revised the ozone NAAQS in 2008 to lower the allowable ambient concentration from 0.08 ppm to 0.075 ppm based on the three-year average of the annual fourth-highest daily maximum 8-hour average ozone concentrations (73 FR 16436). The EPA designated the entirety of Clark County as attainment for the 2008 ozone NAAQS, even though it had not yet redesignated portions of the County to attainment for the 1997 ozone NAAQS. (77 FR 30088, May 21, 2012). EPA called such areas with different designations for the two NAAQS "orphan maintenance areas."

Under CAA section 175A(b), states must submit a revision to the first maintenance plan eight years after redesignation to provide for maintenance of the NAAQS for ten additional years following the end of the first 10-year maintenance period. U.S. EPA's final implementation rule for the 2008 ozone NAAQS, however, revoked the 1997 ozone NAAQS and provided that, the CAA no longer required orphan maintenance areas, such as Clark County, to submit a second 10-year maintenance plan. *See* 40 CFR § 51.1105(d) (vacated).

The South Coast Air Quality Management District, among others, challenged EPA's interpretation of the CAA with respect to second 10-year maintenance plan obligations in *South Coast Air Quality Management District v. EPA* 882 F.3d 1138 (D.C. Cir. 2018). The D.C. Circuit sided with the plaintiffs and vacated the portion of the regulations which had removed the CAA's second year maintenance plan requirements for orphan maintenance areas. With this portion of the rule vacated,

Clark County now remains under an obligation to submit a second 10-year maintenance plan for the 1997 ozone NAAQS.

While Clark County continues to maintain ambient ozone concentrations below both the 1997 8-hour ozone NAAQS and the 2008 8-hour ozone NAAQS, EPA, in 2015, revised and lowered the primary and secondary ozone NAAQS again to a maximum concentration of 0.070 ppm based on a 3-year average of the annual fourth-highest daily maximum 8-hour average concentration ("2015 8-hour ozone NAAQS") (80 FR 65292).

In 2016, Nevada recommended that EPA designate HAs 164A, 165, and 212 as nonattainment for the current 2015 8-hour ozone NAAQS based on 2013-2015 monitoring data. On December 20, 2017, EPA notified NDEP through issuance of a 120-day notice letter that it intended to revise the NDEP's recommendation by also designating HA 216 as nonnattainment for the 2015 8-hour ozone NAAQS after considering multiple factors and design value data from 2014-2016 (Strauss 2017; *Also see* 83 FR 651). On February 23, 2018, NDEP responded to EPA's 120-day notice letter and recommended that EPA designate HAs 164A and 165 attainment to reflect 2015-2017 data which demonstrated design values below the 2015 8-hour ozone NAAQS, and designate HA 216 as attainment because meteorological conditions show that this area does not contribute to ambient air quality concentrations in the Las Vegas Valley (Lovato 2018). On June 4, 2018, EPA designated only HA 212 as nonattainment for the 2015 8-hour ozone NAAQS (83 FR 25776).

In 2020, EPA completed its review of the 2015 ozone NAAQS and declined to revise either the primary or secondary standards (85 FR 87256). That decision is under review by the current EPA Administration. Also in 2020, DAQ submitted its emissions inventory and emissions statement requirements for the Las Vegas Valley nonattainment area, *Revisions to the Nevada State Implementation Plan for the 2015 Ozone NAAQS: Emissions Inventory and Emissions Statement Requirements* (DES 2020).

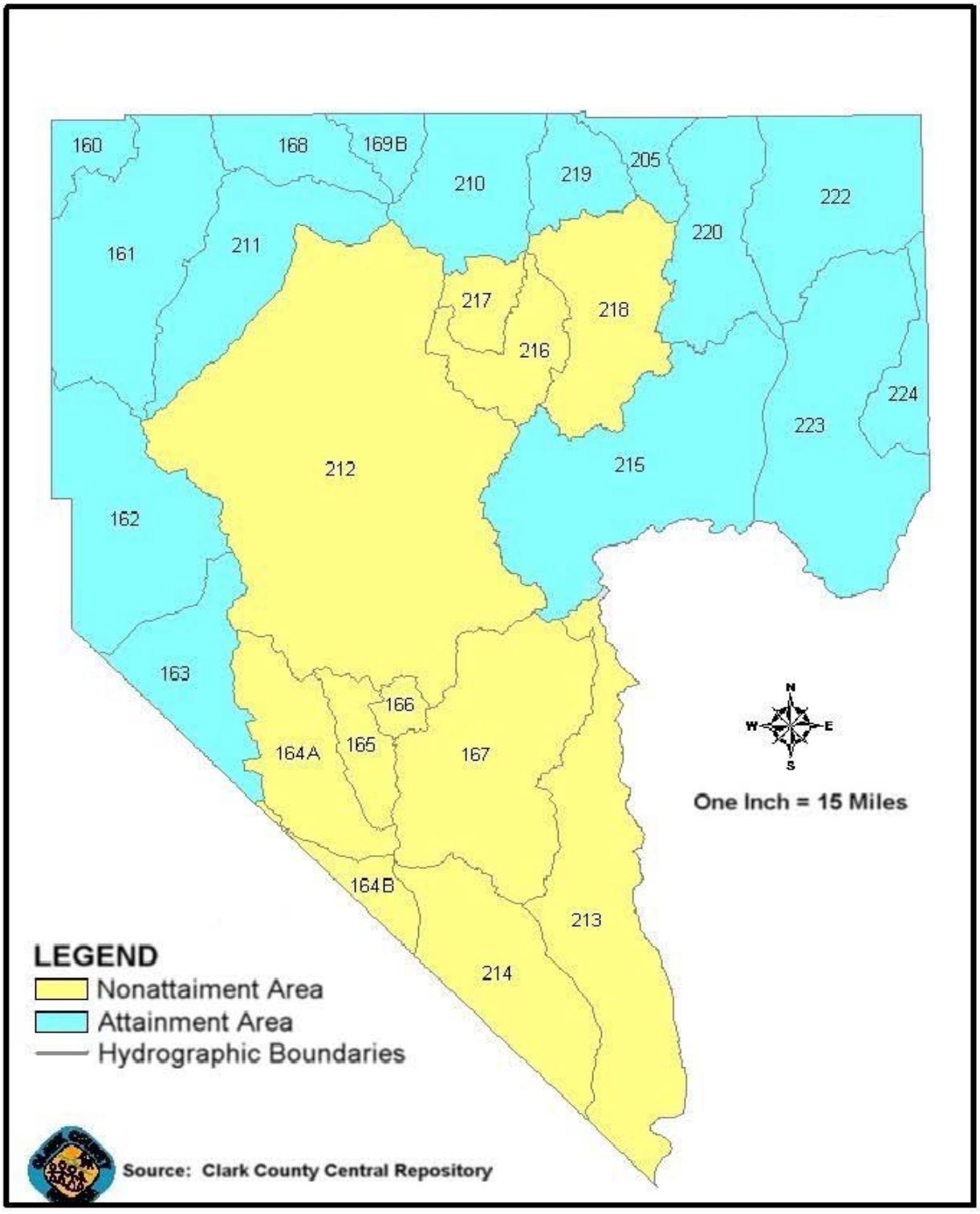


Figure 1-1. Clark County 1997 8-hour Ozone NAAQS Maintenance Area.

1.5 REQUIREMENTS FOR A MAINTENANCE PLAN

CAA Section 175A contains requirements for maintenance plans. This Section provides that a state must submit a revision to the SIP to provide for the maintenance of a NAAQS for at least ten (10) years after the effective date of EPA's re-designation of an area from nonattainment to attainment. This CAA Section further requires that each state submit a second maintenance plan demonstrating how the area will continue to maintain attainment with the NAAQS for an additional 10-year period following the first maintenance period. A state must submit this second maintenance plan eight (8) years after EPA redesignates the area to attainment (42 U.S.C. 7505a).

The CAA does not enumerate specific requirements for an approvable maintenance plan submission other than directing that it contain additional control measures as necessary to ensure continued attainment. (42 U.S.C. 7505a). EPA addressed the contents of an approval maintenance plan in guidance issued in 1992. Under EPA's guidance, EPA recommends that an ozone maintenance plan address:

1. Attainment Inventories (for the ozone NAAQS, this includes VOC and NO_x emissions based on a typical summer day);
2. Maintenance demonstration showing continued attainment for the 10-year maintenance period (using modeling or projected emissions inventories below the attainment year inventory);
3. Commitment to maintain a monitoring network;
4. Verification of attainment of the NAAQS (a method of tracking progress of the maintenance plan); and
5. Contingency plan that provides for measures to bring an area back into attainment if it exceeds the NAAQS in the future ("1992 Calcagni Guidance") (Calcagni 1992).

The 1992 Calcagni Guidance uses the terminology of "contingency measures" for the contingency plan, but explains that these measures are different from the contingency measures required by CAA Section 172(c)(9). For purposes of CAA Section 175A, the maintenance plan needs to identify measures and the procedures for when the state would adopt control measures, including specific triggering indicators and the timeline for state adoption of such measures.

In 2018, EPA issued further guidance reiterating the continued relevance of the 1992 Calcagni Guidance for states required to submit a second maintenance plan for the 1997 8-hour ozone NAAQS. The 2018 guidance explained that states can use limited maintenance plans to demonstrate continued maintenance when the area remains "substantially below the level of the standard (e.g., 85% of the level of the standard), and [if] air quality levels had not been highly variable during the preceding years." For areas that do not meet the criteria for a limited maintenance plan, EPA guidance "instructs states to provide for the maintenance of the [NAAQS] using projected emissions inventories or air quality modeling showing continued maintenance until the end of the relevant period" (U.S. EPA 2018).

1.6 2011 MAINTENANCE PLAN

After EPA designated portions of Clark County nonattainment for the 1997 8-hour ozone NAAQS, the nonattainment area achieved attainment in 2008 based on a design value of 0.082 ppm. Attainment was based on EPA's Clean Data policies (70 FR 71612, 71645-46) considering the three-year average of the 4th highest ozone concentrations for the years 2006-2008. Clark County continued a downward trend in ozone concentrations, and EPA redesignated the Clark County 1997 8-hour ozone nonattainment area to attainment effective February 7, 2013 (78 FR 1149, Jan. 8, 2013). In accordance with CAA requirements, DAQ submitted the 2011 Ozone Maintenance Plan to demonstrate continued attainment with the 1997 ozone NAAQS for the 10-year period, including 2013 through 2022. The EPA approved this plan when EPA redesignated the County to attainment. *Id.* Under CAA Section 175A's directives, the second maintenance period for Clark County includes years 2023 through 2033.

Clark County's 2011 Ozone Maintenance Plan used the Emissions Inventory Method for its maintenance demonstration rather than conducting air quality modeling. The 2011 Ozone Maintenance Plan used 2008 emissions as the attainment year and projected future emissions for the years 2015 and 2022 to demonstrate continued attainment over the first ten-year maintenance period (2013-2022).

The future emission projections reflected federal, state and local rules that permanently reduced NO_x and VOC emissions. DAQ committed to continue to operate the air quality monitoring network and to conduct annual reviews of the State and Local Air Monitoring System ("SLAMS") air quality surveillance system as the means to verify continued attainment with the 1997 8-hour ozone NAAQS.

On October 31, 2018, DAQ submitted a revision to the 2011 Ozone Maintenance Plan to revise the motor vehicle emissions budgets and update the emissions inventory and the maintenance demonstrations based on more current emissions inventory data and computer models ("2018 MVEB") (DAQ 2018). Specifically, DAQ developed the 2011 Ozone Maintenance Plan using Mobile6 motor vehicle emissions model. Since the MVEB continue to be an important planning and compliance tool for transportation conformity, DAQ revised the budget using the most current modeling tool available at that time MOVES2014a and SMOKE-MOVES. DAQ updated the nonroad emissions modeling using NONROAD in the MOVES2014a model.

The 2018 MVEB submission also updated 2008 nonpoint source emissions category by using SMOKE modeling of the 2008 NEI data and 2014 NEI data as a surrogate for 2015 emissions. DAQ then re-projected 2022 emissions using an annual rate of change projection taken from EPA's 2011 Version 6 Air Emissions Modeling Platform.

These updates resulted in a smaller 2008 attainment year emissions budget for VOC but a higher 2008 attainment year emissions budget for NO_x compared to the 2011 Maintenance Plan. Both emissions projections showed greater emissions reductions over the maintenance period for the precursor pollutants.

EPA conditionally-approved the 2018 Revised Maintenance Plan SIP submission on August 27, 2019 (84 FR 44699). The conditional approval required DAQ to reduce the safety margin allocation in the motor vehicle portion of the emissions budgets to assure that the 2018 Revised Maintenance Plan would not interfere with reasonable further progress or attainment of the 2008 or 2015 ozone NAAQS.

DAQ promptly responded to the conditional approval and prepared and submitted a revised MVEB in September 2020 (DES 2020) ("2020 MVEB"). The 2020 MVEB also updated the VOC and NO_x emissions inventory in the 2018 MVEB using 2017 NEI data as the new attainment year emissions and continued to project a reduction in the attainment year emissions inventory through the end of the maintenance period (2022). DAQ revised the on-road and nonroad emissions budgets using the further updated emissions model (MOVES 2014b) and reduced the safety margin applied to the emissions projections.

As previously explained, the EPA originally removed the requirement that orphan maintenance areas submit a second maintenance plan after interpreting the CAA as no longer applying this requirement to these areas when EPA revoked the 1997 ozone NAAQS in its SIP regulations. In *South Coast Air Quality Management District* (2018), the D.C. Circuit Court of Appeals declined to accept EPA's interpretation of the CAA and vacated 40 CFR §51.1105(d) of EPA's rule. This reinstated orphan maintenance areas' obligation to submit a second maintenance plan. Although EPA has not revised its regulations to reflect the D.C. Circuit Court's decision, under the reasoning of that decision and by operation of the CAA, the second maintenance plan submission for the 1997 Clark County 8-hour ozone nonattainment area is now due as of February 2021 (eight years after the effective date of the redesignation). Following the *South Coast Air Quality Management District* decision, Clark County worked diligently to update and revise the 2018 approved SIP revision and the pending 2020 MVEB submissions to prepare this second maintenance plan to meet its CAA Section 175A obligations.

2.0 MAINTENANCE DEMONSTRATION

2.1 INTRODUCTION

The Clark County 1997 8-hour ozone maintenance area continues to attain the 1997 ozone NAAQS. Figure 2-1 shows Clark County's ozone design values for 2008–2020. The design values represent a 3-year average of the fourth highest daily maximum 8-hour concentration registered at a monitor within the area. The fourth-highest value for the respective year is averaged with the two previous years to compute a three-year average value for a monitoring site. The monitoring site with the highest 3-year average defines the design value for the area, assuming the site includes a complete three years of quality assured data. This method for computing ozone design values is codified at 40 CFR Part 50, Appendix I.

Clark County's ozone design value history (Figure 2-1) shows a downward linear trend from 2008 through 2020 despite slight increases in the design values in 2012, 2013, 2014, and 2018. The monitors show that the maintenance area has not experienced greater than a 2 ppb increase in design value since reaching attainment, and the current design value of 74 ppb remains appreciably below the 1997 8-hour ozone NAAQS.

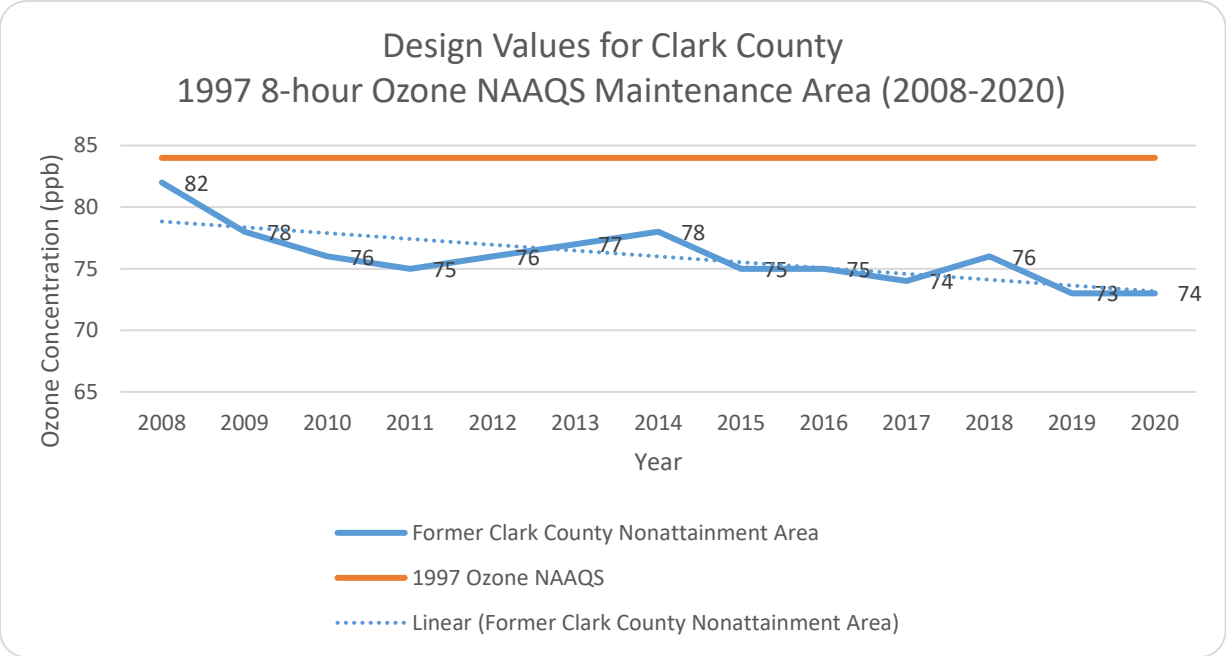


Figure 2-1. Design Values for Clark County 1997 8-hour Ozone NAAQS Maintenance Area.

On June 4, 2018, EPA completed its designation process by designating only HA 212 as nonattainment for the 0.070 ppm 2015 8-hour ozone NAAQS. (83 FR 25776) This action confirms that most of the monitors in the Clark County 1997 8-hour ozone nonattainment area monitored concentrations below 0.070 ppm ozone. Notably, the 2015 ozone design value is greater than 85% below the 1997 8-hour ozone NAAQS design value, and thus, but for HA 212, DAQ could demonstrate continued attainment for the area based solely on monitored values.

2.2 DETAILED HISTORIC VALUES

Tables 2-1 and 2-2 show the 4th highest ozone concentration (ppm) for the years 2017-2020, and the corresponding design value for each monitor for 2019 and 2020. Design Values for the 1997 Clark County 8- hour Ozone Maintenance Area in combination with these tables verify that the Clark County maintenance area remains in attainment with the 1997 8-hour ozone NAAQS, in accordance with the federal requirements of 40 CFR Part 58. The data also depict a downward trend in ozone concentrations in the Clark County maintenance area as shown in Figure 2-1. (*The Apex, Mesquite and Boulder monitoring sites were deactivated after the 2020 ozone season.)

Table 2-1. Three Year Average of the 4th Highest Ozone Concentrations (ppm) by Monitoring Station (2018-2020)

Site Name	Site Code	2018	2019	2020	Design Value (2018-2020)
Apex*	32-003-0022	0.073	0.063	0.067	0.067
Mesquite*	32-003-0023	0.064	0.062	0.064	0.063
Paul Meyer	32-002-0043	0.075	0.069	0.077	0.073
Walter Johnson	32-002-0071	0.076	0.068	0.077	0.073
Palo Verde	32-003-0073	0.072	0.062	0.067	0.067
Joe Neal	32-003-0075	0.076	0.068	0.078	0.074
Green Valley	32-0030-298	0.077	0.070	0.071	0.072
Jerome Mack	32-0030-540	0.075	0.067	0.067	0.069
Boulder City*	32-003-0601	0.069	0.066	0.067	0.067
Jean	32-003-1019	0.072	0.066	0.070	0.069
Indian Springs	32-0037-772	0.073	0.065	0.069	0.069

Source: EPA Air Quality System, (available at: AQS API | AirData | US EPA) last accessed 06/23/2021

Table 2-2. Three Year Average of the 4th Highest Ozone Concentrations (ppm) by Monitoring Station (2017-2019)

Site Name	Site Code	2017	2018	2019	Design Value (2017-2019)
Apex*	32-003-0022	0.069	0.073	0.063	0.068
Mesquite*	32-003-0023	0.062	0.064	0.062	0.062
Paul Meyer	32-002-0043	0.070	0.075	0.069	0.071
Walter Johnson	32-002-0071	0.075	0.076	0.068	0.073
Palo Verde	32-003-0073	0.074	0.072	0.062	0.069
Joe Neal	32-003-0075	0.076	0.076	0.068	0.073
Green Valley	32-0030-298	0.070	0.077	0.070	0.072
Jerome Mack	32-0030-540	0.065	0.075	0.067	0.069
Boulder City*	32-003-0601	0.067	0.069	0.066	0.067
Jean	32-003-1019	0.066	0.072	0.066	0.068
Indian Springs	32-0037-772	0.066	0.073	0.065	0.068

Source: EPA Air Quality System, (available at: AQS API | AirData | US EPA) last accessed 4/28/2021

2.3 PERMANENT AND ENFORCEABLE MEASURES

To achieve attainment of the 1997 8-hour ozone NAAQS, DAQ implemented emissions control measures that lead to a permanent and enforceable improvement in air quality. As outlined in the 2011 Maintenance Plan, these emissions reduction control measures included:

1. Federal Tier 2 vehicle emissions standards (65 FR 6822).
2. Federal highway diesel rule (66 FR 5001).
3. Federal large nonroad diesel engines rule (69 FR 38958).
4. Nonroad spark-ignition engines and recreational engines standards (65 FR 76789).
5. Federal nonroad spark-ignition engines and equipment standards (73 FR 59034).
6. Nevada vehicle inspection and maintenance (I/M) program (Nevada Revised Statutes (NRS) 445B and Nevada Administrative Code (NAC) 445B).
7. Clark County stationary point and nonpoint source air quality regulations (AQRs). (DAQEM 2011)

These emissions control measures will remain in place in the maintenance area through the second maintenance period. Recently, however, the State of Nevada's 81st Legislative Session (which concluded on June 1, 2021) passed Assembly Bill 349 (AB 349) affecting the I/M program. Clark County Chapter 445B in the NRS and the NAC set forth the regulations governing motor vehicles in Clark County. Adopted in 1978 and administered by the Nevada Department of Motor Vehicles, these regulations establish annual testing procedures for 1968 or newer gasoline-powered vehicles, regardless of size, and for diesel-powered vehicles with a manufacturer's gross vehicle weight rating of up to 10,000 pounds.

The Nevada I/M program allows exemptions from emission testing for new vehicles for the first two years of the life of the motor vehicle until AB 349 becomes effective, new hybrid-electric vehicles during their first five model years, alternative fuel vehicles, vehicles registered as Classic Rods or Classic Vehicles and driven for general transportation 5000 miles or less per year, and vehicles registered as Replica Vehicles. In addition, on-board diagnostic testing procedures are used for 1996 and newer vehicles, while older vehicles are tested with a two-speed idle test. The I/M program also includes waiver provisions for motorists who spend $450 on emission-related repairs. No waivers are allowed for vehicles that emit visible smoke.

AB 349 now exempts new motor vehicles from the emissions test requirement for the first three years of the life of the motor vehicle. This change from the current 2-year exemption takes effect on October 21, 2021. DAQ does not expect this change to affect air quality in the maintenance area as newer vehicles are generally less polluting than older models, and newer cars are not expected to have emissions issues the I/M program are designed to detect.

2.4 EMISSIONS INVENTORY METHOD

DAQ selected the Emissions Inventory Method to demonstrate that the 1997 8-hour ozone maintenance area will continue to maintain attainment with the 1997 8-hour ozone NAAQS. This method is explained in the 1992 Calcagni Guidance and in *Emissions Inventory Guidance for Implementation of Ozone and Particulate Matter National Ambient Air Quality Standards (NAAQS) and Regional Haze Regulations* (EPA 2017b). Using this method, an area must show

that its future year emissions will be equal to or less than the baseline emissions over the maintenance period. As summarized below, and documented in detail in Appendix A, projected emissions in 2023 and 2033 are below the 2017 baseline year's emissions inventory. Accordingly, DAQ successfully demonstrates continued attainment for the second maintenance period using the Emissions Inventory Method.

2.4.1 Attainment Year Emissions Inventory

For purposes of a maintenance plan, the baseline year to which future years are compared is referred to as the "attainment year emissions inventory." An attainment year emissions inventory should include a 'comprehensive, accurate, current inventory of actual emissions from all sources." (EPA 2017b). The attainment year emissions inventory must also be a year in which the area is attaining the NAAQS as documented through monitoring stations in the area.

For the 2011 Maintenance Plan, DAQEM used 2008 for the entire Clark County area as the attainment year emissions inventory. (DAQEM 2011) This is the first year that the maintenance area reached attainment with 1997 8-hour ozone NAAQS. For this second maintenance plan, DAQ used 2017 as the attainment year inventory. This is the most recent year for which the EPA compiled and verified data for the comprehensive triennial inventory and is also the year DAQ used in the 2018 and 2020 MVEBs. As shown in Figure 2-1, the design value for 2017 was below the 1997 8-hour ozone NAAQS, so the 2017 emissions inventory meets the criteria for an attainment year emissions inventory.

Importantly, the ozone concentration design value for 2017 equaled 0.074 ppm, which is 12% below the 1997 8-hour ozone NAAQS. This means that emissions could go above the attainment year emissions inventory by some amount without elevating ambient ozone concentrations to levels that exceed the NAAQS. Nevertheless, for purposes of the Emissions Inventory Method, DAQ demonstrates that emissions will remain below the 2017 levels.

Table 2-3 shows the 2017 emissions inventory (tpd) for both precursor pollutants, NO_x and VOC, by sector. Note that this inventory differs slightly from the 2017 attainment year emissions inventory submitted in the 2020 MVEB due to refinements of that inventory.

Table 2-3. 2017 Attainment Year Emissions Inventory (tpd)

	2017	
Sector	**NO_x**	**VOC**
Point Source	12.34	2.95
Nonpoint Source	4.69	64.69
Mobile- On-road	42.20	26.27
Mobile- Nonroad	37.45	28.86
Airports	11.90	1.96
Locomotive	1.42	0.07
Emission Reduction Bank	0.00	0.00
Biogenic	2.43	362.61
Total	**112.43**	**487.41**

2.4.2 Attainment Demonstration

For ozone, the baseline year's emissions for NO_x and VOC are compared to future year projections on a ton per day (tpd) basis for a typical summer weekday (EPA 2017b). For the second maintenance plan period, DAQ projected future summer weekday emissions for 2023 and 2033 -- the first year of the second maintenance period and the final year of the second maintenance period.[1]

Appendix A describes DAQ's methodology for developing emissions inventory projections for NO_x and VOC for the second maintenance plan in detail. In brief, as with the 2011 Maintenance Plan, the second maintenance plan includes emissions inventories for eight sectors: on-road mobile, nonroad mobile, point sources, nonpoint sources, biogenic, commercial and federal aviation (airports), locomotive, and banked emission reductions credits. DAQ used local activity data to project future commercial airport emissions and conducted MOVES3 modeling to project future on-road and nonroad mobile emissions.

For the other categories, DAQ generally developed future year growth adjustment factors (GAFs) for the point, nonpoint, federal aviation, and locomotive sectors based on EPA's 2016 v.1 modeling platform data. The modeling platform is a collaborative effort between EPA, state/local emission inventory staff, multijurisdictional organizations, and others to develop an emissions modeling platform for use in photochemical modeling for the 2015 ozone NAAQS and other regulatory actions. It includes a base year of 2016 emissions and then projects emissions for 2023 and 2028. EPA encourages air agencies to use the data and documented approaches in the emissions modeling platform in making their own projections. "EPA's 'emissions modeling platform'…[include] data and thoroughly documented approaches [that] can help air agencies to develop and improve their own emissions projections" (EPA 2017b).

Tables 2-4 and 2-5 summarize the VOC and NO_x emissions projections for each sector and the total emissions changes for Clark County over the maintenance period. These inventories are further documented in tables located in Appendix A.

[1] The U.S. EPA redesignated Clark County to attainment for the 1997 8-hour ozone NAAQS on January 8, 2013. Accordingly, the second maintenance period runs from January 8, 2023 through January 7, 2033. Although the second maintenance period ends before the 2033 ozone season, U.S. EPA Region 9 requested that DAQ include the 2033 ozone season in its emissions inventory projections.

Table 2-4. Total Summer Weekday VOC Emissions Projections by Sector (tpd)

Sector	Attainment Year Inventory 2017 VOC	Projected Inventory 2023 VOC	Projected Inventory 2033 VOC	Emissions Change (2017-2033)
Point Source	2.95	2.62	2.63	-0.32
Nonpoint Source	64.69	67.83	71.31	6.62
Mobile- On-road	26.27	17.85	11.50	-14.77
Mobile- Nonroad	28.86	27.24	27.82	-1.04
Airports	1.96	2.64	3.05	1.09
Locomotives	0.07	0.05	0.04	-0.03
Emission Reduction Bank	0.00	0.43	0.43	0.43
Biogenic	362.61	362.61	362.61	0.00
Total	**487.41**	**481.27**	**479.39**	-8.02

Table 2-5. Total Summer Weekday NO_x Emissions Projections by Sector (tpd)

Sector	Attainment Year Inventory 2017 NO_x	Projected Inventory 2023 NO_x	Projected Inventory 2033 NO_x	Emissions Change (2017-2033)
Point Source	12.34	11.41	11.33	-1.01
Nonpoint Source	4.69	5.03	4.78	0.09
Mobile- On-road	42.20	22.22	11.13	-31.07
Mobile- Nonroad	37.45	23.27	15.37	-22.08
Airports	11.90	15.53	19.77	7.87
Locomotives	1.42	1.21	0.96	-0.46
Emission Reduction Bank	0.00	22.23	22.23	22.23
Biogenic	2.43	2.43	2.43	0.00
Total	**112.43**	**103.33**	**88.00**	-24.43

These emissions projections show that future year summer weekday emissions (tpd) for both VOC and NO_x will be below the 2017 attainment year emissions inventory. Because emissions in 2023 and 2033 are below the 2017 attainment year emissions, DAQ demonstrates continued attainment for the second maintenance period. Figure 2-2 illustrates that biogenic emissions dominate the VOC emissions inventory from the baseline year through the end of the second maintenance period in 2033 with a total of 74-76% of the emissions. DAQ projects a 7% emissions reduction from other sectors by 2033.

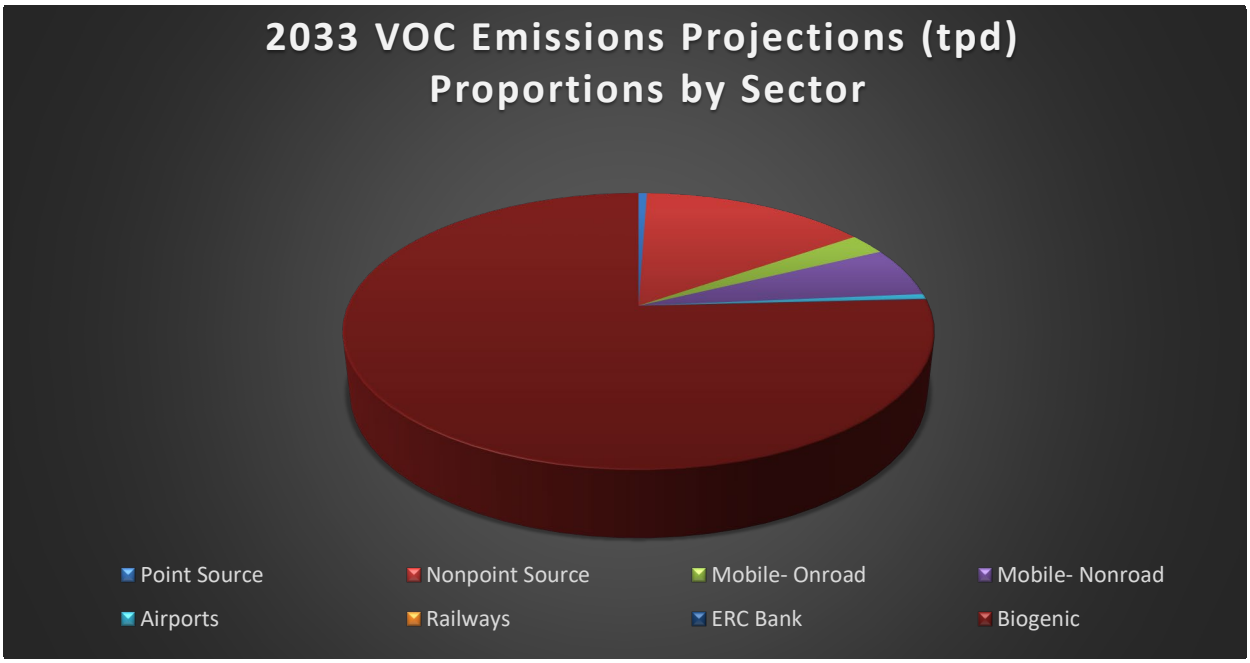


Figure 2-2. 2033 VOC Emissions Projections (tpd) Proportions by Sector.

The total emissions in Clark County from the sectors show a decrease from 2017 to 2033 of 24.43 tpd NO_x and 8.02 tpd of VOC. The largest decreases come from the on-road and nonroad mobile sectors for both pollutants. The total projected emissions include emissions increases from potential use of banked emission reduction credits (ERC). If none of these ERCs are used, then the margin of emissions decreases for NO_x would nearly double; for VOC, the margin would increase by over 5%.

On-road mobile emissions dominated the 2017 NO_x emissions inventory by comprising approximately 38% of that inventory. Mobile source emissions from the nonroad sector followed by comprising 33% of the 2017 NO_x inventory. The 2033 emissions projections show that these two sectors will continue to be dominant sources of summer weekday emissions, but as emissions decrease from these sectors and emissions increase from the airport sector, the airport sector will become the dominant source of NO_x emissions by 2033 (not considering the ERC bank). By 2033, airports comprise 22% of the inventory, while on-road and nonroad mobile emissions decline to 13% and 18% of the emissions inventory, respectively. Interestingly, the NO_x ERC banked emissions comprise the largest (albeit potential) sector by 2033; those emissions will occur only to the extent that a proposed new source or modification acquires some or all those credits to offset its proposed emissions increase. Therefore, the ERC emissions represent potential emissions increases; including all the ERC in the inventory is a very conservative approach that likely overstates actual 2033 emissions.

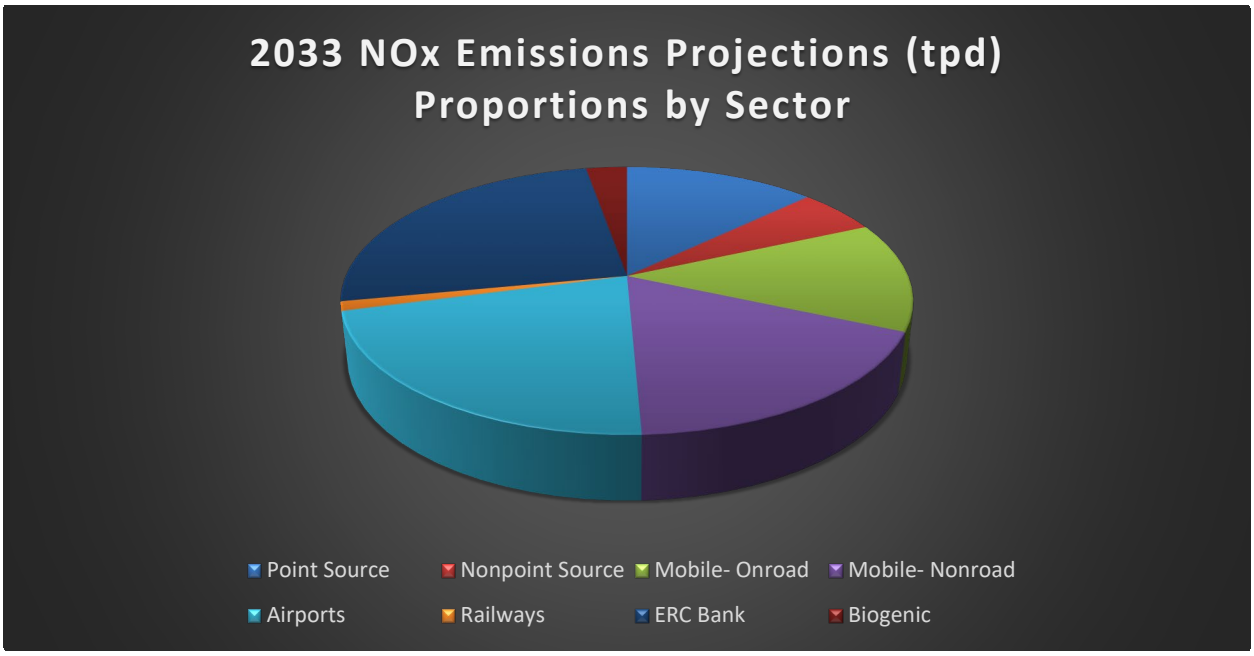


Figure 2-3. 2033 NO_x Emissions Projections (tpd) Proportions by Sector.

3.0 MONITORING NETWORK

DAQ will continue to operate a network of ambient air monitoring stations to comply with EPA requirements and guidance to characterize ambient air quality in Clark County. Title 40, Part 58 of the Code of Federal Regulations (40 CFR Part 58 including Appendices A, B, C, D and E) defines the requirements for the ambient air quality monitoring programs mandated by the CAA. Under these rules, every state must establish a monitoring network for criteria air pollutants that meets location and operation specifications. Monitors used to satisfy these requirements are called State and Local Air Monitoring Stations ("SLAMS"). DAQ operates multiple SLAMs monitors in its network that are designed to monitor for ozone.

DAQ also may operate Special Purpose Monitors. These monitors are used to meet short-term or specific monitoring goals. As outlined in 40 CFR 58.20, Special Purpose Monitors ("SPMs") do not have to meet the same requirements as SLAMS monitors; instead, 40 CFR § 58.20 requires that SPMs comply with Appendix A. To obtain specific, targeted information and to maintain flexibility, DAQ does not operate SPMs in full compliance with 40 CFR Part 58 Appendix E Sections 2, 3, 4, 5, 6, or 9. Table 3-1 includes a list of current and historic monitoring sites in Clark County.

Each year DAQ is required to submit an annual network plan to EPA. DAQ submitted its 2020 annual network plan to EPA on June 2, 2020 and received approval of the plan on October 28, 2020. DAQ's 2021 Monitoring plan underwent public review until May 6, 2021, and the final plan submitted to EPA will address all comments received on the plan during the public comment period.

The current ozone ambient air monitoring network in Clark County (Table 3-1 and Figure 3-1) consists of nine stations located inside the Las Vegas Valley (Jerome Mack, Paul Meyer, Walter Johnson, Palo Verde, Joe Neal, Mountains Edge, Green Valley, Liberty High School, Walnut) and four (Virgin Valley, Indian Springs, Jean, Garrett High School) located outside the valley. Additionally, the Spring Mountain Youth Camp (EPA Site ID 32-003-7771) is operated as a special purpose monitoring site, and the Las Vegas Paiute monitor (EPA Site ID 32-003-8000) is operated by the Paiute tribe. The Las Vegas Paiute monitor is not part of DAQ's ozone monitoring network; it is considered non-regulatory, and the data cannot be used for NAAQS purposes.

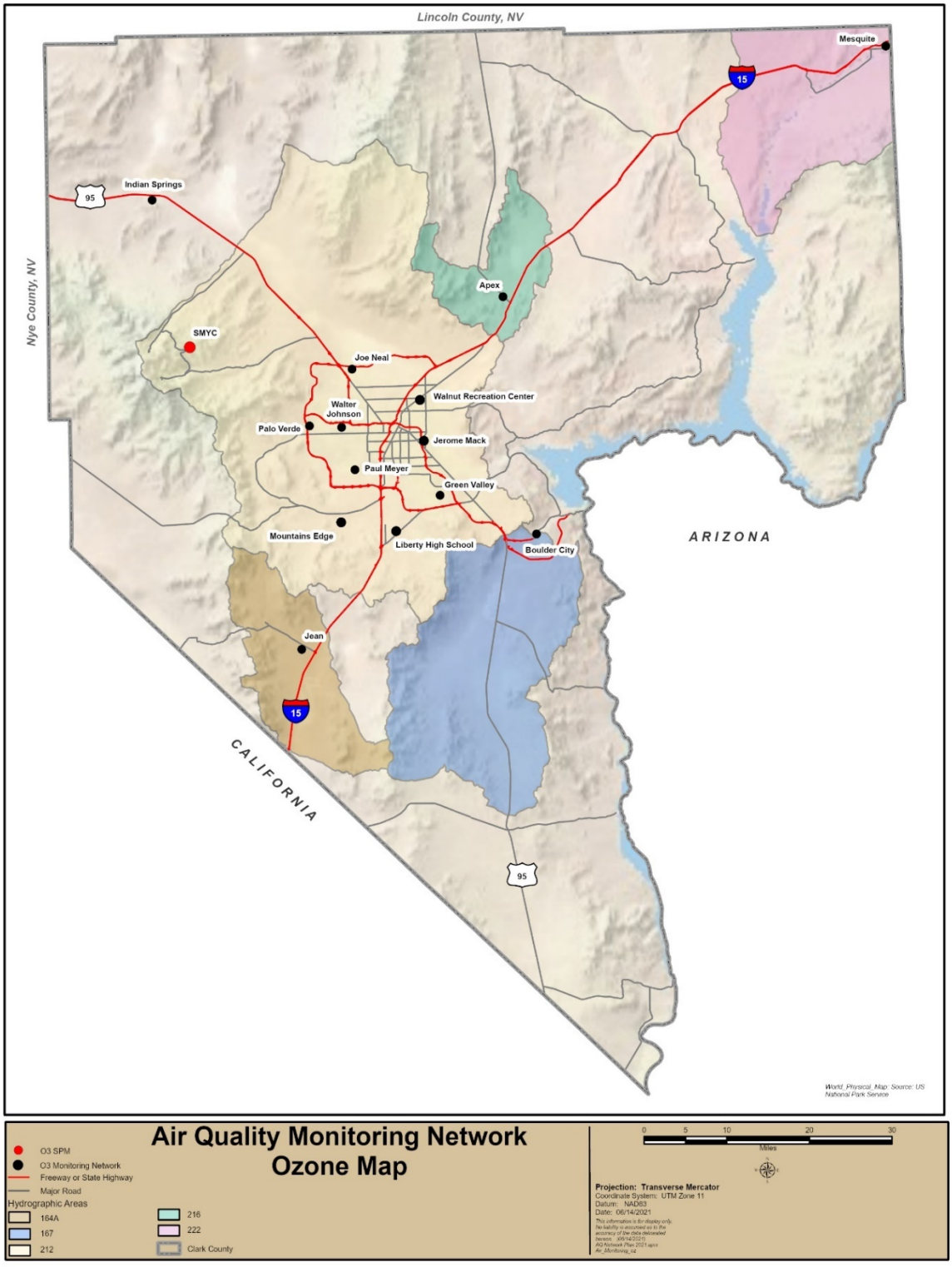
Readers can access more information on a specific monitor at Clark County Region Monitor Summary (https://clarkcountynvairquality.meteostar.com/cgi-bin/monitors.pl) or by reviewing the most recent annual monitoring network plan. As previously highlighted, Tables 2-1 and 2-2 in the previous section show the three-year averages of the fourth-highest ozone concentrations measured at these stations from 2017-2020.

Table 3-1. Clark County Ozone Monitoring Sites

CAMS	EPA Site	Site Description	Street Address	City	Current Status
8000	32-003-8000	Las Vegas Paiute	off Paiute Way	Las Vegas	Active as of Apr. 1, 2015; run by Paiute Tribe
540	32-003-0540	Jerome Mack	4250 Karen Ave	Las Vegas	Active as of Aug. 27, 2010
24	32-003-0024	Virgin Valley	820 Valley View Dr	Mesquite	Active as of Dec. 9 2020, but data not used for Regulatory Purposes
7772	32-003-7772	Indian Springs	668 Gretta Ln	Indian Springs	Active as of May 11, 2020; collecting transport data during ozone season
1019	32-003-1019	Jean	1965 State Hwy 161	Jean	Active as of Jan. 1, 2003
43	32-003-0043	Paul Meyer	4525 New Forest Dr.	Las Vegas	Active as of Jan. 1, 2003
71	32-003-0071	Walter Johnson	7701 Ducharme Dr.	Las Vegas	Active as of Jan. 1, 2003
73	32-003-0073	Palo Verde	126 S. Pavilion Center Dr.	Las Vegas	Active as of Jan. 1, 2003
75	32-003-0075	Joe Neal	6076 Rebecca	Las Vegas	Active as of Jan. 1, 2003
298	32-003-0298	Green Valley	298 North Arroyo Grande	Henderson	Active as of June 4, 2015
44	32-003-0044	Mountains Edge	8101 Mountains Edge Parkway	Las Vegas	Active as of Sept. 29, 2020
602	32-003-0602	Garrett Junior High	1200 Ave G	Boulder City	Active as of March 18, 2021
299	32-003-0299	Liberty High School	3700 Liberty Heights Ave	Henderson	Active as of May 1, 2021
2003	32-003-2003	Walnut	3075 N Walnut Rd	Las Vegas	Active as of May 13, 2021
9995	32-003-9995	Gravimetric Laboratory	4701 West Russell Rd	Las Vegas	Not Yet Active
601	32-003-0601	Boulder City	1005 Industrial Road	Boulder City	Deactivated Mar 12, 2021; replaced by Garrett Junior High Monitor
2002	32-003-2002	J.D. Smith	1301B Tonopah Ave., North Las Vegas 89030	North Las Vegas	Deactivated Jan. 1, 2018
538	32-002-0071	Winterwood	7701 Ducharme Ave., Las Vegas 89145	Las Vegas	Deactivated Oct. 1, 2014
22	32-003-0022	Apex	12101 Hwy 91, Nevada Las Vegas, NV 89165	Apex	Deactivated Oct. 1, 2020
23	32-003-0023	Mesquite	465 East Old Mill Road	Mesquite	Deactivated Oct. 1, 2020
72	32-003-0072	Lone Mountain	3525 N. Valadez St.	Las Vegas	Deactivated April 27, 2010
1021	32-003-1021	Orr	1562 E. Katie Ave. Suite D	Las Vegas	Deactivated Apr. 23, 2010
7780	32-003-7780	Logandale	3570 Lyman Street	Logandale	Deactivated on Oct. 15, 2015, monitor not used for Regulatory Purposes

DAQ stores data from these monitors electronically on a data-logger at each monitoring site. DAQ retrieves this data wirelessly and stores the data electronically on DAQ's servers. After assuring the data meets air quality assurance requirements for ozone (> 75% (average) daily maximum, 75% completeness in a year; ≥ 75% of hours in 8-hour period; at least 18 of 24 running 8-hour averages), DAQ transmits the data to EPA's Air Quality System database. This data is available for public review on EPA's Air Data website at: https://www.epa.gov/outdoor-air-quality-data and DAQ's Air Quality in Clark County website at: Yearly Summary Report By Site (https://clarkcountynvairquality.meteostar.com/cgi-bin/select_year.pl).

DAQ collects and verifies ozone monitoring data under an approved Quality Management Plan (QA Office Document Control Number AIRP0279PV2, Mar. 10, 2017) (DAQ 2017) and Quality Assurance Project Plan (QAPP) for Criteria Pollutant and NCore monitoring (DES 2021), which was last revised and approved on February 16, 2021 in accordance with 40 CFR 58, Appendix A. DAQ also follows EPA's guidance *Quality Assurance Handbook for Air Pollution Measurement Systems, Volume II* (available at: https://www.epa.gov/sites/production/files/2020-10/documents/final_handbook_document_1_17.pdf) (EPA 2017a) Formal quality assessments are an integral part of the DAQ monitoring plan and DAQ follows its QAPP to assure acceptable quality of data is produced from the monitoring network.



* The Boulder City location is the site of the new Garrett High School Station monitor, and the Apex location ceased operating a monitor on October 1, 2020 but a new monitoring location is currently under construction nearby to the Apex location.

Figure 3-1. Clark County Ozone Monitoring Stations

4.0 VERIFICATION OF CONTINUED ATTAINMENT

DAQ will verify continued attainment of the 1997 8-hour ozone maintenance area by continuing to operate an ozone monitoring network in accordance with EPA requirements, and by continued participation in periodic updates of the emissions inventory through the comprehensive triennial national emissions inventory.

EPA regulations require States to collect and submit actual annual emissions for sources on a triennial basis. For ozone, states may submit emissions for NO_x and VOC based on summer day emissions. For large point sources, states must collect and submit this information annually. *See* 40 CFR Part 51, Subpart A. DAQ will prepare complete triennial emissions inventories for 2023, 2026 and 2029 during the second maintenance period. These inventories will provide DAQ with data to compare to the attainment year emissions inventory and monitored data to assess emissions trends and assure continued attainment of the 1997 8-hour ozone NAAQS.

5.0 CONTINGENCY MEASURES PLAN

CAA Section 175A(d) requires that a maintenance plan contain "contingency provisions, as necessary, to promptly correct any violation of the NAAQS that occurs…" (Calcagni 1992). DAQ need not adopt specific measures that will take effect without further action, but instead must identify measures to adopt in the future based on triggering events. Specifically, the contingency plan should include:

1. An explanation of the tracking and triggering mechanisms that will determine when contingency measures may be needed;
2. A description of the process for recommending and implementing contingency measures, with specific timelines for action;
3. A list of potential contingency measures.

The triggering of a response in the contingency measure plan does not automatically require a revision of the Clark County ozone SIP, nor would EPA redesignate Clark County for the 1997 8-hour ozone NAAQS, because EPA has withdrawn those standards. Instead, Clark County will address the increased ambient ozone concentrations by implementing one or more contingency measures, as appropriate. If the maintenance area continues to experience elevated ozone concentrations after implementing the contingency measures, DAQ will adopt additional measures until the design values are reduced below the level of the 1997 8-hour ozone NAAQS.

5.1 TRACKING AND TRIGGERING MECHANISMS

As explained in Section 3.0, DAQ will continue to monitor ozone ambient air concentrations and the emissions inventory to determine whether the maintenance area is at risk of exceeding the 1997 8-hour ozone NAAQS. In addition, the Regional Transportation Commission of Southern Nevada (RTC) serves as another means of tracking mobile source VOC and NO_x emissions. RTC revises its transportation improvement plan every three years and these revisions are subject to a transportation conformity finding; that process will serve as a periodic check on whether emissions are consistent with the VMT and MVEB projections of this second maintenance plan.

5.2 ACTION RESULTING FROM TRIGGER ACTIVATION

Within 45 days of confirming this event, DAQ will notify EPA that an internal review process began to evaluate and adopt contingency measures, if appropriate. Within 90 days of that notification, DAQ will send EPA a draft report outlining recommended actions. DAQ will then solicit stakeholder involvement through public forums (i.e., ozone working groups) to refine the contingency measure list and hold a public hearing(s) to accept comment on the draft contingency measure list. DAQ will finalize the contingency measure list and begin implementation of the necessary measures within 18 months after finalizing the list.

5.3 POTENTIAL CONTINGENCY MEASURES

In addition to the six potential contingency measures outlined below, Clark County may evaluate other strategies to address any future ozone NAAQS violations in the most appropriate and effective manner practicable.

5.3.1 Reid Vapor Pressure Reduction

In conjunction with the Nevada Department of Agriculture, Clark County may consider requiring the reduction of gasoline Reid vapor pressure to below 9.0 psi within the nonattainment area during the summer ozone season.

5.3.2 Inspection/Maintenance Program Changes and Additions

In conjunction with the Nevada Department of Transportation, Clark County may consider changing the cut points for VOCs and NOx applicable to pre-1996 vehicles and/or increase the I/M waiver repair rate in Clark County.

5.3.3 Consumer and Commercial Products

Clark County may consider regulations to restrict the sale, offer for sale, or manufacture for sale of any consumer product, such as personal care products, automotive and industrial maintenance products, and pesticides that contain VOCs above specified limits.

5.3.4 Architectural Surface Coatings

Clark County may consider regulations to restrict the sale, supply, offer for sale, or solicitation of the application of architectural coatings that contain VOCs above specified limits.

5.3.5 Lawn and Garden Equipment Use

Clark County may consider regulations to restrict the use of gasoline-powered lawn mowers on announced ozone action days in the Clark County nonattainment area.

5.3.6 Establish/Enhance Trip Reduction Programs

In conjunction with the RTC, Clark County may establish and/or enhance employer-based community outreach and marketing efforts, employer rideshare program incentives, preferential parking for carpoolers and vanpoolers, emergency rides home for Club Ride members, travel assistance information on the Internet, and a public kiosks, transit passes to subsidize employees' transit expenses, and partnerships with vanpool leasing companies.

6.0 CONFORMITY

Conformity is required by CAA Section 176(c). EPA's transportation and general conformity rules apply to nonattainment and maintenance areas operating under maintenance plans. Under either rule, one means of demonstrating conformity of federal actions is to show that expected emissions from planned actions are consistent with the emissions budget for the area. This section contains transportation and general conformity provisions applicable in maintenance areas.

6.1 TRANSPORTATION CONFORMITY

The transportation conformity process ensures transportation plans, programs, and projects in maintenance areas do not create new violations of the NAAQS, do not increase the frequency or severity of NAAQS violations, and do not delay timely attainment of the NAAQS. It does not allow federal agencies to engage in, support, or provide financial assistance for licensing, permitting, or approving any project unless the project conforms to the SIP.

6.1.1 Motor Vehicle Emissions Budgets

Under CAA Section 176(c), transportation plans, programs, and projects in maintenance areas that are funded or approved under Title 23 of the U.S. Code or the Federal Transit Act must conform to the on-road MVEBs specified in the applicable SIP. In this case, 40 CFR § 93.118 provides the criteria and procedures for MVEBs.

The MVEB establishes a cap on motor vehicle-related emissions that cannot be exceeded by predicted transportation system emissions. The emissions budget applies as a ceiling on emissions in the year for which it is defined, and for all subsequent years until a different budget is defined for another year or a SIP revision modifies the budget. Unless the SIP clearly indicates otherwise, the estimate of future transportation network emissions used in the milestone or attainment demonstration acts as the MVEB.

In 2018, DAQ submitted a revision to the MVEB for 2008, 2015, and 2022 for use in conducting future transportation conformity determinations (DAQ 2018). The budgets in the updated MVEB consisted of the updated on-road emissions estimates for 2008, 2015 and 2022 with an added safety margin. DAQ determined the safety margin by adding 80% of the difference between the attainment year inventory and projected emissions to the total projected on road mobile emissions for 2015 and 2022. EPA conditionally approved this MVEB in 2019. The conditional approval required DAQ to submit another revision to the MVEB to lower the safety margin allocation. In DAQ's commitment letter, DAQ indicated it would reduce the safety margin to approximately 3 tpd, which equaled about 50% of the difference between the 2015 and 2022 total emissions projections in the 2018 MVEB (Bechtel 2019). Table 6-1 shows the currently approved MVEB.

Table 6-1. Conditionally-Approved State Implementation Plan Motor Vehicle Emissions Budget (tpd)

	2008	2015	2022
VOC	42.46	53.94	52.96
NO_x	89.5	90.92	86.74

In 2020, DAQ submitted a revised MVEB based on using 2017 as an interim year and projecting 2022 emissions. Consistent with the commitment letter, DAQ added 50% of the difference in the years' total emissions projections as a safety margin. DAQ used the most current EPA-approved motor vehicle emissions model at that time (MOVES2014a) and the most current planning variables (*e.g.*, vehicle miles traveled projections and populations forecasts) which resulted in a slight increase in the on-road mobile sector emissions compared to the 2018 MVEB update. With the reduced safety margin allocation, however, the submitted MVEB was smaller than the 2018 conditionally-approved budget. Table 6-2 shows the proposed MVEB in the 2020 submission.

Table 6-2. 2020 Motor Vehicle Emission Budget (tpd) Submission for 2022

NO_x	VOC
32.16	23.92

This second maintenance plan further revises the VOC and NO_x on-road mobile sector using the latest EPA modeling tool – MOVES3. The revised modeling projected lower on-road mobile emissions for both VOC and NO_x compared to the 2020 MVEB submission. Tables 6-3 and 6-4 display the new projected on-road emissions budget with 50% of the difference in total emissions projections for the years added as a safety margin.

Table 6-3. VOC MVEB Second Maintenance Plan (tpd)

Parameter	2017	2023	2033
Projected VOC Emissions (tpd)	26.27	17.85	11.50
Safety Margin Adjustment (tpd)		3.07	4.01
MVEB VOC (tpd)	26.27	20.92	15.51

Table 6-4. NO_x MVEB Second Maintenance Plan (tpd)

Parameter	2017	2023	2033
Projected Emissions (tpd)	42.20	22.22	11.13
Safety Margin Adjustment (tpd)		4.55	12.22
MVEB NO_x (tpd)	42.20	26.77	23.35

Once approved by EPA, these MVEB will be used in future transportation conformity analyses.

6.2 GENERAL CONFORMITY

The general conformity process ensures that actions taken by federal agencies do not interfere with a state's plans to meet the NAAQS. General conformity determinations are required whenever there is a federal action, other than transportation related, within a nonattainment or maintenance area that will increase emissions above a de minimis level. A federal agency must demonstrate that actions it undertakes or supports will conform to the applicable SIP. Federal rules require that federal agencies use the emissions inventory from an approved SIP to support a conformity determination. One method for demonstrating that an action conforms to the SIP is specifically identifying and accounting for the anticipated emissions from the proposed action in the attainment or maintenance demonstration.

The airport emissions in the attainment demonstration (Section 2.4.2) include all estimated NO_x and VOC emissions for the proposed Southern Nevada Supplemental Airport (SNSA) and proposed Air Force Training Project. These emissions may be used to support a general conformity determination in accordance with 40 CFR 93.158. Details on these projects and associated emissions are provided below.

6.2.1 Southern Nevada Supplemental Airport

On May 20, 2020, Clark County through NDEP submitted a letter committing to include all operational NO_x and VOC emissions from the proposed SNSA in its second 10-year maintenance plan. These emissions are included in the airport emissions estimates for 2033. Table 6-5 shows the estimated operational NO_x and VOC emissions from the proposed SNSA.

Table 6-5. SNSA Proposed Emissions (tpd)

SNSA	2033
NO_x	4.68
VOC	0.35

6.2.2 Proposed Air Force Training Project

The Department of Air Force (DAF) is proposing to provide dedicated Contracted Close Air Support (CCAS) training for students at NAFB. The DAF proposed action involves flight and ground support operations at the North Las Vegas Airport and Jean Sport Aviation Center, and the aircraft would engage in training exercises in Special Use Airspace outside of Clark County. The proposed action is tentatively scheduled to begin on January 1, 2022, and end on December 31, 2031 (10 years). Details on the project and the methodology for estimating emissions are provided in Appendix A. Table 6.6 shows the estimated NO_x and VOC emissions from the project.

Table 6-6. DAF Proposed Emissions (tpd)

DAF Training Project	Total Annual (ton/year)	Summer Weekday (tpd)	2023 (tpd)	2033 (tpd)
NO_x	127.741	0.49	0.49	0.49
VOC	20.192	0.08	0.08	0.08

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