NORTHERN NEVADA

Public Health

Air Quality

2015-24 Washoe County, Nevada Air Quality Trends Report

June 26, 2025

NORTHERN NEVADA

Public Health

Serving Reno, Sparks & Washoe County

MISSION

The AQMD is dedicated to the protection of air quality and the safeguard of public health for all of Washoe County through the development and implementation of effective programs and regulations while supporting economic growth, community partnerships, and environmental justice.

Table of Contents

Appendices

Tables

Figures

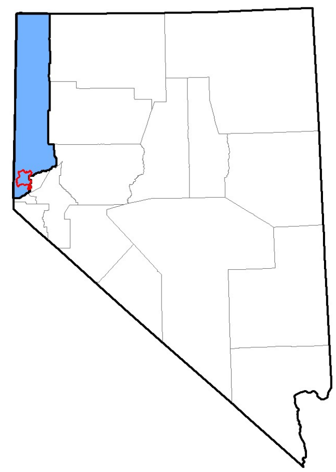
Acronyms and Abbreviations

AQI	Air Quality Index
AQMD	Northern Nevada Public Health - Air Quality Management Division
AQS	Air Quality System
BAM	Beta Attenuation Monitor
CFR	Code of Federal Regulations
CBSA	Core-Based Statistical Area
CO	Carbon Monoxide
EPA	U.S. Environmental Protection Agency
GAL	Galletti
HA 87	Hydrographic Area 87
HC	Hydrocarbons
HNO_2	Nitrous Acid
HNO_3	Nitric Acid
INC	Incline
LEM	Lemmon Valley
$\mu g/m^3$	Micrograms per cubic meter
NAAQS	National Ambient Air Quality Standards
NCore	National Core Multi-Pollutant Monitoring Station
NO_2	Nitrogen Dioxide
NOx	Oxides of Nitrogen
NO_y	Reactive Oxides of Nitrogen
O_3	Ozone
PLM	Plumb-Kit
PM	Particulate Matter
$PM_{2.5}$	Particulate Matter less than or equal to 2.5 microns in aerodynamic diameter
PM_{10}	Particulate Matter less than or equal to 10 microns in aerodynamic diameter
$PM_{10-2.5}$	PM_{10} minus $PM_{2.5}$
ppb	Parts per billion
ppm	Parts per million
REN	Reno4
RNO	Reno3
SIP	State Implementation Plan
SLAMS	State and Local Air Monitoring Station
SO_2	Sulfur Dioxide
SO_3	Sulfur Trioxide
SOx	Oxides of Sulfur
SPK	Sparks
SPM	Special Purpose Monitoring
SPS	Spanish Springs
SRN	South Reno
STN	Speciation Trends Network
TOL	Toll
USG	Unhealthy for Sensitive Groups
VOC	Volatile Organic Compounds

Introduction

Washoe County is in the northwest portion of Nevada and bounded by California, Oregon, and the Nevada counties of Humboldt, Pershing, Storey, Churchill, Lyon, and Carson City (Figure 1). The Truckee Meadows is approximately 200 square miles in size and situated in the southern portion of Washoe County. It is geographically identified as Hydrographic Area 87 (HA 87) as defined by the State of Nevada Division of Water Resources. Most of Washoe County's urban population lives in the Truckee Meadows. Anthropogenic activities, such as automobile use and residential wood combustion, are also concentrated here.

Figure 1
Washoe County, Nevada



The U.S. Environmental Protection Agency (EPA) has set health and welfare based National Ambient Air Quality Standards (NAAQS) for the following pollutants: ozone (O_3), particulate matter less than or equal to 2.5 microns in aerodynamic diameter ($PM_{2.5}$), particulate matter less than or equal to 10 microns in aerodynamic diameter (PM_{10}), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead (Pb).

The mission of the Northern Nevada Public Health, Air Quality Management Division (AQMD) Monitoring Program is "To monitor and assure the scientific accuracy of the ambient air quality data collected for the determination of compliance with the National Ambient Air Quality Standards (NAAQS) as defined by the EPA". The AQMD has established a monitoring network throughout Washoe County to collect ambient air data. The network is reviewed annually to ensure it reflects the actual air quality of the county and that it is measuring for the pollutants of highest concern.

This document summarizes the ambient air data collected between 2015 and 2024 from the AQMD's monitoring network. These data were submitted to the EPA's Air Quality System (AQS) and are available for public review on EPA's AirData website. Long-term monitoring data can reveal trends in ambient air pollution and the subsequent need for control strategies.

Pollutants

The following describes the six NAAQS criteria pollutants, their primary sources, and associated health effects.

Ozone (O_3)

Ozone is a gas composed of three oxygen atoms. It is not usually emitted directly into the air, but, at ground-level, it is created by a chemical reaction between oxides of nitrogen (NOx) and volatile organic compounds (VOC) in the presence of sunlight. Ozone has the same chemical structure whether it occurs miles above the earth or at ground-level and can be "good" or "bad", depending on its location in the atmosphere. "Good" O_3 occurs naturally in the stratosphere approximately 10 to 30 miles above the earth and forms a layer that protects life on earth from the sun's harmful rays.

In the lower atmosphere, ground-level O_3 is considered "bad". Breathing ground-level O_3 can trigger a variety of health problems including chest pain, coughing, throat irritation, and congestion. It can worsen bronchitis, emphysema, and asthma. Ground-level O_3 can also reduce lung function and inflame the linings of the lungs. Repeated exposure may permanently scar lung tissue. People with lung disease, children, older adults, and physically active people may be affected when O_3 levels are unhealthy. Numerous scientific studies have linked ground-level O_3 exposure to a variety of problems including airway irritation, coughing, and pain when taking a deep breath; wheezing and breathing difficulties during exercise or outdoor activities; inflammation, which is much like a sunburn on the skin; aggravation of asthma and increased susceptibility to respiratory illnesses like pneumonia and bronchitis; and permanent lung damage with repeated exposures.

Motor vehicle exhaust, industrial emissions, gasoline vapors, chemical solvents, and natural sources emit NOx and VOC that help form O_3. Ground-level O_3 is the primary constituent of smog. Sunlight and hot weather cause ground-level O_3 to form in harmful concentrations. As a result, it is known as a summertime air pollutant. Many urban areas tend to have high levels of "bad" O_3, but even rural areas are also subject to increased O_3 levels because wind carries O_3 and pollutants that form it hundreds of miles away from their original sources.

Particulate Matter (PM_{10}, $PM_{2.5}$, and $PM_{10-2.5}$)

Particulate matter, also known as particle pollution or PM, is a complex mixture of extremely small particles and liquid droplets. Particle pollution is made up of several components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles.

The size of particles is directly linked to their potential for causing health problems. Of concern are particles that are 10 micrometers in diameter or smaller because those are the particles that generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. EPA groups particle pollution into two categories:

- "Inhalable coarse particles" (PM_{10} and $PM_{10-2.5}$), such as those found near roadways and dusty industries, are between 2.5 and 10 micrometers in diameter.
- "Fine particles" ($PM_{2.5}$), such as those found in smoke and haze, are 2.5 micrometers in diameter and smaller. These particles can be directly emitted from sources such as forest fires, or they can form when gases emitted from power plants, industries, and automobiles react in the air.

Particle pollution, especially fine particles, contains microscopic solids or liquid droplets that are so small that they can get deep into the lungs and cause serious health problems. Numerous scientific studies have linked particle pollution exposure to a variety of problems, including irritation of the airways, coughing, difficulty breathing, decreased lung function, aggravated asthma, development of chronic bronchitis, irregular heartbeat, nonfatal heart attacks, and premature death in people with heart or lung disease.

People with heart or lung diseases, children and older adults are the most likely to be affected by particle pollution exposure. However, even healthy people may experience temporary symptoms from exposure to elevated levels of particle pollution.

Carbon Monoxide (CO)

Carbon monoxide is a colorless, odorless gas that is formed when carbon in fuel is not burned completely. It is a byproduct of incomplete combustion found in exhaust of on-road vehicles, non-road engines and vehicles (such as construction equipment and boats) and in industrial processes, residential wood burning, and natural sources such as wildfires. Higher concentrations generally occur in areas with heavy traffic congestion. Typically, the highest ambient levels of CO typically occur during the colder months of the year when temperature inversions are more frequent. The air pollution becomes trapped near the ground beneath a layer of warm air.

Carbon monoxide can cause harmful health effects by reducing oxygen delivery to the body's organs (i.e., heart and brain) and tissues. The health threat from lower levels of CO is most serious for those who suffer from heart disease, like angina, clogged arteries, or congestive heart failure. For a person with heart disease, a single exposure to low levels of CO may cause chest pain and a reduced ability to exercise. Repeated exposure may contribute to other cardiovascular effects. Even healthy people can be affected by high levels of CO. Exposure to high levels can result in vision problems, reduced ability to work or learn, reduced manual dexterity, and difficulty performing complex tasks. At extremely high levels, CO is poisonous and can cause death.

Nitrogen Dioxide (NO_2)

Nitrogen dioxide is one of a group of highly reactive gasses known as "oxides of nitrogen", or "nitrogen oxides (NOx)". Other nitrogen oxides include nitrous acid (HNO_2) and nitric acid (HNO_3). While EPA's NAAQS covers this entire group of NOx, NO_2 is the component of greatest interest and the indicator for the larger group of NOx. NO_2 forms quickly from emissions from cars, trucks and buses, power plants, and off-road equipment. In addition to contributing to the formation of ground-level O_3 and fine particle pollution, NO_2 is linked with several adverse effects on the respiratory system.

Current scientific evidence links short-term NO_2 exposures, ranging from 30 minutes to 24 hours, with adverse respiratory effects including airway inflammation in healthy people and increased respiratory symptoms in people with asthma. Also, studies show a connection between breathing elevated short-term NO_2 concentrations and increased visits to emergency rooms and hospital admissions for respiratory issues, especially asthma.

NO_2 concentrations in vehicles and near roadways are appreciably higher than those measured at monitors in the current network. In fact, in-vehicle concentrations can be 2 to 3 times higher than measured at nearby area-wide monitors. Near-roadway (within about 50 meters) concentrations of NO_2 have been measured to be approximately 30 to 100% higher than concentrations away from roadways.

Individuals who spend time on or near major roadways can experience short-term NO_2 exposures considerably higher than measured by the current network. Approximately 16% of US housing units (approximately 48 million people) are located within 300 feet of a major highway, railroad, or airport. NO_2 exposure concentrations near roadways are of particular concern for susceptible individuals, including people with asthma, children, and the elderly.

NOx reacts with ammonia, moisture, and other compounds to form small particles. These small particles penetrate deeply into sensitive parts of the lungs and can cause or worsen respiratory disease, such as emphysema and bronchitis, and can aggravate existing heart disease, leading to increased hospital admissions and premature death. Ozone is formed when NOx and VOC react in the presence of heat and sunlight. Children, the elderly, people with lung diseases such as asthma, and people who work or exercise outdoors are at risk for adverse effects from O_3. These include reduction in lung function and increased respiratory symptoms as well as respiratory-related emergency room visits, hospital admissions, and possibly premature deaths.

Emissions that lead to the formation of NO_2 generally also lead to the formation of other NOx. Emissions control measures leading to reductions in NO_2 can generally be expected to reduce population exposures to all gaseous NOx. This may have the important co-benefit of reducing the formation of O_3 and fine particles, both of which pose significant public health threats.

Sulfur Dioxide (SO_2)

Sulfur dioxide is one of a group of highly reactive gases known as "oxides of sulfur". The largest sources of SO_2 emissions are from fossil fuel combustion at power plants (66%) and other industrial facilities (29%). Smaller sources of SO_2 emissions include industrial processes such as extracting metal from ore, and the burning of high sulfur-containing fuels by locomotives, large ships, and non-road equipment. SO_2 is linked with a number of adverse effects on the respiratory system.

Current scientific evidence links short-term exposures to SO_2, ranging from 5 minutes to 24 hours, with an array of adverse respiratory effects including bronchoconstriction and increased asthma symptoms. These effects are particularly important for asthmatics at elevated ventilation rates (i.e., while exercising or playing). Studies also show a connection between short-term exposure and increased visits to emergency rooms and hospital admissions for respiratory illnesses, particularly in at-risk populations including children, the elderly, and asthmatics.

EPA's SO_2 NAAQS is designed to protect against exposure to the entire group of sulfur oxides (SOx). SO_2 is the component of greatest concern and is used as the indicator for the larger group of SOx. Other gaseous sulfur oxides (i.e., sulfur trioxide (SO_3)) are found in the atmosphere at concentrations much lower than SO_2.

Emissions leading to high concentrations of SO_2 generally also lead to the formation of other SOx. Control measures that reduce SO_2 can generally be expected to reduce people's exposures to all gaseous SOx. This may have the important co-benefit of reducing the formation of fine sulfate particles, which pose significant public health threats.

SOx can react with other compounds in the atmosphere to form small particles. These particles penetrate deeply into sensitive parts of the lungs and can cause or worsen respiratory disease, such as emphysema and bronchitis, and can aggravate existing heart disease, leading to increased hospital admissions and premature death. EPA's PM NAAQS are designed to provide protection against these health effects.

Lead (Pb)

Lead is a metal found naturally in the environment as well as in manufactured products. The major sources of Pb emissions have historically been motor vehicles (such as cars and trucks) and industrial sources. As a result of EPA's efforts to remove Pb from gasoline, ambient Pb levels decreased 99% between 1980 and 2017. Today, elevated levels of Pb in air are usually found near lead smelters, waste incinerators, utilities, lead-acid battery manufacturers, and can be found in emissions of non-road mobile sources such as piston-propelled aircraft.

In addition to exposure to Pb in air, other major exposure pathways include ingestion of Pb in drinking water and lead-contaminated food as well as incidental ingestion of lead-contaminated soil and dust. Lead-based paint remains a major exposure pathway in older homes.

Once taken into the body, Pb distributes throughout the body in the blood and is accumulated in the bones. Depending on the level of exposure, Pb can adversely affect the nervous system, kidney function, immune system, reproductive and developmental systems, and the cardiovascular system. Lead exposure also affects the oxygen carrying capacity of the blood. The effects most encountered in current populations are neurological effects in children and cardiovascular effects (i.e., high blood pressure and heart disease) in adults. Infants and young children are especially sensitive to even low levels of Pb, which may contribute to behavioral problems, learning deficits, and lowered IQ.

National Ambient Air Quality Standards

The Clean Air Act requires the EPA to establish NAAQS for pollutants considered harmful to public health and the environment. Two types of NAAQS have been established: primary and secondary standards. Primary standards set limits to protect public health, especially that of sensitive populations such as asthmatics, children, and seniors. Secondary standards set limits to protect public welfare, including protections against decreased visibility, damage to animals, crops, and buildings.

The EPA has set NAAQS for seven principal pollutants, which are called "criteria" pollutants. They are listed in Title 40 of the Code of Federal Regulations (CFR) Part 50 and summarized in Table 1 below. The units of measure for the standards are parts per million (ppm), part per billion (ppb), or micrograms per cubic meter of air ($\mu g/m^3$).

Table 1
National Ambient Air Quality Standards (as of December 31, 2024)

Pollutant	Primary Standard		Secondary Standard		Form
	Averaging Time	Level	Averaging Time	Level	
O_3	8-hour	0.070 ppm	Same as primary		Fourth highest daily maximum concentration, averaged over 3 years
$PM_{2.5}$	24-hour	35 $\mu g/m^3$	Same as primary		98th percentile of daily max, averaged over 3 years
	Annual[1]	9.0 $\mu g/m^3$	Annual	15.0 $\mu g/m^3$	Annual mean, averaged over 3 years
PM_{10}	24-hour	150 $\mu g/m^3$	Same as primary		Not to be exceeded more than once per year on average over 3 years
CO	1-hour	35 ppm	None		Not to be exceeded more than once per year
	8-hour	9 ppm	None		
NO_2	1-hour	100 ppb	None		98th percentile, averaged over 3 years
	Annual	53 ppb	Same as primary		Annual Mean
SO_2	1-hour	75 ppb	Annual[2]	10 ppb	1°: 99th percentile of daily maximum concentration, averaged over 3 years
					2°: Averaged over 3 years
Pb	Rolling 3-month average	0.15 $\mu g/m^3$	Same as primary		Not to be exceeded

[1] $PM_{2.5}$ Annual NAAQS Revised to 9.0 $\mu g/m^3$ from 12.0 $\mu g/m^3$ effective May 6, 2024.
https://www.govinfo.gov/content/pkg/FR-2024-03-06/pdf/2024-02637.pdf

[2] Secondary SO_2 NAAQS level and form revised to 10 ppb effective December 27, 2024.
https://www.govinfo.gov/content/pkg/FR-2024-12-27/pdf/2024-29463.pdf

Current Design Values and Attainment Status

Table 2 summarizes Washoe County's current design values. Design values are the statistic used to compare ambient air monitoring data against the NAAQS to determine designations for each NAAQS. Designations are also codified in **40 CFR 81.329**.

Table 2
Design Values and Attainment Status (as of December 31, 2024)

NAAQS		Design Value	Designations	
Pollutant (Averaging Time)	Level		Unclassifiable/ Attainment, or Maintenance	Nonattainment (classification)
O_3 (8-hour)	0.070 ppm	0.066 ppm	All HA's	---
$PM_{2.5}$ (24-hour)	35 µg/m^3	34 µg/m^3	All HA's	---
$PM_{2.5}$ (Annual)	9.0 µg/m^3	7.9 µg/m^3	All HA's	---
PM_{10} (24-hour)	150 µg/m^3	1.3 Expected Exceedances	All HA's[1]	---
CO (1-hour)	35 ppm	1.7 ppm	All HA's	---
CO (8-hour)	9 ppm	1.2 ppm	All HA's[2]	---
NO_2 (1-hour)	100 ppb	47 ppb	All HA's	---
NO_2 (Annual Mean)	53 ppb	10 ppb	All HA's	---
SO_2 (1-hour)	75 ppb	3 ppb	All HA's	---
Pb (Rolling 3-month average)	0.15 µg/m^3	n/a	All HA's	---

[1] Maintenance Area for PM_{10} (1st 10-year maintenance plan expires January 6, 2026) **80 FR 76232**
[2] Maintenance Area for CO (2nd 10 year maintenance plan expires October 31, 2026) **81 FR 59490**

Ambient Air Monitoring Network

The AQMD began monitoring ambient air quality in Washoe County in the 1960's, and the monitoring network has grown and evolved since that time. This trends report provides a summary of data collected from ambient air monitoring sites in Washoe County that the AQMD operated and maintained between 2015 and 2024 to measure O_3, $PM_{2.5}$, PM_{10}, CO, NO_2, and SO_2. Due to not exceeding airport and non-airport emissions limits in 40 CFR 58, Appendix D, Section 4.5(a), there is no Pb monitoring in Washoe County.

Each monitoring site is classified into one of two major categories, SLAMS (State and Local Air Monitoring Station) and SPM (Special Purpose Monitoring). SLAMS consist of a network of monitoring stations, the size and distribution of which is largely determined by the monitoring requirements for NAAQS comparison. SLAMS in the AQMD's network can be further classified as NCore (National Core monitoring network) or STN (Speciation Trends Network).

The AQMD's monitoring stations are sited in accordance with 40 CFR 58 and utilize equipment designated as reference or equivalent methods.[1] In addition, the network is reviewed annually[2] to ensure it meets the monitoring objectives defined in 40 CFR 58, Appendix D. Ambient air monitoring data are collected, quality assured[3], and recorded in AQS. Appendix A of this document provides a detailed summary of the ambient air monitoring data for 2024. All data summarized in Appendix A has been provided by reports retrieved from AQS. The data provided by AQS reports were certified on April 29, 2025. Figure 2 displays the ambient air monitoring sites operated between 2015 and 2024. For specific details regarding the ambient air monitoring network, refer to the AQMD's "2024 Ambient Air Monitoring Network Plan" and "2020 Ambient Air Monitoring Network Assessment".

[1] 40 CFR 53
[2] 40 CFR 58.10
[3] 40 CFR 58

Figure 2
Washoe County Ambient Air Monitoring Sites (2015-2024)

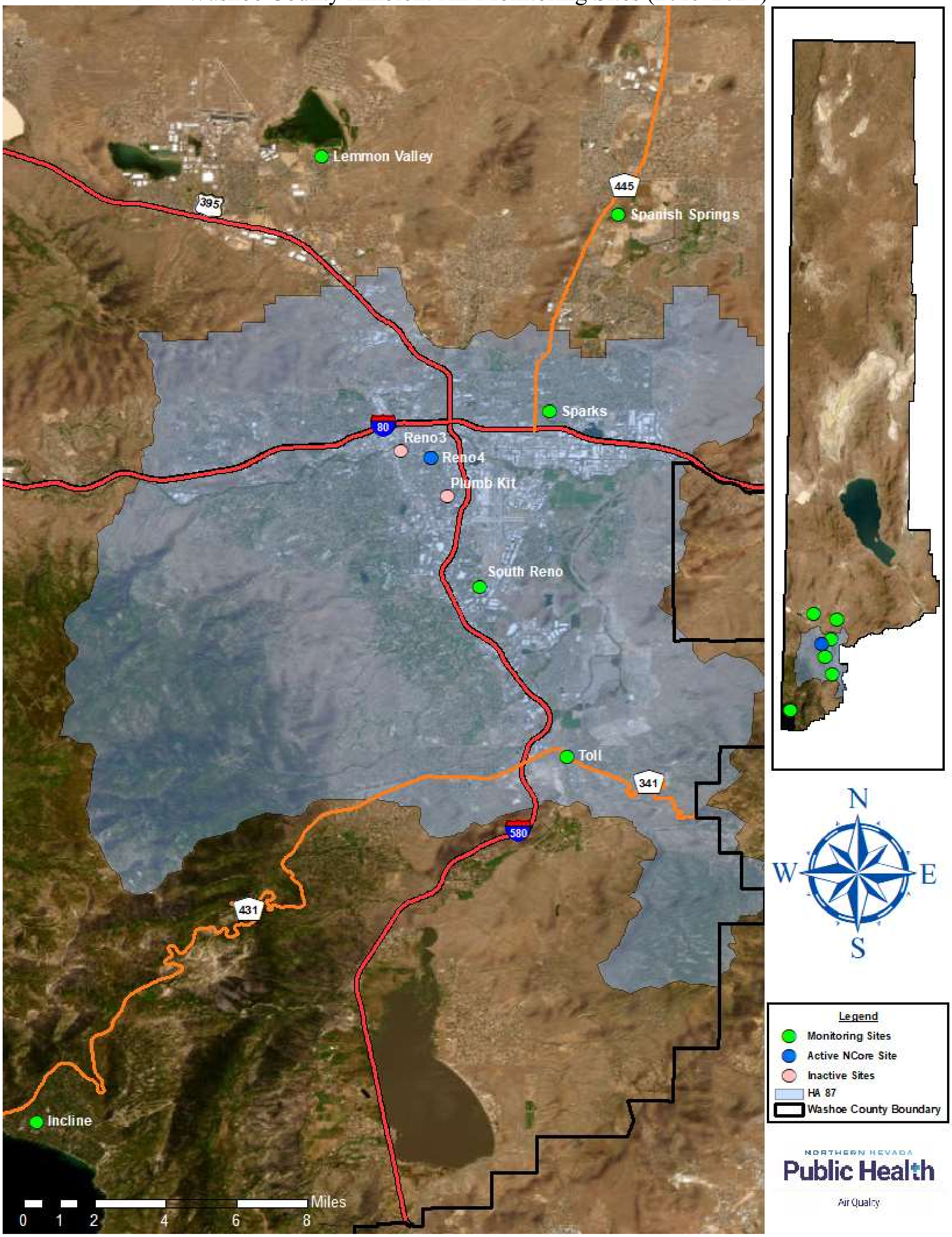


Table 3
Monitoring Stations in Operation and Pollutants Monitored in 2024

Network Type Site	O_3	CO	Trace CO	Trace NO	NO_2	NOx	Trace NOy	Trace SO_2	PM_{10} (manual)	PM_{10} (continuous)	$PM_{2.5}$ (manual)	$PM_{2.5}$ (continuous)	$PM_{10-2.5}$ (manual)	$PM_{10-2.5}$ (continuous)	$PM_{2.5}$ Speciation	Meteorology
SLAMS																
Incline	✓															
Lemmon Valley	✓															
South Reno	✓															✓
Spanish Springs	✓									✓		✓		✓		✓
Sparks	✓									✓		✓		✓		✓
Toll	✓									✓		✓		✓		✓
NCore																
Reno4	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
Speciation Trends																
Reno4															✓	

Monitoring Stations in Operation and Pollutants Monitored Prior to 2024

Ambient air monitoring data have been collected in Washoe County since 1963. A complete historical list of monitoring stations and pollutants monitored is included in Appendix B.

A Review of 2024

January and February of 2024 began with the issuance of a Yellow Burn Code on January 1st for January 2nd. The Yellow Burn Code was rescinded on the 2nd and Green Burn Codes remained through the end of the 2023-2024 Burn Code season. The 2023-2024 Burn Code season ended with 118 Green, 3 Yellow, and 0 Red Burn Codes. The highest 24-hour $PM_{2.5}$ concentration for the 2023-2024 season was recorded on January 1, 2024 at the Sparks SLAMS with a value of 23.5 $\mu g/m^3$.

The first air quality event of the year occurred in June. The Reno-Sparks area experienced an overnight ozone exceedance on June 15. The Lemmon Valley SLAMS recorded an 8-hour ozone concentration between 8 PM and 3 AM of 72 ppb. It is not normal that ozone peaks occur overnight. Likely, the exceedance occurred due to a phenomenon called stratospheric ozone intrusion. This is when "good" ozone from the upper atmosphere mixes to the ground-level, increasing ambient concentrations of ground-level ozone.

Fire impacts were minimal during the summer of 2024. At the end of July into early August, the area saw the greatest $PM_{2.5}$ and smoke impact of the year. Widespread smoke from the Park Fire in Northern California blanketed the Reno-Sparks area. This led to a 24-hour $PM_{2.5}$ AQI of 81 or 25.1 $\mu g/m^3$ at the Reno4 NCore site, the highest 24-hour $PM_{2.5}$ concentration of 2024. In total, the Park Fire burned over 429,000 acres and destroyed over 700 structures.

On August 8th and through that weekend, the area experienced smoke from the Crozier Fire near Placerville, CA. The Crozier Fire burned nearly 2,000 acres. It caused Moderate $PM_{2.5}$ AQI during its impact to the Reno-Sparks area.

The last major wildfire impact of the year came from the Davis Fire in South Reno. The Davis Fire started on September 7 and was fully contained on September 25. The fire burned a total of 5,824 acres.

Due to high winds in the area during the fire, $PM_{2.5}$ impacts were limited to adjacent areas to the fire. The fire destroyed two commercial structures, 14 residences, and 22 outbuildings in total.[1] Fire crews were diligent and worked effectively to limit impacts from the fire.

Figure 3: Davis Fire on September 8, 2024, Inciweb

The 2024-2025 Burn Code Season began with Green Burn Codes until a Yellow Burn Code was issued on November 8th. The Yellow Burn Code was issued due to the Waddle Ranch prescribed fire by Truckee airport. The fire led to periodic Unhealthy AQIs but was a 24-hour Moderate AQI. One other Yellow Burn Code was issued in 2024 on December 19.

[1] https://inciweb.wildfire.gov/incident-information/nvhtf-davis-fire, USFS November 5, 2024, Accessed May 5, 2025

Table 4 summarizes NAAQS exceedances in 2024 by pollutant, averaging period, and dates.

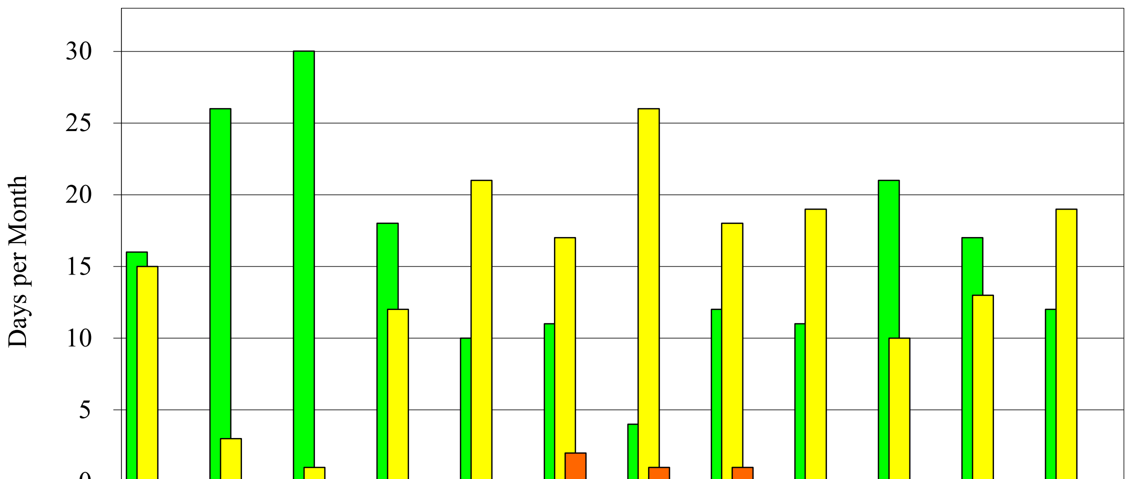
Table 4
2024 NAAQS Exceedances Summary

Pollutant	Averaging Period	Exceedance Dates
O_3	8-hour	Jun: 14, 23 Jul: 11 Aug: 1
$PM_{2.5}$	24-hour	None
PM_{10}	24-hour	None
CO	1-hour	None
	8-hour	None
NO_2	1-hour	None
SO_2	1-hour	None
	3-hour	None
Pb	Rolling 3-month	Not required to monitor as Washoe County does not have any lead sources as described in 40 CFR 58, Appendix D, 4.5(a).

2024 Air Quality Index Summaries

The Air Quality Index (AQI) is an index for reporting daily air quality that has been established by the EPA. It informs the public how clean or polluted the air is, and what associated health effects might be a concern. The AQI is reported to the public via EnviroFlash, AirNow.gov, and the AQMD's air quality hotline ((775) 785-4110). EnviroFlash and the hotline are updated daily, and more often during air pollution episodes. AirNow.gov is updated hourly. The next six figures are pollutant-specific and summarize Washoe County's air quality for the previous year by pollutant, month, and AQI categories. The highest NAAQS average pollutant throughout our network is the AQI for that day. Months with less AQIs than days for CO, NO_2 , and SO_2 are due to not meeting data completeness requirements for the AQI averaging time due to invalid data.

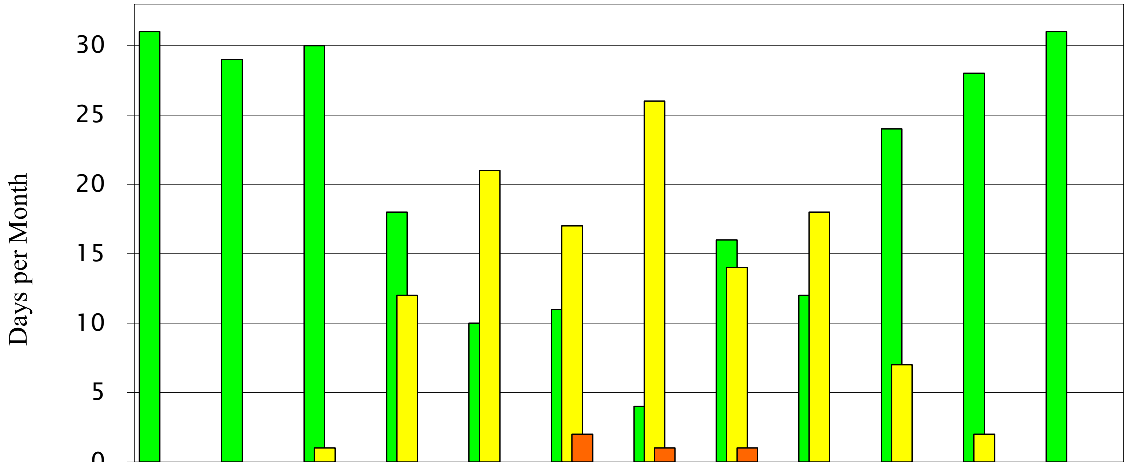
Figure 4
Monthly AQI Summary for All Pollutants (2024)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Good	16	26	30	18	10	11	4	12	11	21	17	12
Moderate	15	3	1	12	21	17	26	18	19	10	13	19
USG	-	-	-	-	-	2	1	1	-	-	-	-
Unhealthy	-	-	-	-	-	-	-	-	-	-	-	-
Very Unhealthy	-	-	-	-	-	-	-	-	-	-	-	-
Hazardous	-	-	-	-	-	-	-	-	-	-	-	-

Figure 5

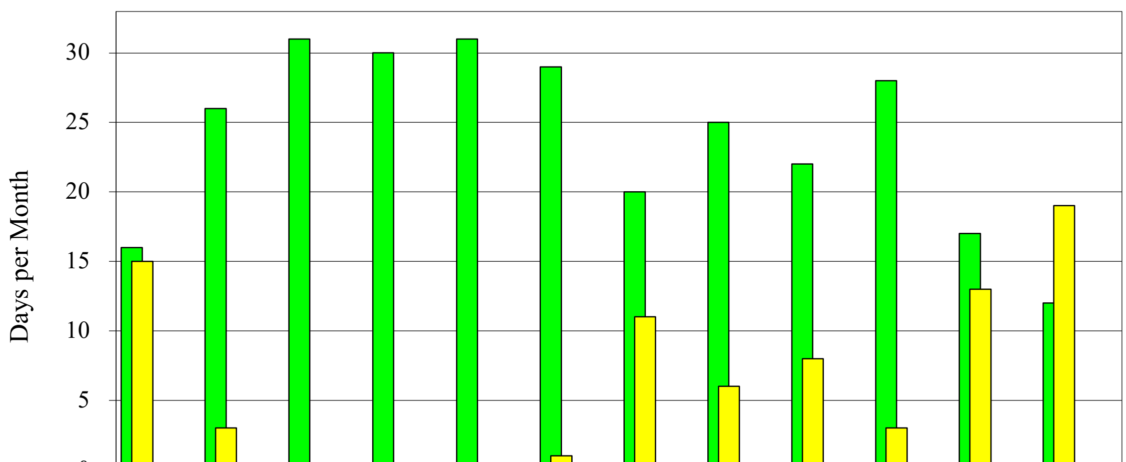
Monthly AQI Summary of O_3 (2024)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Good	31	29	30	18	10	11	4	16	12	24	28	31
Moderate	-	-	1	12	21	17	26	14	18	7	2	-
USG	-	-	-	-	-	2	1	1	-	-	-	-
Unhealthy	-	-	-	-	-	-	-	-	-	-	-	-
Very Unhealthy	-	-	-	-	-	-	-	-	-	-	-	-
Hazardous	-	-	-	-	-	-	-	-	-	-	-	-

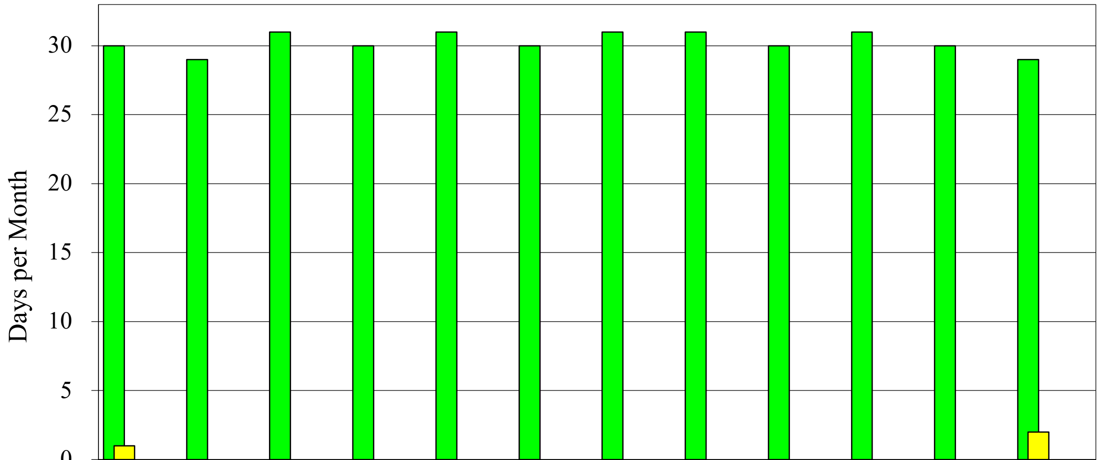
Figure 6

Monthly AQI Summary of $PM_{2.5}$ (2024)



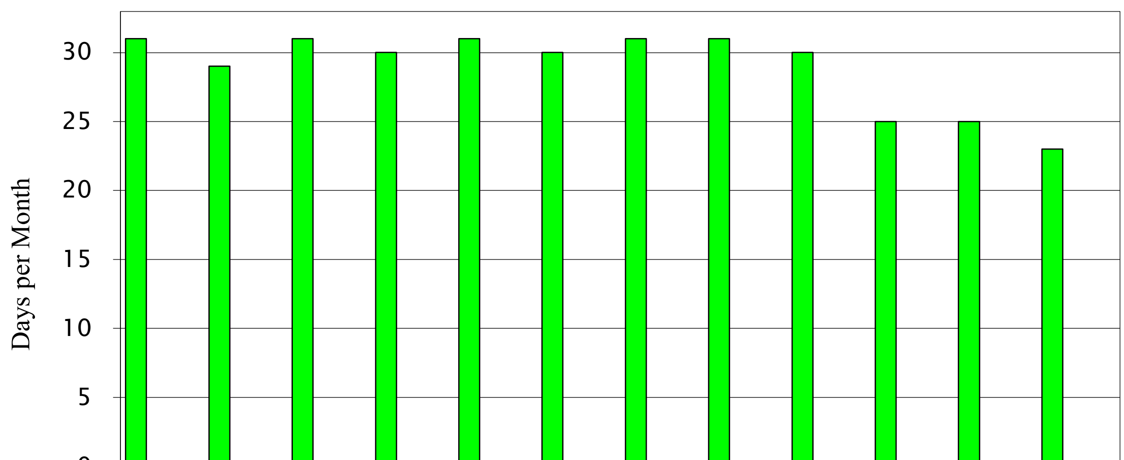
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Good	16	26	31	30	31	29	20	25	22	28	17	12
Moderate	15	3	-	-	-	1	11	6	8	3	13	19
USG	-	-	-	-	-	-	-	-	-	-	-	-
Unhealthy	-	-	-	-	-	-	-	-	-	-	-	-
Very Unhealthy	-	-	-	-	-	-	-	-	-	-	-	-
Hazardous	-	-	-	-	-	-	-	-	-	-	-	-

Figure 7
Monthly AQI Summary of PM_{10} (2024)



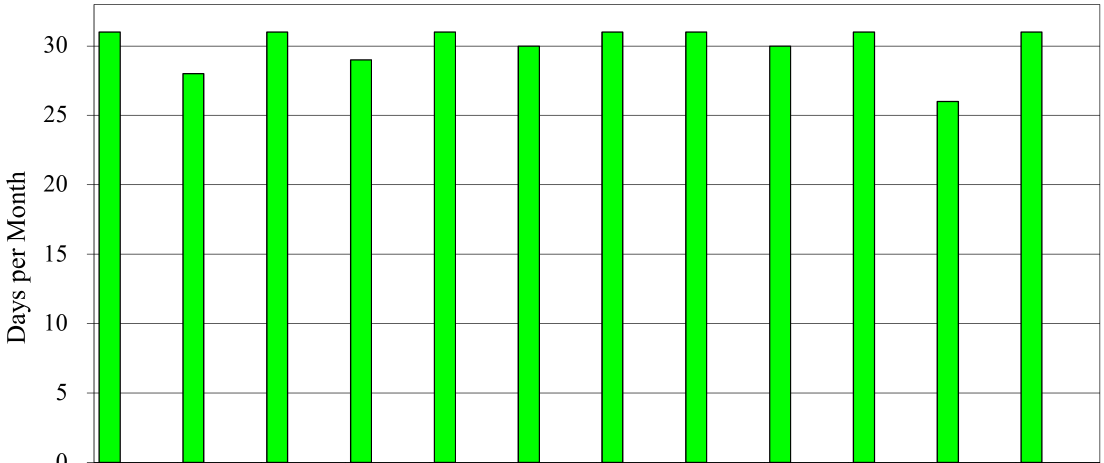
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Good	30	29	31	30	31	30	31	31	30	31	30	29
Moderate	1	-	-	-	-	-	-	-	-	-	-	2
USG	-	-	-	-	-	-	-	-	-	-	-	-
Unhealthy	-	-	-	-	-	-	-	-	-	-	-	-
Very Unhealthy	-	-	-	-	-	-	-	-	-	-	-	-
Hazardous	-	-	-	-	-	-	-	-	-	-	-	-

Figure 8
Monthly AQI Summary of CO (2024)



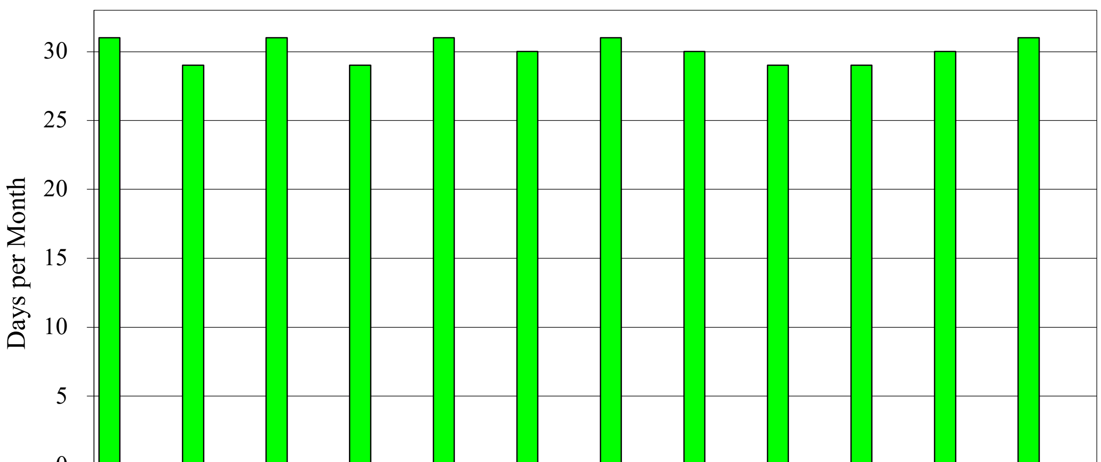
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Good	31	29	31	30	31	30	31	31	30	25	25	23
Moderate	-	-	-	-	-	-	-	-	-	-	-	-
USG	-	-	-	-	-	-	-	-	-	-	-	-
Unhealthy	-	-	-	-	-	-	-	-	-	-	-	-
Very Unhealthy	-	-	-	-	-	-	-	-	-	-	-	-
Hazardous	-	-	-	-	-	-	-	-	-	-	-	-

Figure 9
Monthly AQI Summary of NO_2 (2024)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Good	31	28	31	29	31	30	31	31	30	31	26	31
Moderate	-	-	-	-	-	-	-	-	-	-	-	-
USG	-	-	-	-	-	-	-	-	-	-	-	-
Unhealthy	-	-	-	-	-	-	-	-	-	-	-	-
Very Unhealthy	-	-	-	-	-	-	-	-	-	-	-	-
Hazardous	-	-	-	-	-	-	-	-	-	-	-	-

Figure 10
Monthly AQI Summary of SO_2 (2024)



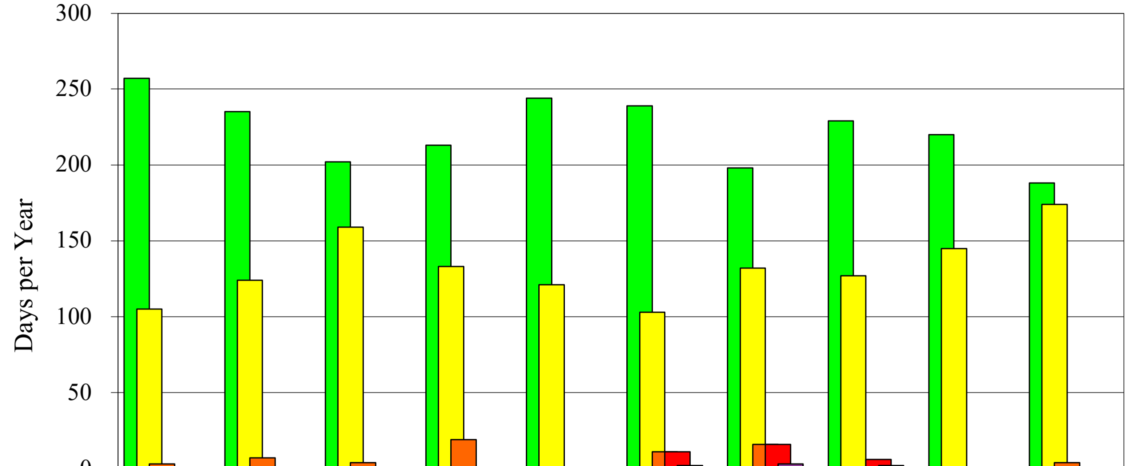
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Good	31	29	31	29	31	30	31	30	29	29	30	31
Moderate	-	-	-	-	-	-	-	-	-	-	-	-
USG	-	-	-	-	-	-	-	-	-	-	-	-
Unhealthy	-	-	-	-	-	-	-	-	-	-	-	-
Very Unhealthy	-	-	-	-	-	-	-	-	-	-	-	-
Hazardous	-	-	-	-	-	-	-	-	-	-	-	-

Ten-Year Air Quality Trend

Air Quality Index

Figure 12 summarizes the ten-year trend in AQI between 2015 and 2024. NAAQS revisions in 2015 and 2024 resulted in changes to AQI category ranges and the number of days per year within those ranges.

Figure 11
AQI Trend (2015-2024)



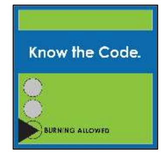
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Good	257	235	202	213	244	239	198	229	220	188
Moderate	105	124	159	133	121	103	132	127	145	174
USG*	3	7	4	19	-	11	16	1	-	4
Unhealthy	-	-	-	-	-	11	16	6	-	-
Very Unhealthy	-	-	-	-	-	2	3	2	-	-
Hazardous	-	-	-	-	-	-	-	-	-	-

* Unhealthy for Sensitive Groups

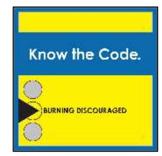
Notes
2015: 8-hour O_3 NAAQS strengthened from 0.075 to 0.070 ppm.
2024: Annual $PM_{2.5}$ NAAQS strengthened from 12.0 µg/m^3 to 9.0 µg/m^3.

Burn Code Season

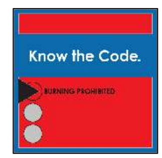
The Burn Code program has been in place since 1987. It begins November 1 and ends on the last day of February. During this wintertime period, the burn code curtails PM_{10}, $PM_{2.5}$, and CO emissions from residential and commercial solid fuel burning devices such as wood stoves, pellet stoves, fireplaces, and residential open burning.



Green: Issued when $PM_{2.5}$ levels are low and are not expected to be approaching the 24-hour $PM_{2.5}$ NAAQS. It is legal for residents and businesses to use their solid fuel burning device.

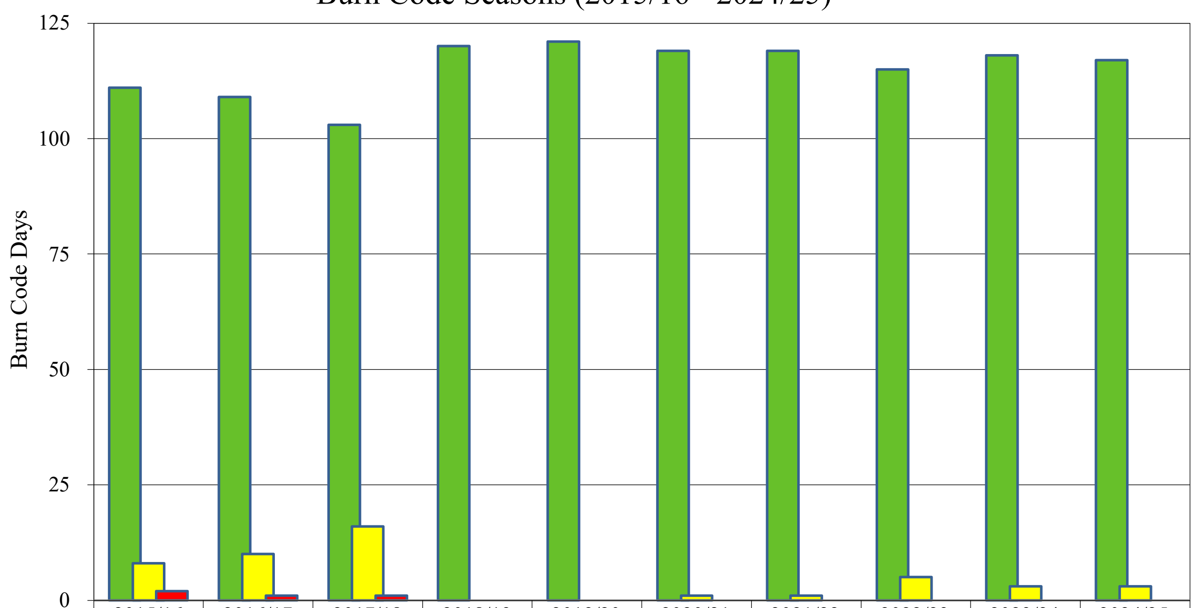


Yellow: Issued when $PM_{2.5}$ levels are approaching the 24-hour $PM_{2.5}$ NAAQS. It is legal for residents and businesses to use their solid fuel burning device, but it is encouraged to reduce or stop burning.



Red: Issued when $PM_{2.5}$ levels are above or expected to be above the $PM_{2.5}$ NAAQS. Under an Emergency Episode Stage 1, it is illegal for residents to use their solid fuel burning device, except residents that have a sole source exemption, and for residents to conduct open burning. Under an Emergency Episode Stage 2, it is illegal for the previously mentioned activities and for businesses to burn solid fuel.

Figure 12
Burn Code Seasons (2015/16 - 2024/25)



	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Green	111	109	103	120	121	119	119	115	118	117
Yellow	8	10	16	-	-	1	1	5	3	3
Red	2	1	1	-	-	-	-	-	-	-

Design Values

The following section contains data that the AQMD has flagged as "exceptional" due to events such as wildfires and high winds. The design values will include these "exceptional" data until EPA determines concurrence with AQMD's exceptional events demonstrations. All informationally flagged days in 2024 can be found in Appendix C.

Ozone exceptional events for the Reno3 monitoring station in 2015 and 2016 were concurred by EPA Region 9 on May 30, 2017.[1]

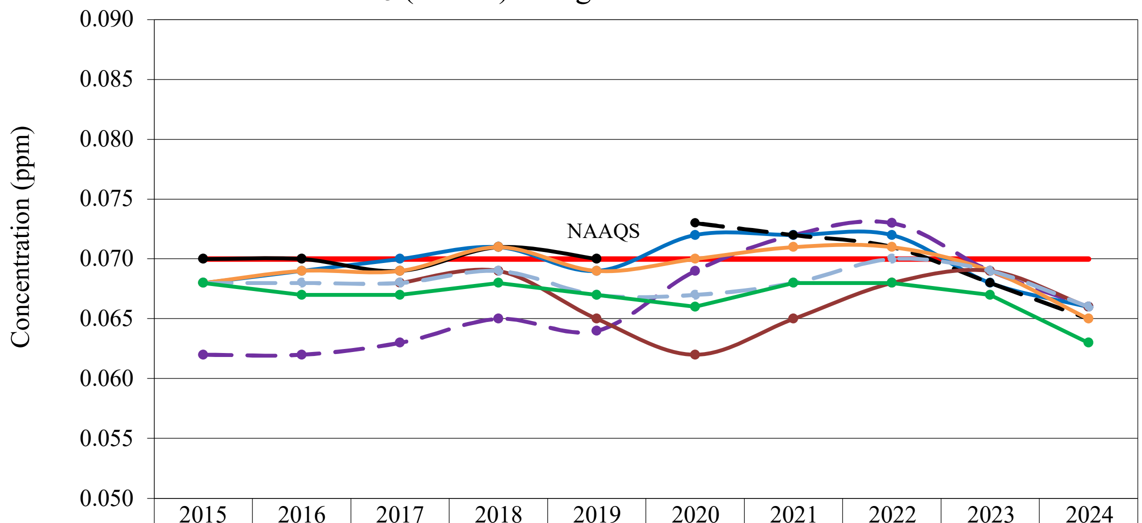
[1] "Exceptional Events Document Ozone - Washoe, NV." (www.epa.gov/air-quality-analysis/exceptional-events-documents-ozone-washoe-nv), EPA.gov. United States Environmental Protection Agency, 9 June 2017. Web. 02 May 2025

O_3 (8-hour) Design Values

NAAQS Level: 0.070 ppm
Design Value (2022-2024): 0.066 ppm (INC, LEM, SPS, SRN)
Current Designation: Attainment/Unclassifiable (Entire County)

2024 Exceedances: 4
2024 First High: 0.076 ppm (Aug 1 – REN)
2024 Fourth High: 0.070 ppm (Jul 11 – LEM)

Figure 13
O_3 (8-hour) Design Values



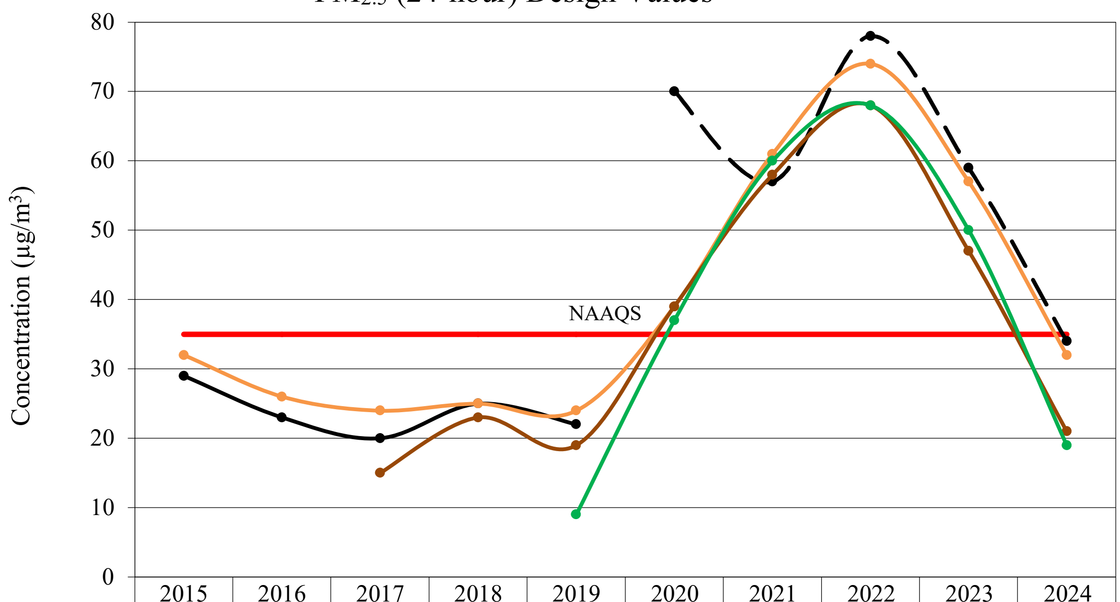
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
NAAQS	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
INC (2002)	0.062	0.062	0.063	0.065	0.064	0.069	0.072	0.073	0.069	0.066
LEM (2009)	0.068	0.069	0.070	0.071	0.069	0.072	0.072	0.072	0.068	0.066
RNO (0016)	0.070	0.070	0.069	0.071	0.070					
REN (0031)						0.073	0.072	0.071	0.068	0.065
SPK (1005)	0.068	0.069	0.069	0.071	0.069	0.070	0.071	0.071	0.069	0.065
SPS (1007)			0.068	0.069	0.065	0.062	0.065	0.068	0.069	0.066
SRN (0020)	0.068	0.068	0.068	0.069	0.067	0.067	0.068	0.070	0.069	0.066
TOL (0025)	0.068	0.067	0.067	0.068	0.067	0.066	0.068	0.068	0.067	0.063

PM2.5 (24-hour) Design Values

NAAQS Level: 35 µg/m^3
Design Value (2022-24): 34 µg/m^3 (REN)
Current Designation: Attainment/Unclassifiable (Entire County)

2024 Exceedances: 0
2024 First High: 25.1 µg/m^3 (Jul 31 - REN)
2024 98th Percentile: 19.2 µg/m^3 (Jan 8 - SPK)

Figure 14
PM$_{2.5}$ (24-hour) Design Values



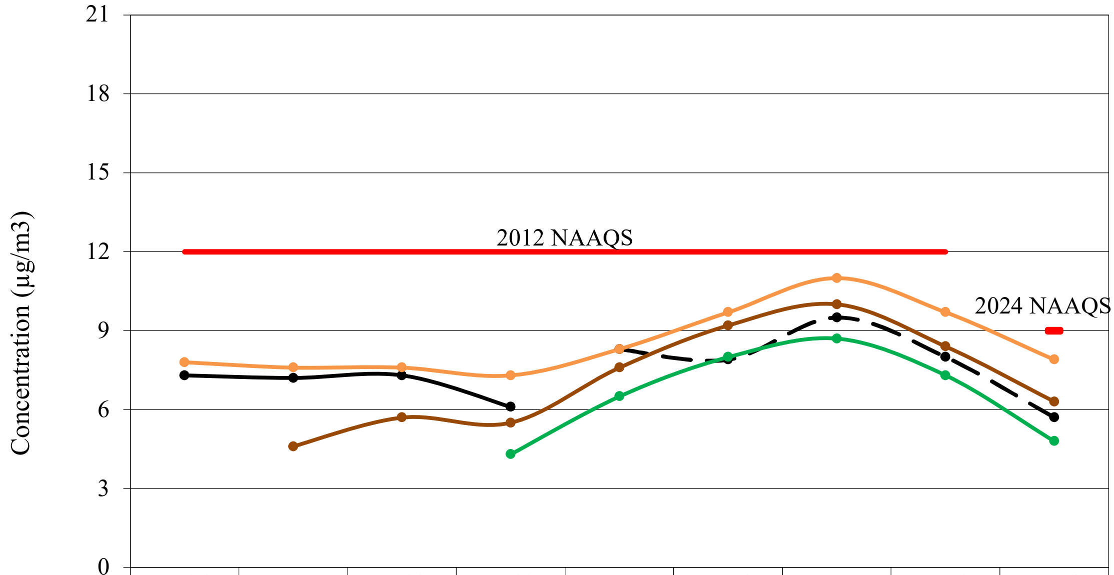
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
NAAQS	35	35	35	35	35	35	35	35	35	35
RNO (0016)	29	23	20	25	22					
REN (0031)						70	57	78	59	34
SPK (1005)	32	26	24	25	24	39	61	74	57	32
SPS (1007)			15	23	19	39	58	68	47	21
TOL (0025)					9	37	60	68	50	19

$PM_{2.5}$ (Annual) Design Values

<u>NAAQS Level</u>: 9.0 µg/m^3
<u>Design Value (2022-24)</u>: 7.9 µg/m^3 (SPK)
<u>Current Designation</u>: Attainment/Unclassifiable (Entire County)

<u>2024 Annual Weighted Mean</u>: 6.6 µg/m^3 (SPK)

Figure 15
$PM_{2.5}$ (Annual) Design Values



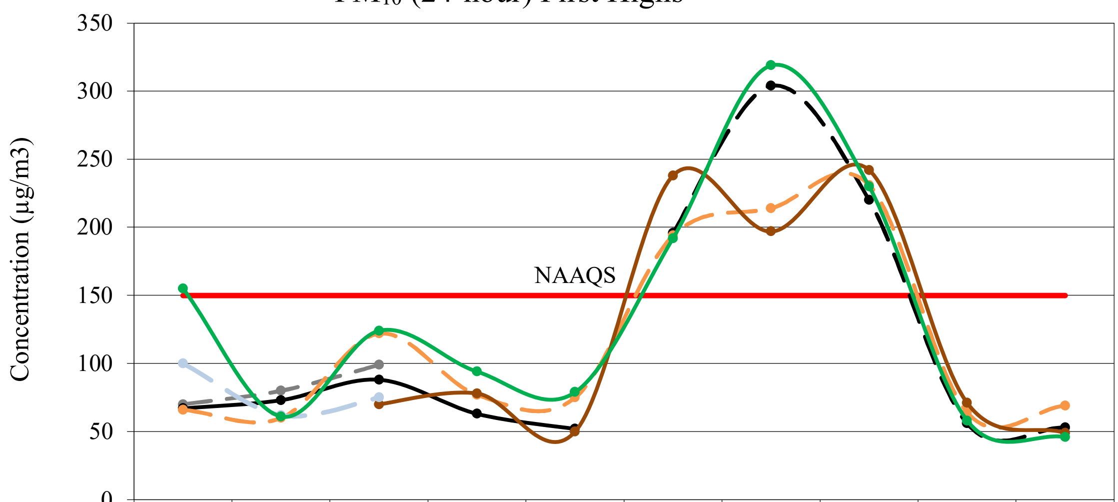
	2016	2017	2018	2019	2020	2021	2022	2023	2024
NAAQS	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	9.0
RNO (0016)	7.3	7.2	7.3	6.1					
REN (0031)					8.3	7.9	9.5	8.0	5.7
SPK (1005)	7.8	7.6	7.6	7.3	8.3	9.7	11.0	9.7	7.9
SPS (1007)		4.6	5.7	5.5	7.6	9.2	10.0	8.4	6.3
TOL (0025)				4.3	6.5	8.0	8.7	7.3	4.8

PM_{10} (24-hour) First Highs

NAAQS Level: 150 µg/m^3
Design Value (2022-24): 1.3 expected exceedances (TOL)
Current Designation: Attainment (HA 87); Attainment/Unclassifiable (Remainder of County)

2024 Exceedances: 0
2024 Expected Exceedances: 0
2024 First High: 69 µg/m^3 (Dec 19 - SPK)

Figure 16
PM_{10} (24-hour) First Highs



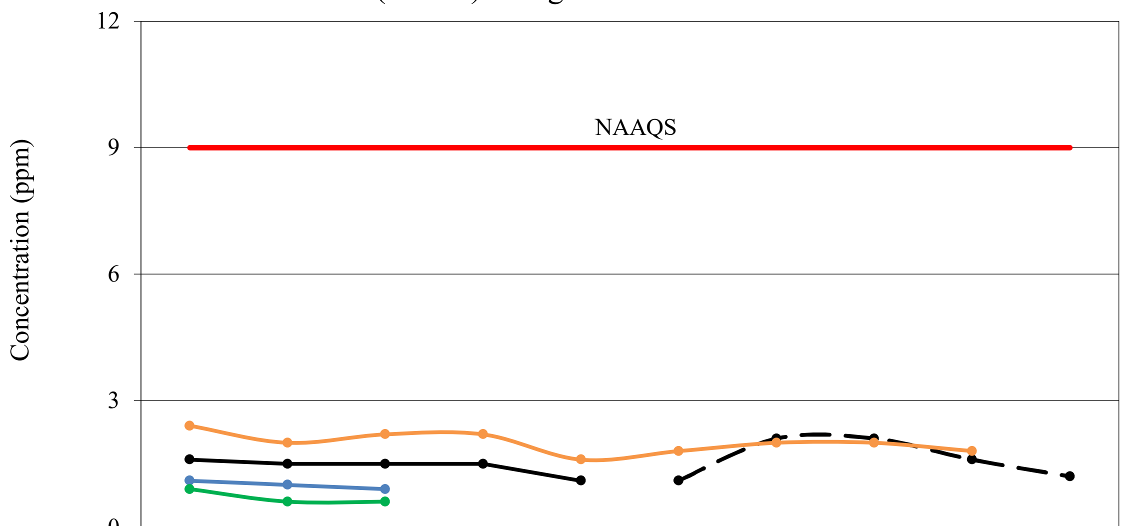
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
NAAQS	150	150	150	150	150	150	150	150	150	150
PLM (0030)	70	80	99							
RNO (0016)	67	73	88	63	52					
REN (0031)						196	304	220	56	53
SPK (1005)	66	60	122	77	75	194	214	231	64	69
SPS (1007)			70	78	50	238	197	242	71	49
SRN (0020)	100	62	75							
TOL (0025)	155	61	124	94	79	192	319	230	58	46

CO (8-hour) Design Values

NAAQS Level: 9 ppm
Design Value (2023-24): 1.2 ppm (REN)
Current Designation: Attainment (HA 87); Attainment/Unclassifiable (Remainder of County)

2023 Exceedances: 0
2024 First High: 1.0 ppm (Jan 2 - REN)
2024 Second High: 1.0 ppm (Jan 5 – REN)

Figure 17
CO (8-hour) Design Values



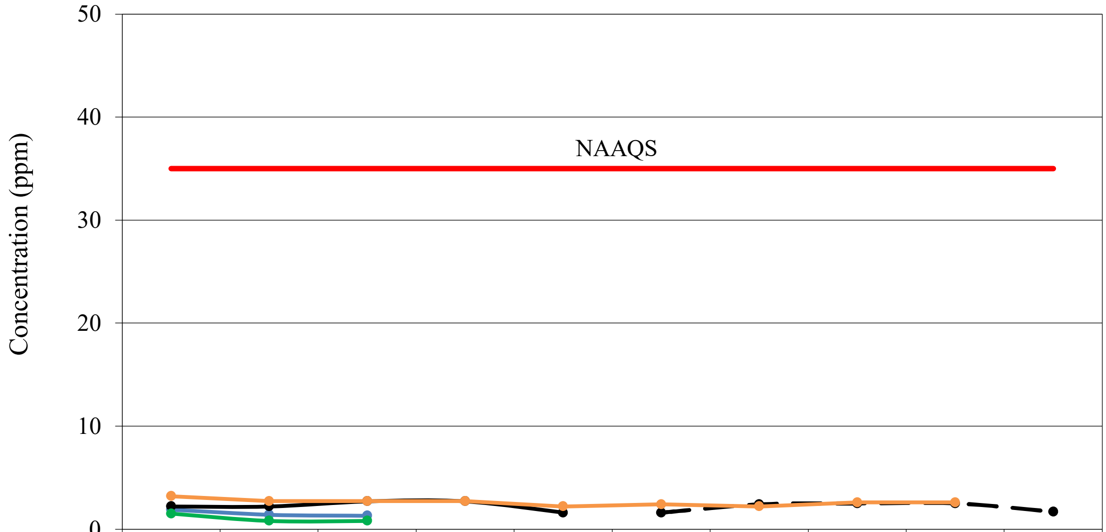
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
NAAQS	9	9	9	9	9	9	9	9	9	9
LEM (2009)	1.1	1.0	0.9							
RNO (0016)	1.6	1.5	1.5	1.5	1.1					
REN (0031)						1.1	2.1	2.1	1.6	1.2
SPK (1005)	2.4	2.0	2.2	2.2	1.6	1.8	2.0	2.0	1.8	
TOL (0025)	0.9	0.6	0.6							

CO (1-hour) Design Values

NAAQS Level: 35 ppm
Design Value (2023-24): 1.7 ppm (REN)
Current Designation: Attainment/Unclassifiable (Entire County)

2024 Exceedances: 0
2024 First High: 1.8 ppm (Dec 18 - REN)
2024 Second High: 1.7 ppm (Dec 20 - REN)

Figure 18
CO (1-hour) Design Values



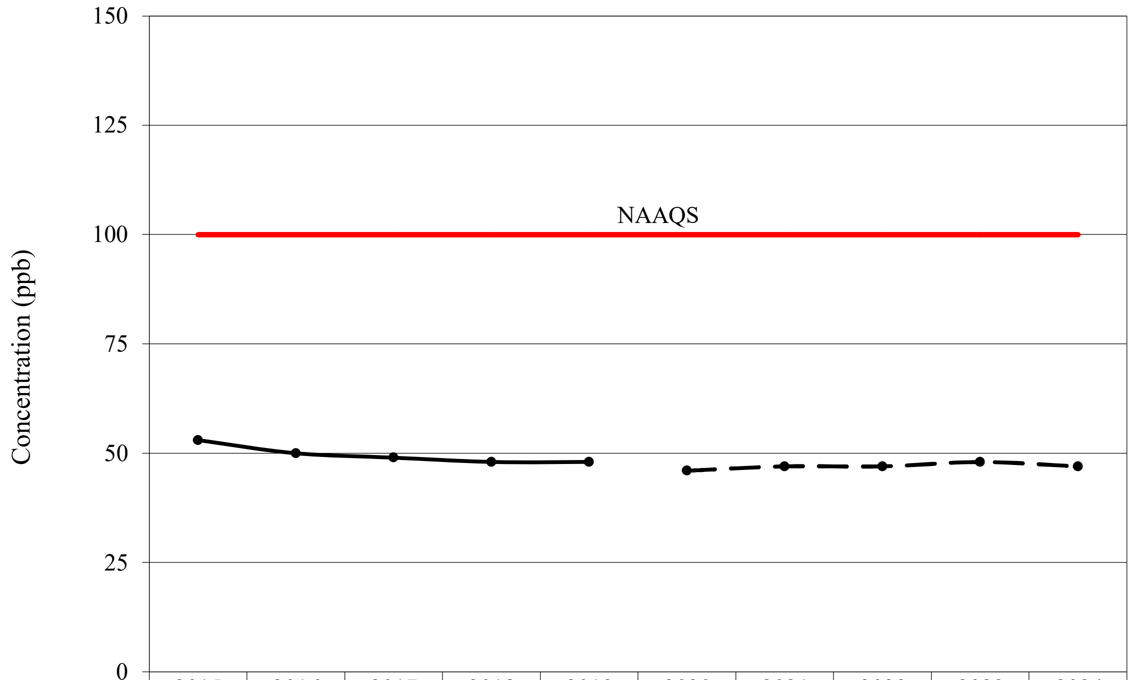
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
NAAQS	35	35	35	35	35	35	35	35	35	35
LEM (2009)	1.9	1.4	1.3							
RNO (0016)	2.2	2.2	2.7	2.7	1.6					
REN (0031)						1.6	2.4	2.5	2.5	1.7
SPK (1005)	3.2	2.7	2.7	2.7	2.2	2.4	2.2	2.6	2.6	
TOL (0025)	1.5	0.8	0.8							

NO_2 (1-hour) Design Values

NAAQS Level: 100 ppb
Design Value (2022-24): 47 ppb (REN)
Current Designation: Attainment/Unclassifiable (Entire County)

2024 Exceedances: 0
2024 First High: 50.1 ppb (Jan 11 - REN)
2024 98th Percentile: 44.0 ppb (Feb 2 - REN)

Figure 19
NO_2 (1-hour) Design Values



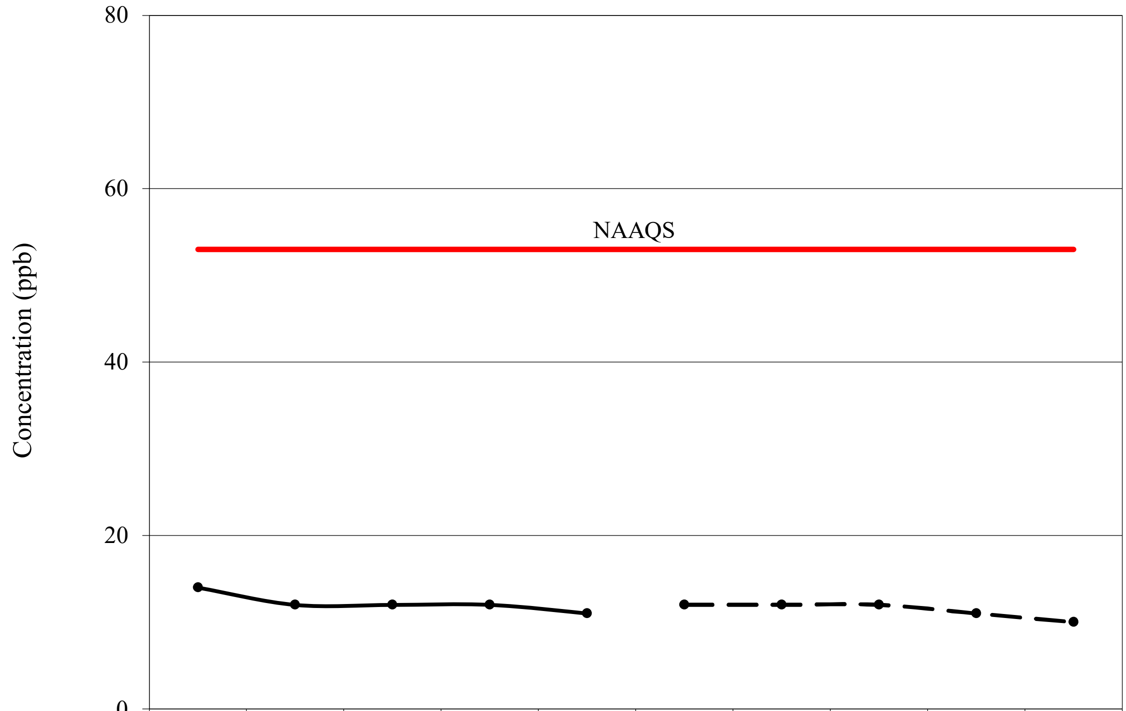
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
NAAQS	100	100	100	100	100	100	100	100	100	100
RNO (0016)	53	50	49	48	48					
REN (0031)						46	47	47	48	47

NO_2 (Annual) Design Values

NAAQS Level: 53 ppb
Design Value (2024): 10 ppb (REN)
Current Designation: Attainment/Unclassifiable (Entire County)

2024 Annual Mean: 9.9 ppb (REN)

Figure 20
NO_2 (Annual) Design Values



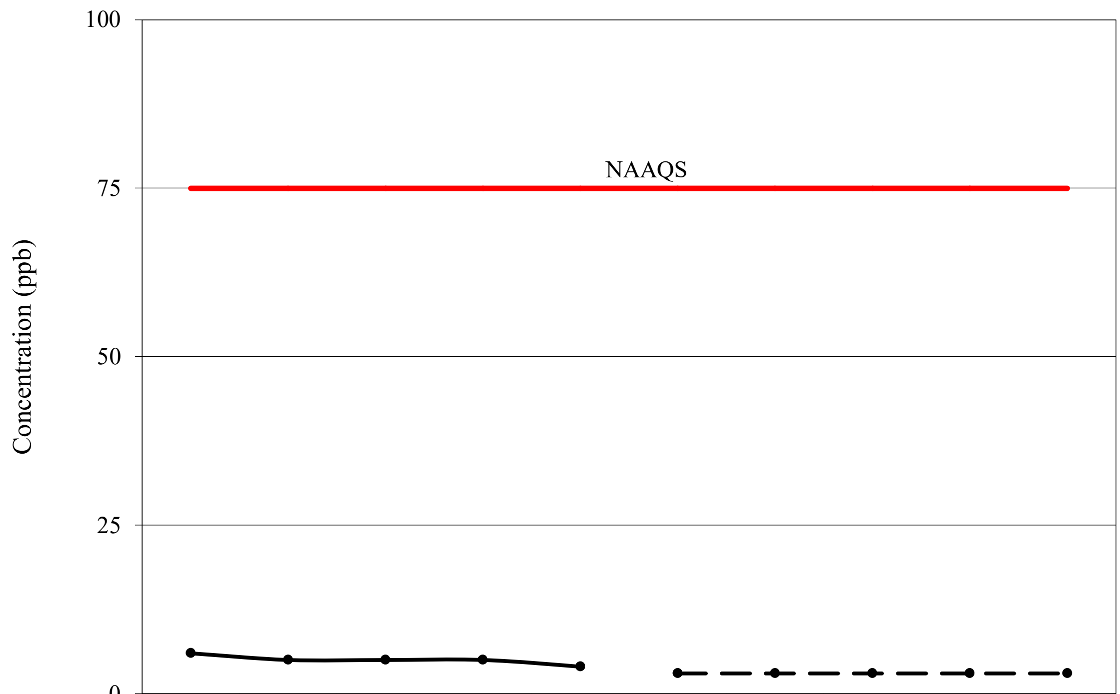
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
NAAQS	53	53	53	53	53	53	53	53	53	53
RNO (0016)	14	12	12	12	11					
REN (0031)						12	12	12	11	10

SO_2 (1-hour) Design Values

NAAQS Level: 75 ppb
Design Value (2022-24): 3 ppb (REN)
Current Designations: Attainment/Unclassifiable (Entire County)

2024 First High: 3.0 ppb (Apr 23 - REN)
2024 99th Percentile: 2.8 ppb (Dec 18 - REN)

Figure 21
SO_2 (1-hour) Design Values



	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
NAAQS	75	75	75	75	75	75	75	75	75	75
RNO (0016)	6	5	5	5	4					
REN (0031)						3	3	3	3	3

NORTHERN NEVADA Public Health

Air Quality

Please contact the Planning Branch of AQMD for questions and comments at,
KeepItClean@nnph.org

Appendix A

Detailed Summary of Ambient Air Monitoring Data

Exceedances Highlighted in Yellow

Violations Highlighted in Red

NAAQS Exceedances (2022-2024)

Pollutant	Averaging Period	Exceedance Dates		
		2022	2023	2024
O_3	8-hour	Jul: 22	None	Jun: 14, 23 Jul: 11 Aug: 1
$PM_{2.5}$	24-hour	Sep: 10-17	None	None
PM_{10}	24-hour	Sep: 11, 13-16	None	None
CO	1-hour	None	None	None
CO	8-hour	None	None	None
NO_2	1-hour	None	None	None
SO_2	1-hour	None	None	None
Pb	Rolling 3-month	N/A - Pb was not monitored		

Ozone (O_3)

8-Hour Ozone Averages (ppm)
(2024)

Rank	INC (2002)		LEM (2009)		REN (0031)		SRN (0020)		SPK (1005)		SPS (1007)		TOL (0025)	
	Value	Date	Value	Date	Value	Date	Value	Date	Value	Date	Value	Date	Value	Date
1	0.071	06/23	0.072	06/14	0.076	08/01	0.073	08/01	0.071	07/11	0.073	07/11	0.069	06/23
2	0.070	07/11	0.072	06/23	0.071	06/23	0.071	07/11	0.070	08/01	0.073	08/01	0.069	08/01
3	0.069	06/14	0.072	08/01	0.070	07/31	0.069	06/15	0.068	06/23	0.072	06/23	0.068	06/15
4	0.068	06/15	0.070	07/11	0.069	06/15	0.069	06/23	0.067	06/15	0.069	06/14	0.068	07/11
5	0.067	08/01	0.068	07/08	0.069	07/08	0.068	08/02	0.067	07/31	0.069	07/30	0.067	06/22
6	0.067	08/31	0.068	07/22	0.068	07/12	0.067	06/21	0.065	08/02	0.068	06/15	0.067	07/30
7	0.066	08/28	0.068	07/31	0.067	06/21	0.067	06/22	0.064	06/21	0.068	06/22	0.065	06/21
8	0.066	09/25	0.067	06/15	0.067	06/22	0.067	07/12	0.064	06/22	0.068	07/10	0.064	07/03
9	0.065	04/13	0.067	06/22	0.067	07/04	0.065	07/03	0.064	07/08	0.067	07/12	0.064	07/12
10	0.065	07/30	0.067	07/30	0.067	08/02	0.065	07/04	0.064	07/10	0.067	07/31	0.064	07/29

4th High 8-Hour Ozone Averages and Design Values (ppm)
(2022-2024)

Year	INC (2002)		LEM (2009)		REN (0031)		SRN (0020)		SPK (1005)		SPS (1007)		TOL (0025)	
	Value	Date	Value	Date	Value	Date	Value	Date	Value	Date	Value	Date	Value	Date
2022	0.065	04/29	0.061	08/31	0.065	07/23	0.066	07/23	0.063	06/06	0.066	09/01	0.061	07/23
2023	0.065	05/17	0.067	07/12	0.062	06/07	0.064	06/02	0.066	07/03	0.063	07/10	0.062	05/18
2024	0.068	06/15	0.070	07/11	0.069	06/15	0.069	06/23	0.067	06/15	0.069	06/14	0.068	07/11
DV*	0.066		0.066		0.065		0.066		0.065		0.066		0.063	

* Annual fourth-highest daily maximum 8-hr concentration, averaged over 3 years.[1]

[1] **40 CFR 50 App. I**

$PM_{2.5}$

24-Hour $PM_{2.5}$ Averages (µg/m^3)
(2024)

Rank	REN (0031)		SPK (1005)		SPS (1007)		TOL (0025)	
	Value (%ile)	Date	Value (%ile)	Date	Value (%ile)	Date	Value (%ile)	Date
1	25.1	07/31	23.5	01/01	23.0	07/31	23.3	07/31
2	24.0	08/12	23.5	12/19	20.5	08/01	21.9	09/07
3	23.5	11/08	22.1	07/31	15.5	08/12	21.3	09/08
4	22.3	08/01	21.5	08/01	14.3	12/19	17.9	08/01
5	19.3	12/20	20.8	12/07	13.3	12/18	17.0	08/08
6	17.2	08/08	20.6	12/18	13.2	09/05	14.5	12/20
7	15.2	12/07	20.5	12/20	13.2	12/20	13.3	12/02
8	15.0	11/30	19.2	01/08	13.0	08/08	13.0	09/09
9	14.1	12/01	19.1	12/08	13.0	12/07	12.2	12/01
10	14.0	12/19	18.5	08/12	12.2	11/10	12.1	12/11

98th Percentiles of 24-Hour $PM_{2.5}$ Averages and Design Values (µg/m^3)
(2022-2024)

Year	REN (0031)	SPK (1005)	SPS (1007)	TOL (0025)
2022	74.1	57.6	39.2	34.7
2023	12.5	18.2	12.0	10.4
2024	15.0	19.2	13.0	13.0
Design Value*	34	32	21	19

* 98th percentile, averaged over 3 years.[1]

Annual $PM_{2.5}$ Means and Design Values (µg/m^3)
(2022-2024)

Year	REN (0031)	SPK (1005)	SPS (1007)	TOL (0025)
2022	7.9	10.0	7.7	6.6
2023	3.8	7.2	5.9	4.2
2024	5.2	6.6	5.3	3.7
Design Value*	5.7	7.9	6.3	4.8

*Annual $PM_{2.5}$ NAAQS revised to 9.0 µg/m^3 effective May 6, 2024

[1] **40 CFR 50 App. N**

PM_{10}

24-Hour PM_{10} Averages ($\mu g/m^3$)
(2024)

Rank	REN (0031)		SPK (1005)		SPS (1007)		TOL (0025)	
	Value	Date	Value	Date	Value	Date	Value	Date
1	53	12/11	69	12/19	49	08/23	46	09/08
2	53	12/20	59	12/18	43	05/26	46	12/11
3	44	11/08	58	01/29	42	08/01	44	09/07
4	41	08/01	54	12/20	41	07/31	42	07/31
5	40	12/04	52	05/04	37	10/04	42	11/11
6	39	01/16	51	09/06	35	08/02	40	11/13
7	39	02/13	51	11/20	35	08/12	37	12/20
8	39	07/31	50	12/11	35	10/06	35	08/01
9	38	08/12	49	01/19	32	08/22	35	08/08
10	38	12/18	49	11/11	32	09/05	34	08/02

24-Hour PM_{10} Highs ($\mu g/m^3$)
(2022-2024)

Year	REN (0031)		SPK (1005)		SPS (1007)		TOL (0025)	
	Value	Date	Value	Date	Value	Date	Value	Date
2022	220	09/16	231	09/14	242	09/14	230	09/15
2023	56	08/04	64	02/08	71	08/05	58	08/05
2024	53	12/11	69	12/19	49	08/23	46	09/08

PM_{10} Expected Exceedances and Design Values (expected exceedances)
(2022-2024)

Year	REN (0031)	SPK (1005)	SPS (1007)	TOL (0025)
2022	3	1	2	4
2023	0	0	0	0
2024	0	0	0	0
Design Value*	1.0	0.3	0.7	1.3

* Expected exceedances averaged over three years.[1]

[1] **40 CFR 50 App. K**

Carbon Monoxide (CO)

8-Hour CO Averages (ppm)
(2024)

Rank	REN (0031)	
	Value	Date
1	1.0	01/02
2	1.0	01/05

2nd High 8-Hour Averages and Design Values (ppm)
(2023-2024)

Year	REN (0031)
2023	1.2
2024	1.0
Design Value*	1.2

* Highest 2nd high 8-hour average in the last 2 years.[1]

1-Hour CO Averages (ppm)
(2024)

Rank	REN (0031)	
	Value	Date
1	1.8	12/18
2	1.7	12/20

2nd High 1-Hour Averages and Design Values (ppm)
(2023-2024)

Year	REN (0031)
2023	1.7
2024	1.7
Design Value*	1.7

* Highest 2nd high 1-hour average in the last 2 years.[1]

[1] Laxton, William G. "Ozone and Carbon Monoxide Design Value Calculations." EPA, Environmental Protection Agency, 18 June 1990, archive.epa.gov/ttn/ozone/web/html/laxton.html. 24 March 2025.

Nitrogen Dioxide (NO_2)

1-Hour NO_2 Averages (ppb)
(2024)

Rank	REN (0031)	
	Value (%ile)	Date
1	50.1	01/11
2	50.0	12/20
3	49.6	01/12
4	47.1	12/19
5	46.4	12/09
6	44.8	11/10
7	44.4	02/13
8	44.0 (98%)	12/13
9	43.4	11/14
10	43.3	01/02

98th Percentiles of 1-Hour NO_2 Averages and Design Value (ppb)
(2022-2024)

Year	REN (0031)
2022	47.2
2023	49.1
2024	44.0
Design Value*	47

*98th percentile, averaged over 3 years[1]

NO_2 Annual Mean and Design Value (ppb)
(2024)

	REN (0031)
Annual Mean	9.9
Design Value*	10

* Annual Mean of all 1-hr averages.

[1] **40 CFR 50 App. S**

Sulfur Dioxide (SO_2)

1-Hour SO_2 Averages (ppb)
(2024)

Rank	REN (0031)	
	Value (%ile)	Date
1	3.0	04/23
2	2.9	12/04
3	2.9	12/19
4	2.8 (99)	12/18
5	2.7	12/20
6	2.6	12/11
7	2.5	02/13
8	2.3	01/02
9	2.3	01/05
10	2.3	12/05

99^{th} Percentiles of 1-Hour SO_2 Averages and Design Value (ppb)
(2022-2024)

Year	REN (0031)
	Value
2022	3.4
2023	2.8
2024	2.8
Design Value*	3

* 99^{th} percentile of 1-hour daily maximum concentrations, averaged over 3 years.[1]

[1] 40 CFR 50 App. T

Appendix B

Monitoring Stations in Operation from 1963 to 2024

Monitoring Stations in Operation (2015– 2024)

AQS Site Name (AQS Site ID)	Ozone	$PM_{2.5}$	PM_{10}	TSP	HC	CO	NO_2	SO_2	Lead
Incline (32-031-2002)	93-24	99-02	99-02			99-02	99-02		
Lemmon Valley (32-031-2009)	87-24		87			87-16			
Reno3 (32-031-0016)	82-19	99-19	88-19	85-87		83-19	84-19	11-19	
Reno4 (32-031-0031)	20-24	20-24	20-24			20-24	20-24	20-24	
Plumb-Kit (32-031-0030)			06-17						
South Reno (32-031-0020)	88-24		11-17			88-14			
Sparks (32-031-1005)	79-24	12-24	88-24	85-87		80-23			
Toll (32-031-0025)	02-24	19-24	02-24			02-16			
Spanish Springs (32-031-1007)	17-24	17-24	17-24						

Monitoring Stations in Operation (1963 – 2014)

AQS Site Name (AQS Site ID)	Ozone	$PM_{2.5}$	PM_{10}	TSP	HC	CO	NO_2	SO_2	Lead
Health - Kirman (32-031-0001)				63-89					
Sparks - Greenbrae ES (32-031-0002)			85-90	68-90					
Reno - Cal-Neva (32-031-0003)				68-89					
Reno - Veterans ES (32-031-0004)				68-69					
Reno - Harrah's (32-031-0005)	76-82					72-81	72-85		
Reno - Jesse Beck ES (32-031-0006)				72-89					
Reno - Airport (32-031-0007)				72-89					
Reno - Fairgrounds (32-031-0008)				72-74					
Reno - Fish & Game (32-031-0009)				74-89					
Reno - Kings Row ES (32-031-0010)				77-89					
Reno - Stead (32-031-0011)				77					
Reno - Huffaker ES (32-031-0014)				80-89					
Reno - Center Street (32-031-0015)						82-85	82-90		
Galletti (32-031-0022)		13-14	88-14			88-14			
Sparks - Fire (32-031-1001)				68-69					
Verdi - ES (32-031-1002)				68-89					
Sparks - Nugget (32-031-1003)				72-80					
Sparks - TMWRF (32-031-1004)				74-89					
Sparks - Victorian (32-031-1006)			88	80-89					
Incline - Pump (32-031-2001)				72-89					
Wadsworth - Fire (32-031-2003)				73-75					
Empire - School (32-031-2005)				76-77					
Reno - Sun Valley (32-031-2006)			88-05	80-89					

Appendix C

Informationally Flagged Days in 2024

Date	Event
June 11-12	Trail and Sullivan Fires
July 9-16	Thompson and Royal Fires
July 19-24	Trout, Long, and Park Fires
July 29-August 3	Park Fire
August 7-9	Crozier and Park Fire
August 11-12	Gold Ranch Fire
September 2-13	Bear, Boone, Coffee Pot, Davis Fires
October 30	Calaveras Big Trees State Park Rx Fire
November 8	Waddle Ranch Rx Fire
November 11	Callahan Ranch Fire