

WASHOE COUNTY HEALTH DISTRICT

ENHANCING QUALITY OF LIFE

2023 Ambient Air Monitoring Network Plan

June 30, 2023



Public Health
Prevent. Promote. Protect.

VISION

A healthy community

MISSION

To protect and enhance the well-being and quality of life for all in Washoe County.

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Acronyms and Abbreviations

| | |
|----------------------|--|
| AADT | Annual Average Daily Traffic Count |
| AQMD | Washoe County Health District - Air Quality Management Division |
| AQS | Air Quality System |
| ARM | Approved Regional Method |
| ATR | Automatic Traffic Recorder |
| BAM | Beta Attenuation Monitor |
| CARB | California Air Resources Board |
| CBSA | Core-Based Statistical Area |
| cc/min | Cubic centimeter per minute |
| CFR | Code of Federal Regulations |
| CO | Carbon Monoxide |
| EPA | U.S. Environmental Protection Agency |
| ESC | Environmental Systems Corporation |
| FEM | Federal Equivalent Method |
| FRM | Federal Reference Method |
| GFC | Gas Filter Correlation |
| MSA | Metropolitan Statistical Area |
| NAAQS | National Ambient Air Quality Standards |
| NCore | National Core multipollutant monitoring station |
| NDOT | Nevada Department of Transportation |
| NEI | National Emissions Inventory |
| NO | Nitric Oxide |
| NO ₂ | Nitrogen Dioxide |
| NO _x | Oxides of Nitrogen |
| NO _y | Reactive Oxides of Nitrogen |
| O ₃ | Ozone |
| ORD | EPA's Office of Research and Development |
| PLPT | Pyramid Lake Paiute Tribe |
| 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 _{coarse} | PM ₁₀ minus PM _{2.5} |
| ppb | parts per billion |
| ppm | parts per million |
| PWEI | Population Weighted Emissions Index |
| RSIC | Reno-Sparks Indian Colony |
| SASS | Speciation Air Sampling System |
| SIP | State Implementation Plan |
| SLAMS | State and Local Air Monitoring Station |
| SO ₂ | Sulfur Dioxide |
| SPM | Special Purpose Monitoring |
| SR | State Route |
| STN | Speciation Trends Network |
| TAPI | Teledyne Advanced Pollution Instrumentation, Inc. |
| WAMMS | Wadsworth Air and Meteorological Monitoring Site |

Introduction

Purpose

The U.S. Environmental Protection Agency (EPA) finalized amendments to the ambient air monitoring regulations on October 17, 2006.¹ The amendments revise the technical requirements for certain types of ambient air monitoring sites, add provisions for monitoring of PM_{coarse}, and reduce certain monitoring requirements for criteria pollutants. Monitoring agencies are required to submit annual monitoring network plans, conduct network assessments every five years, perform quality assurance activities, and in certain instances, have NCore sites established by January 1, 2011.

This plan was prepared and submitted as part of the fulfillment of these regulations. It represents the Washoe County Health District - Air Quality Management Division's (AQMD) ambient air monitoring program activities completed in 2022 and proposed network modifications for 2023-2024.

Public Inspection Process

This monitoring network plan was available for public inspection from May 25 to June 25, 2023, at the AQMD website ([OurCleanAir.com](https://www.ourcleanair.com)). A hardcopy of the plan was also available at the AQMD office. See Appendix A for AQMD's Public Inspection Plan.

Agency Contacts

For information or questions regarding the 2023 Ambient Air Monitoring Network Plan, please contact the following individuals of the AQMD.

Francisco Vega, Division Director
(775) 784-7211, or fvega@washoecounty.gov

Craig Petersen, Branch Chief
(775) 784-7233, or cpetersen@washoecounty.gov

Daniel Timmons, Senior Air Quality Specialist
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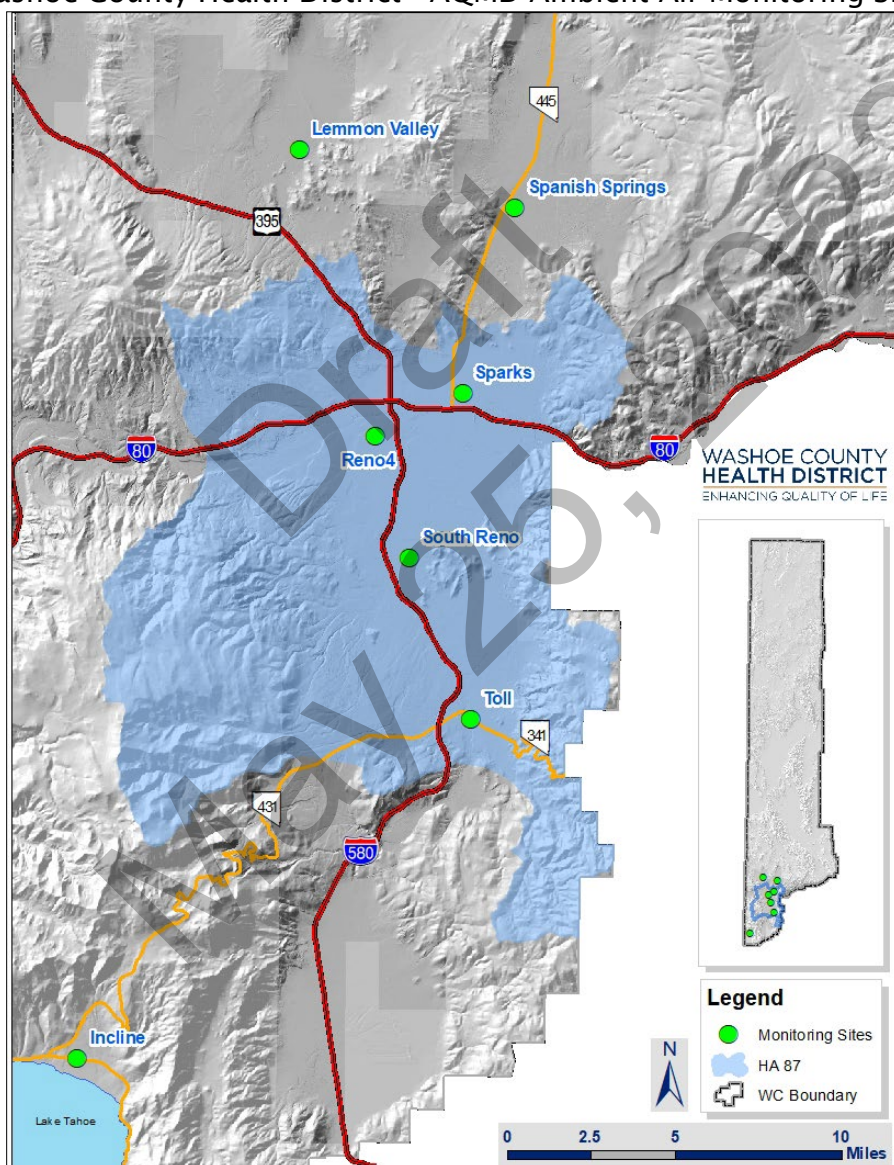
¹ 71 FR 61236-61328.

Overview of Washoe County Health District Network Operation

Network Design

The AQMD operated seven (7) ambient air monitoring sites in 2023 (Figure 1). The blue boundary delineates Hydrographic Area 87 (HA 87) as defined by the State of Nevada Division of Water Resources. This area was designated as “serious” non-attainment for the 24-hour PM_{10} NAAQS until it was redesignated to “Attainment/Maintenance” effective January 7, 2016.² Washoe County is classified as “attainment” or “unclassifiable/attainment” for all other pollutants and averaging times. Table 1 lists the parameters monitored in 2022 sorted by network type and site.

Figure 1
Washoe County Health District - AQMD Ambient Air Monitoring Sites



² 80 FR 76232 (December 8, 2015).

Table 1
Ambient Air Monitoring Sites and Parameters Monitored

| <u>Network Type</u> Site | | | | | | | | | | | | | | | | | | |
|-----------------------------|----------------|----|----------|----|-----------------|-----------------|----------|--------|-----|-----------------------|---------------------------|-------------------------------|----------------------------|--------------------------------|-------------------------------|-----------------------------------|------------------------------|-------------|
| SLAMS | O ₃ | CO | Trace CO | NO | NO ₂ | NO _x | Trace NO | NOy-NO | NOy | Trace SO ₂ | PM ₁₀ (manual) | PM ₁₀ (continuous) | PM _{2.5} (manual) | PM _{2.5} (continuous) | PM _{coarse} (manual) | PM _{coarse} (continuous) | PM _{2.5} Speciation | Meteorology |
| Incline | ✓ | | | | | | | | | | | | | | | | | |
| Lemmon Valley | ✓ | | | | | | | | | | | | | | | | | |
| South Reno | ✓ | | | | | | | | | | | | | | | | | ✓ |
| Spanish Springs | ✓ | | | | | | | | | | | ✓ | | ✓ | | ✓ | | ✓ |
| Sparks | ✓ | ✓ | | | | | | | | | | ✓ | | ✓ | | ✓ | | ✓ |
| Toll | ✓ | | | | | | | | | | | ✓ | | ✓ | | ✓ | | ✓ |
| | | | | | | | | | | | | | | | | | | |
| NCore ³ | | | | | | | | | | | | | | | | | | |
| Reno4 | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |
| | | | | | | | | | | | | | | | | | | |
| STN | | | | | | | | | | | | | | | | | | |
| Reno4 | | | | | | | | | | | | | | | | | ✓ | |
| | | | | | | | | | | | | | | | | | | |
| SPM | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |

Notes: Meteorology for the NCore network includes ambient temperature, wind speed, wind direction, and relative humidity. The PM₁₀ manual method monitor at NCore is for PM_{coarse} calculation only and is not submitted to AQS for data to be used in comparison to the NAAQS.

³ NCore monitoring began December 2010.

Minimum Monitoring Requirements

Except where otherwise noted, each monitor in AQMD's ambient air monitoring network meets the minimum monitoring requirements for all criteria pollutants pursuant to 40 CFR 58, Appendices A, B, C, D, and E, where applicable. Tables 2 through 10 provide pollutant specific monitoring requirements. Additional pollutant specific data may be found in the "[Washoe County, Nevada, Air Quality Trends Report, 2012-2021](#)". The 2022 population data are from the Nevada State Demographer's Office.⁴

Table 2
Minimum Monitoring Requirements for O₃

| MSA | County | Population | 8-hour Design Value (2020-2022) | | Number of Sites | | |
|-------------|---------------------------|-----------------------------|------------------------------------|-------------------|------------------|--------|--------|
| | | | ppm | Site (ID) | Minimum Required | Active | Needed |
| Reno-Sparks | Washoe Storey Total | 501,635 4,427 506,062 | 0.074 | Incline (2002) | 2 | 7 | 0 |

Monitors required for SIP or Maintenance Plan: 2

Title 40 CFR 58, Appendix D, Section 4.1 requires O₃ monitoring in MSAs with populations above 350,000 people. Monitors are also required in MSAs with lower populations if measured O₃ values within that MSA are 85% or more of the NAAQS.

Table 3
Minimum Monitoring Requirements for PM_{2.5} SLAMS (FRM/FEM/ARM)

| MSA | County | Population | Design Value (2020-2022) | | | | Number of SLAMS Sites | | |
|-------------|---------------------------|-----------------------------|--------------------------------|---------------------|-------------------------------|-----------------|-----------------------|--------|--------|
| | | | Annual (µg/m ³) | Annual Site (ID) | Daily (µg/m ³) | Daily Site (ID) | Minimum Required | Active | Needed |
| Reno-Sparks | Washoe Storey Total | 501,635 4,427 506,062 | 11.0 | Sparks (1005) | 77.7 | Reno4 (0031) | 1 | 4 | 0 |

Monitors required for: SIP or Maintenance Plan: 0; NCore: 1

Title 40 CFR 58, Appendix D, Section 4.7.1 requires PM_{2.5} monitoring in MSAs with populations above 500,000 people and in MSAs with lower populations if measured PM_{2.5} values for an MSA are 85% or more of the NAAQS.

⁴ Nevada State Demographer, "Governor Certified Population Estimates of Nevada's Counties, Cities and Towns 2002 to 2022"

Table 4
Minimum Monitoring Requirements for Continuous PM_{2.5} Monitors (FEM/ARM/non-FEM)

| MSA | County | Population | Design Value (2020-2022) | | | | Number of Continuous Monitors | | |
|-----------------|---------------------------|-----------------------------|-----------------------------|---------------------|------------------|--------------------|-------------------------------|--------|--------|
| | | | Annual (µg/m³) | Annual Site (ID) | Daily (µg/m³) | Daily Site (ID) | Minimum Required | Active | Needed |
| Reno- Sparks | Washoe Storey Total | 501,635 4,427 506,062 | 11.0 | Sparks (1005) | 77.7 | Reno (0031) | 1 | 4 | 0 |

Monitors required for: SIP or Maintenance Plan: 0; NCore: 1

Title 40 CFR 58, Appendix D, Section 4.7.2 requires continuous PM_{2.5} monitors equal to at least one-half (round up) of the minimum sites listed in Table D-5 of Title 40 CFR 58, Appendix D.

Table 5
Minimum Monitoring Requirements for PM₁₀

| MSA | County | Population | Maximum Concentration (2020-2022) | | Number of Sites | | |
|-----------------|---------------------------|-----------------------------|--------------------------------------|----------------|---------------------|--------|--------|
| | | | µg/m³ | Site (ID) | Minimum Required | Active | Needed |
| Reno- Sparks | Washoe Storey Total | 501,635 4,427 506,062 | 319 | Toll (0025) | 4-8 | 4 | 0 |

Monitors required for SIP or Maintenance Plan: 4

Title 40 CFR 58, Appendix D, Section 4.6 specifies PM₁₀ monitoring requirements in MSAs based on population and design values. The number of PM₁₀ stations in areas where MSA populations are from 500,000-1,000,000 must be in the range of 4 to 8 stations, depending on ambient concentration levels.

Table 6
Minimum Monitoring Requirements for NO₂

| CBSA | County | Population | Max AADT counts (year) | Number of Monitors | | | | | |
|-------------|---------------------------|-----------------------------|---------------------------------|-----------------------|-------------------------|-------------------------|-----------------------|-------------------------|-------------------------|
| | | | | Required Near-Road | Active Near- Road | Near- Road Needed | Required Area-Wide | Active Area- Wide | Area- Wide Needed |
| Reno, NV | Washoe Storey Total | 501,635 4,427 506,062 | 170,000 ⁵ (2022) | 0 | 0 | 0 | 0 | 1 | 0 |

Monitors required for: SIP or Maintenance Plan: 0; NCore: 1

Monitors required for PAMS: 0

EPA Regional Administrator-required monitors per 40 CFR 58, App. D 4.3.4: 0

Title 40 CFR 58, Appendix D, Section 4.3.2 requires one near-road NO₂ monitoring station in each CBSA with populations over 1,000,000 people. Likewise, Title 40 CFR 58, Appendix D, Section 4.3.3 requires one area-wide NO₂ monitoring station in each CBSA with populations over 1,000,000 people. Based on the 2022 population data from the Nevada State Demographer's Office, the Reno, NV CBSA does not require a near-road or area-wide NO₂ monitoring station.

⁵ NDOT ATR 0310634 between the Plumb-Villanova Interchange 'Exit 65' & Mill St Interchange 'Exit 66'.

Table 7
Minimum Monitoring Requirements for SO₂

| CBSA | County | Population | Total SO ₂ (tons/year) | PWEI (Million persons- tons/year) | Data Requirements Rule Source(s) using Monitoring | Number of Monitors | | |
|-------------|----------------------------------|-----------------------------|--------------------------------------|--|---|---------------------|--------|--------|
| | | | | | | Minimum Required | Active | Needed |
| Reno, NV | Washoe <u>Storey</u> Total | 501,635 4,427 506,062 | 339.0 ⁶ | 171.6 | n/a | 0 | 1 | 0 |

Monitors required for SIP or Maintenance Plan: 0; NCore: 1

EPA Regional Administrator-required monitors per 40 CFR 58, App. D 4.4.3: 0

Title 40 CFR 58, Appendix D, Section 4.4.2 requires an SO₂ monitoring network based on a calculated population weighted emissions index (PWEI). This index is calculated by multiplying the population of a CBSA with the National Emission Inventory (NEI) data for counties within that CBSA. The calculated value is then divided by one million in order to obtain the PWEI value. PWEI monitoring requirements are as follows: 1) one monitor in CBSAs with a PWEI value greater than 5,000, 2) two monitors in CBSAs with a PWEI value greater than 100,000, and 3) three monitors in CBSAs with a PWEI value greater than 1,000,000. As shown in Table 8, AQMD used 2022 population data from the Nevada State Demographer's Office and 2020 National Emissions Inventory data to determine that no additional SO₂ monitoring is required.

Table 8
Minimum Monitoring Requirements for CO

| CBSA | County | Population | Number of Monitors | | |
|----------|----------------------------------|-----------------------------|--------------------|------------------|--------|
| | | | Required Near-Road | Active Near-Road | Needed |
| Reno, NV | Washoe <u>Storey</u> Total | 501,635 4,427 506,062 | 0 | 0 | 0 |

Monitors required for: SIP or Maintenance Plan: 0; NCore: 1

EPA Regional Administrator-required monitors per 40 CFR 58, App. D 4.2.2: 0

Title 40 CFR 58, Appendix D, Section 3.0 requires high sensitivity CO monitors at NCore sites. Title 40 CFR 58, Appendix D, Section 4.2 requires one CO monitor to operate collocated with one required near-road NO₂ monitor in CBSAs having populations over 1,000,000 people. Based on the 2020 population data from the Nevada State Demographer's Office, the Reno, NV CBSA does not require a CO monitor collocated with a near-road NO₂ monitor.

⁶ U.S.EPA, 2020 National Emissions Inventory (NEI) Data

Table 9
Source-Oriented Pb Monitoring

| Source Name | Address | Pb Emissions (tons/year) | Emission Inventory Source & Data Year | Max 3-Month Design Value (µg/m³) | Design Value Date (3 rd Month, Year) | Number of Monitors | | |
|----------------------------------|-------------------------------|--------------------------|---------------------------------------|----------------------------------|---|--------------------|--------|--------|
| | | | | | | Minimum Required | Active | Needed |
| Reno-Stead Airport | 4895 Texas Ave Reno, NV | 0.126 | 2020 NEI | n/a | n/a | 0 | 0 | 0 |
| Reno-Tahoe International Airport | 2001 E Plumb Lane Reno, NV | 0.123 | 2020 NEI | n/a | n/a | 0 | 0 | 0 |

Monitors required for: SIP or Maintenance Plan: 0

EPA Regional Administrator-required monitors per 40 CFR 58, App. D 4.5(c): 0

Title 40 CFR 58, Appendix D, Section 4.5(a) requires one source-oriented SLAMS site located to measure the maximum Pb concentration in ambient air resulting from each non-airport Pb source which emits 0.50 or more tons per year and from each airport which emits 1.0 or more tons per year based on the most recent National Emission Inventory. All non-airport sources of Pb within the CBSA emit less than 0.5 tons per year and all airport sources within the CBSA emit less than 1.0 tons per year, according to the 2020 NEI. Table 10 includes the two largest sources of Pb emissions in the Reno, NV CBSA.

Table 10
Near-Road NO₂, PM_{2.5}, and CO Monitors

| CBSA | Population (year) | Max AADT Counts (year) | Number of Monitors | | | | | | |
|----------|-------------------|-----------------------------|--------------------------|------------------------|----------------------------|--------------------------|-------------|-----------|-------------------|
| | | | Required NO ₂ | Active NO ₂ | Required PM _{2.5} | Active PM _{2.5} | Required CO | Active CO | Additional Needed |
| Reno, NV | 501,635 (2022) | 170,000 ⁷ (2022) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Title 40 CFR 58.13 and Appendix D to Title 40 CFR 58, Sections 4.2, 4.3, and 4.7 require one near-road CO monitor to operate collocated with one near-road NO₂ monitor in CBSAs having a population of 1,000,000 or more persons. An additional NO₂ monitor is required in CBSAs with a population of 2,500,000 or more persons.

⁷ NDOT ATR 0310634 between the Plumb-Villanova Interchange 'Exit 65' & Mill St Interchange 'Exit 66'.

Collocation Requirements

Title 40 CFR 58, Appendix A, Section 3 describes the number of collocated monitors required for PM_{2.5}, PM₁₀, and Pb networks at the Primary Quality Assurance Organization (PQAO) level. Tables 11 and 12 display how AQMD is assessing and meeting these collocation requirements.

Table 11
Collocation of Manual PM_{2.5}, PM₁₀, and non-NCore Pb Monitors

| Method Code | Number of Primary Monitors | Number of Collocated Monitors | |
|-------------|----------------------------|-------------------------------|--------|
| | | Required | Active |
| 125 | 0 | 0 | 0 |

Title 40 CFR 58, Appendix A, Section 3.2.3 requires 15 percent (at least 1) of the manual method samplers be collocated. Being that AQMD only runs one manual method sampler for the calculation of PM_{10-2.5} at the Reno4 NCore station, and all the Primary PM₁₀ monitors are continuous methods, there is no collocation requirement.

Table 12
Collocation of Automated FEM PM_{2.5} Monitors

| Method Code | Number of Primary Monitors | Number of Required Collocated Monitors | Number of Active Collocated FRM Monitors | Number of Active Collocated FEM Monitors (same method designation as primary) |
|-------------|----------------------------|--|--|---|
| 170 | 4 | 1 | 1 | 0 |

Title 40 CFR 58, Appendix A, Section 3.2.3 requires 15 percent of the primary monitors of each method designation (at least 1) be collocated. Values of 0.5 and greater round up. The first collocated monitor must be a designated FRM monitor. AQMD meets this requirement by having four Primary PM_{2.5} FEM monitors with one at the Reno4 monitoring station collocated with a PM_{2.5} FRM sampler.

Process to Review Changes to PM2.5 Monitoring Network

40 CFR 58.10(c) requires this annual network plan to “provide for the review of changes to a PM2.5 monitoring network that impact the location of a violating PM2.5 monitor.” There is no current plan to relocate or discontinue any PM2.5 monitor suitable for NAAQS comparison. Any changes to the PM2.5 monitoring network with impact to the location of a violating PM2.5 monitor will be documented in this section of future annual network plans.

Network Modifications Completed in 2022

SLAMS:

- No modifications completed.

NCore:

- No modifications completed.

Speciation Trends:

- No modifications completed.

SPM:

- No modifications completed.

Additional Changes Completed in 2022

SLAMS:

CO (Sparks)

- Programmed data logger/calibrator to run nightly automatic zero and span checks.

O3 (Incline, Lemmon Valley, South Reno, Spanish Springs, Sparks, and Toll)

- Programmed data loggers/calibrators to run nightly automatic zero and span checks.

NCore:

- No changes completed.

Speciation Trends:

- No changes completed.

SPM:

- No changes completed.

Network Modifications Proposed for 2023-2024

SLAMS:

CO (Sparks)

- Discontinue CO monitoring at the Sparks station. A formal request stating this proposal will be submitted prior to any modifications to follow the 40 CFR 58.14 criteria.

O₃ and meteorology (South Reno)

- Discontinue all monitoring at the South Reno station. A formal request stating this proposal will be submitted prior to any modifications to follow the 40 CFR 58.14 criteria.

NCore:

- No modifications proposed.

Speciation Trends:

- No modifications proposed.

SPM:

All pollutants and meteorology (Verdi)

- Begin monitoring PM₁₀, PM_{2.5}, PM_{coarse}, O₃, and meteorology at a new site in Verdi. This station will be constructed with American Rescue Plan (ARP) grants funds from EPA. A formal request stating this proposal will be submitted prior to any modifications to follow the 40 CFR 58.14 criteria.

Additional Changes Proposed for 2023-2024

SLAMS:

PM₁₀, PM_{2.5}, PM_{coarse} (Sparks)

- Install new Met One BAM 1020's as part of the 10-year replacement schedule. These monitors were purchased using one-time 103 grant funding received in 2022.

NCore:

SO₂, NO_x (Reno4)

- Install new T-Series Teledyne trace-level SO₂ and NO_x analyzers as part of the 10-year replacement schedule.

PM₁₀, PM_{2.5}, PM_{coarse} (Reno4)

- Install new Met One BAM 1020's as part of the 10-year replacement schedule. These monitors were purchased using one-time 103 grant funding received in 2022.

Speciation Trends:

- Install a new Met One SuperSASS as part of the 10-year replacement schedule. This sampler will be purchased using one-time 103 grant funding from EPA.

SPM:

- No changes proposed.

PM_{2.5} Monitoring Network Modifications Proposed for 2023-2024

SLAMS:

PM_{2.5}

- No modifications proposed.

NCore:

PM_{2.5}

- No modifications proposed.

Speciation Trends:

- No modifications proposed.

SPM:

PM_{2.5} (Verdi)

- Begin monitoring PM_{2.5} at new site in Verdi. A formal request stating this proposal will be submitted prior to any modifications to follow the 40 CFR 58.14 criteria.

Data Submission Requirements

Quality Assurance Data for 2022 were submitted to AQS for the:

- 1st quarter in June 2022
- 2nd quarter in September 2022
- 3rd quarter in December 2022
- 4th quarter in March 2023

Annual Data Certification for all data for 2022 was submitted to EPA on April 17, 2023.

Environmental Justice and Underserved Communities

Historically Underserved Communities are defined as:

(1) A census tract:

- (I) Designated as a qualified census tract by the United States Secretary of Housing and Urban Development pursuant to 26 U.S.C. § 42(d)(5)(B)(ii); or
- (II) In which, in the immediately preceding census, at least 20 percent of households were not proficient in the English language;

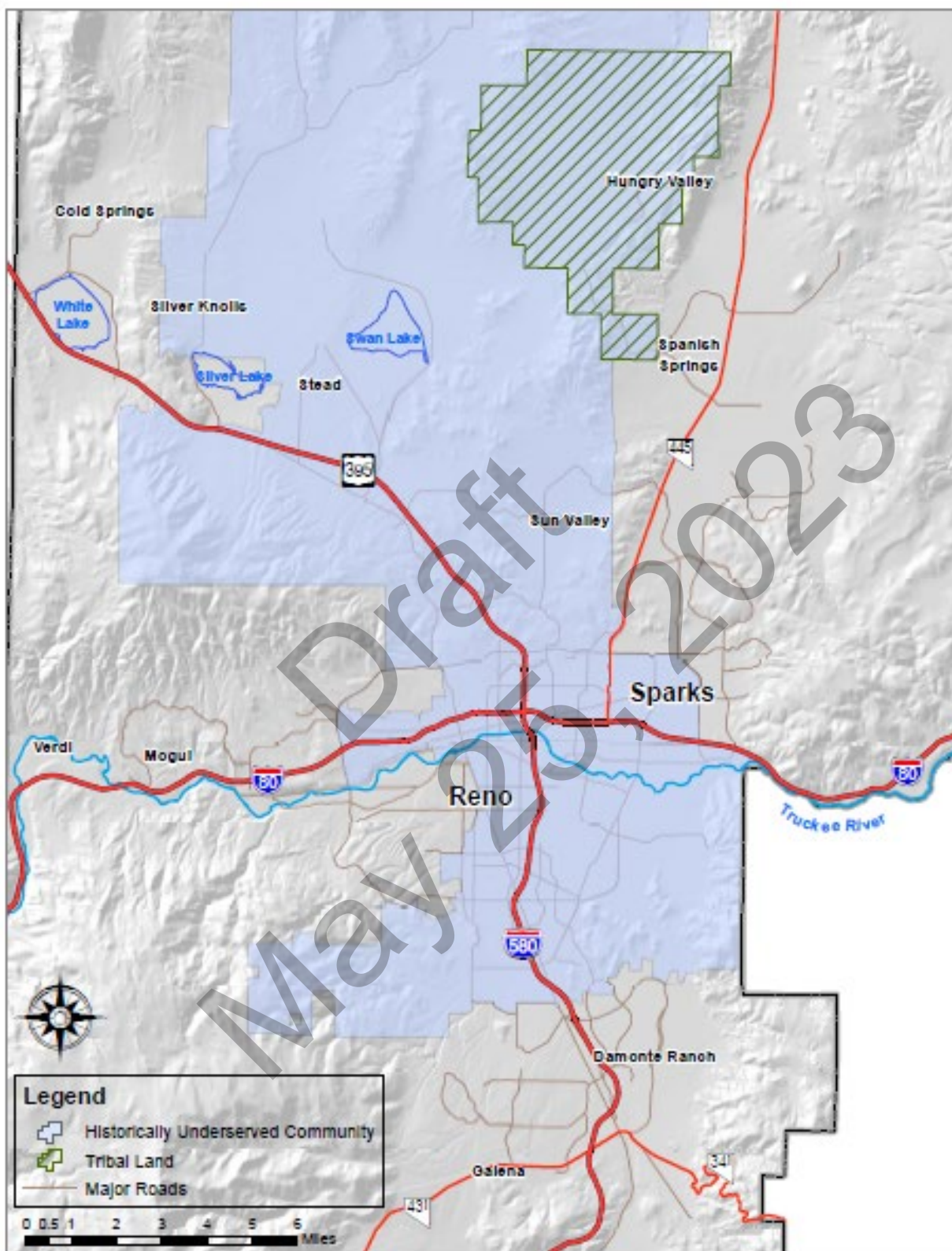
(2) A community in this State with at least one public school:

- (I) In which 75 percent or more of the enrolled pupils in the school are eligible for free or reduced-price lunches pursuant to 42 U.S.C. §§ 1751 et seq.; or
- (II) That participates in universal meal service in high poverty areas pursuant to Section 104 of the Healthy, Hunger-Free Kids Act of 2010, Public Law 111-296; or

(3) A community in this State located on qualified tribal land, as defined in NRS 370.0325.

Figure 12 highlights the Historically Underserved Communities in the Reno/Sparks area.

Figure 2
Historically Underserved Communities in the Reno/Sparks Area



Four out of seven of AQMD's ambient air monitoring sites are located in the communities defined above as historically underserved. Those sites are Lemmon Valley, Reno4, South Reno, and Sparks. AQMD will consider environmental justice factors during network design, siting, relocating, or discontinuing monitors, and engaging with specific communities when plans are out for public comment.

In 2022, AQMD partnered with the Reno-Sparks Indian Colony and donated two PurpleAir sensors as part of a supplemental environmental project. Both sensors have been installed on Tribal Lands, one in the original 28-acre Colony in central west Reno and the other in Hungry Valley.

Draft
May 25, 2023

Overview of Tribal Network Operations

Network Design

Two tribes operate ambient air monitoring networks within the geographic boundaries of Washoe County - The Reno-Sparks Indian Colony (RSIC) and Pyramid Lake Paiute Tribe (PLPT). Table 13 summarizes the tribal sites and parameters monitored in 2022. Figure 3 shows the location of tribal lands for the Reno-Sparks Indian Colony and the Pyramid Lake Paiute Tribes' monitoring sites. For additional detailed site information about the RSIC and PLPT monitoring networks including annual network plans, refer to the following contact information.

Reno-Sparks Indian Colony

Candance Stowell
Planning Manager
Planning Department/
Environmental Program
1937 Prosperity Street
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cstowell@rsic.org
<http://www.rsic.org/>

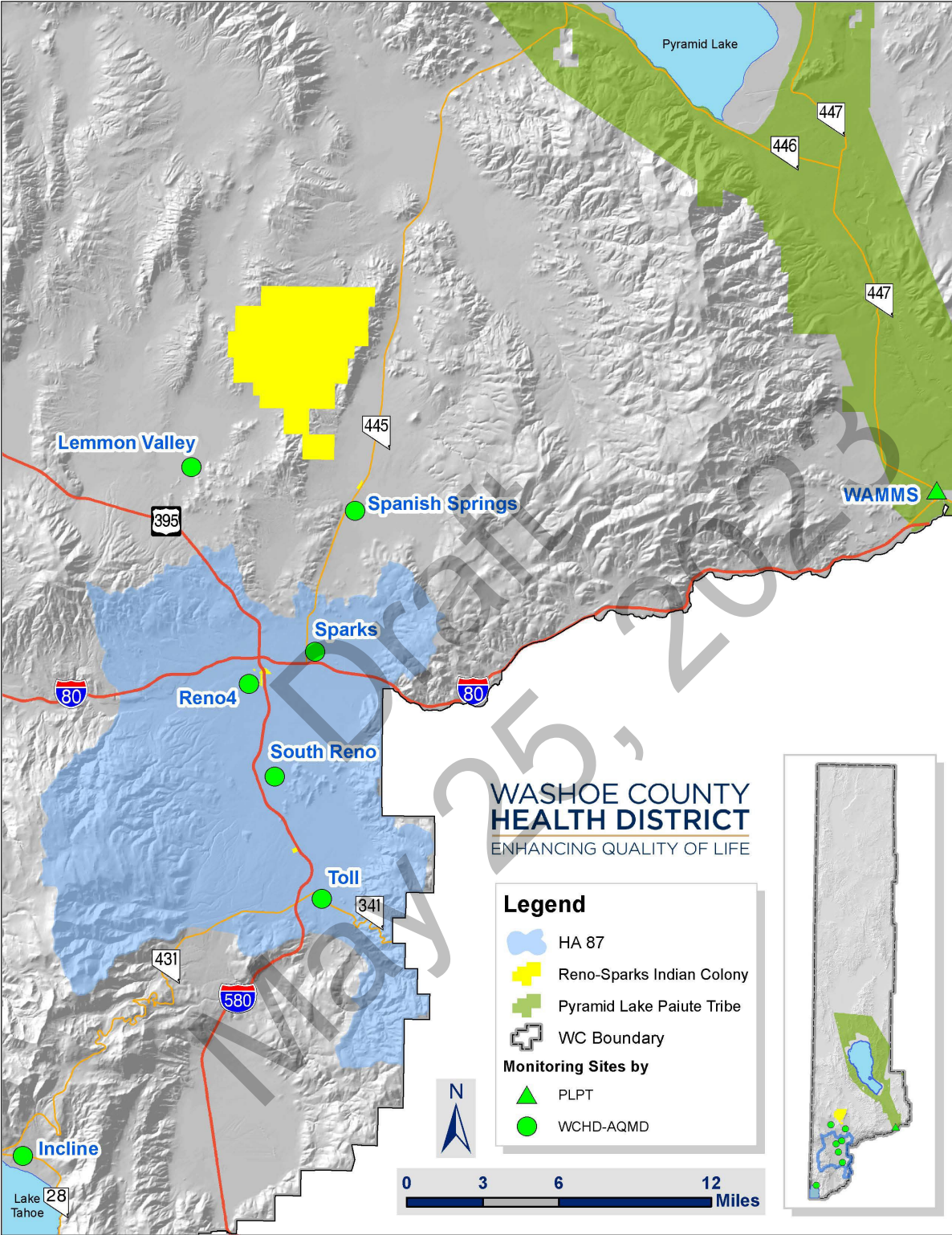
Pyramid Lake Paiute Tribe

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Air Quality Specialist
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<https://plpt.nsn.us/>

Table 13
Tribal Ambient Air Monitoring Sites and Parameters Monitored

| Network Site Site ID | O ₃ | CO | Trace CO | NO | NO ₂ | NO _x | Trace NO | NO _y -NO | NO _y | Trace SO ₂ | PM ₁₀ (manual) | PM ₁₀ (continuous) | PM _{2.5} (manual) | PM _{2.5} (continuous) | PM _{coarse} (manual) | PM _{coarse} (continuous) | PM _{2.5} Speciation | Meteorology |
|------------------------------|----------------|----|----------|----|-----------------|-----------------|----------|---------------------|-----------------|-----------------------|---------------------------|-------------------------------|----------------------------|--------------------------------|-------------------------------|-----------------------------------|------------------------------|-------------|
| RSIC | | | | | | | | | | | | | | | | | | |
| Hungry Valley TT-653-2010 | | | | | | | | | | | | | | | | | | |
| PLPT | | | | | | | | | | | | | | | | | | |
| WADSAQ T-561-1026 | | | | | | | | | | | | ✓ | | | | | | ✓ |

Figure 3
Tribal Monitoring Network



Washoe County Health District Detailed Site Information

Incline

This site is located in a Washoe County office building at 855 Alder Avenue and is outside HA 87. It is located in a residential/commercial neighborhood. The AQMD had monitored PM₁₀ (1993-2002) and CO (1993-2002) and currently monitors for O₃. This site was temporarily closed from December 2005 to May 2008 for remodeling. By multi-agency cooperative agreement, the California Air Resources Board (CARB) monitored PM_{2.5} (1999-2002) and NO₂ (1999-2002). Since May 2008, this site only monitors for O₃.

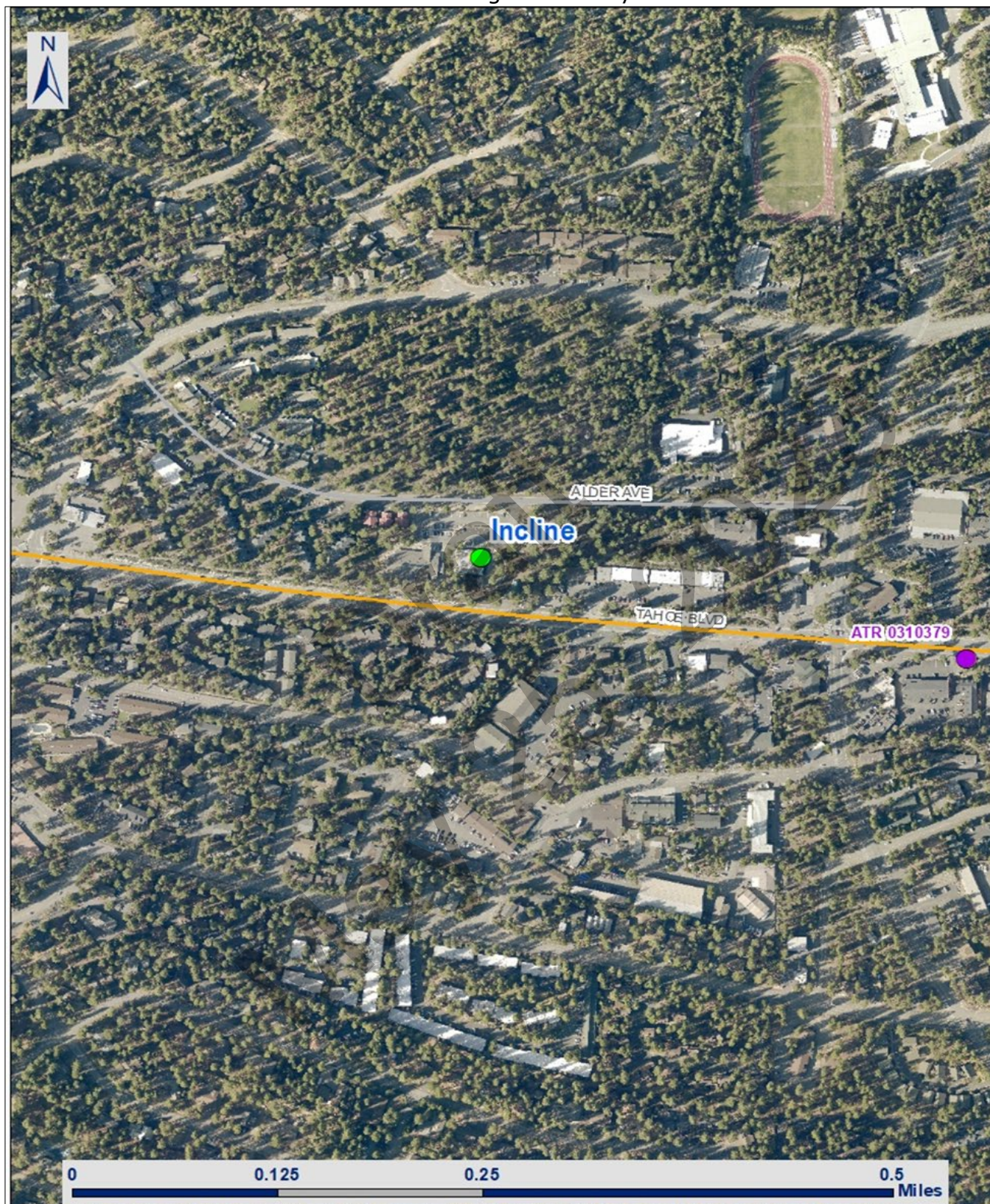
| | |
|-----------------------------------|--|
| Site Name: | Incline |
| AQS ID: | 32-031-2002 |
| Geographical coordinates: | 39° 15.025'N, 119° 57.404'W |
| Elevation: | 6,437' |
| Assessor's Parcel Number: | 132-020-23 |
| Owner: | Washoe County |
| Location: | Inside northeast corner of Washoe County office building. |
| Street address: | 855 Alder Avenue Incline Village, NV 89451 |
| County: | Washoe |
| Distance to road: | 57 meters to Tahoe Boulevard |
| Traffic count:⁸ | 9,333 AADT (2019-2021) (NDOT ATR 0310379 – SR28 (Tahoe Blvd), 450 feet south of Village Blvd) |
| Groundcover: | Paved / Vegetated |
| Representative area: | Reno-Sparks MSA |
| Hydrographic area: | 90 |

Figure 4
Incline Monitoring Station



⁸ [Nevada Department of Transportation Traffic Information](#)

Figure 5
Incline Monitoring Site Vicinity Aerial



Incline (continued)

| | |
|---|--|
| Pollutant, POC | O ₃ , 1 |
| Primary / QA Collocated / Other | n/a |
| Parameter code | 44201 |
| Basic monitoring objective(s) | NAAQS comparison |
| Site type(s) | Highest Concentration |
| Monitor type | SLAMS |
| Network affiliation(s) | n/a |
| Instrument manufacturer / model | TAPI T400 |
| Method code | 087 |
| FRM / FEM / ARM / Other | FEM |
| Collecting Agency | WCHD - AQMD |
| Analytical Lab | n/a |
| Reporting Agency | WCHD - AQMD |
| Spatial scale | Neighborhood |
| Monitoring start date | June 1993 |
| Current sampling frequency | Continuous |
| Required sampling frequency | n/a |
| Sampling season | 01/01 - 12/31 |
| Probe height | 5.3 meters |
| Distance from supporting structure | 2.0 meters |
| Distance from obstructions on roof | n/a |
| Distance from obstructions not on roof | None |
| Horizontal distance from trees | 10.8 meters ¹ |
| Vertical height of tree above probe | 8.7 meters |
| Distance to furnace or incinerator flue | 6.3 meters ² |
| Distance between collocated monitors | n/a |
| For low volume PM instruments, is any PM instrument within 1 meter? | n/a |
| For high volume PM instruments, is any PM instrument within 2 meters? | n/a |
| Unrestricted airflow | 360 degrees |
| Probe material | Teflon |
| Residence time | 8 seconds |
| Proposed modifications within the next 18 months? | None |
| Is it suitable for comparison against the annual PM _{2.5} NAAQS? | n/a |
| Frequency of flow rate verification for manual samplers (PM) | n/a |
| Frequency of flow rate verification for automated analyzers (PM) | n/a |
| Frequency of one-point QC check (gaseous) | Bi-weekly (3 point) |
| Date of annual performance evaluation (gaseous & meteorological) | 03/10/22 06/07/22 09/07/22 11/08/22 |
| Date of two semi-annual flow rate audits (PM) | n/a |

¹At least 90 percent of the monitoring path is at least 10 meters from the drip line of the trees.

²At least 90 percent of the monitoring path is away from the furnace flue.

Lemmon Valley

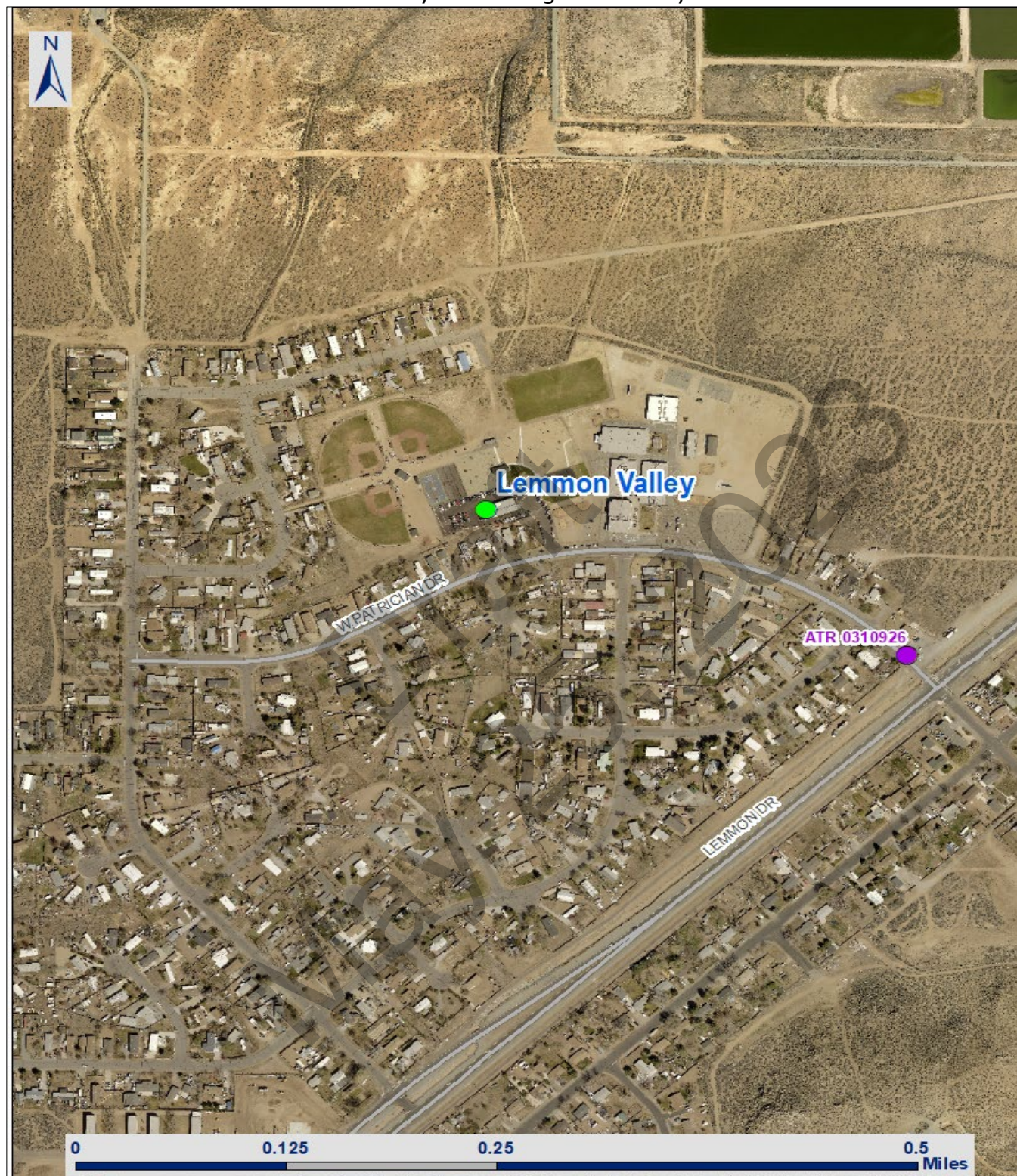
Located at the Boys and Girls Club at 325 Patrician Drive, this site is outside HA 87. It is in a transitional area among residences, parks, and open fields.

| | |
|----------------------------------|---|
| Site name: | Lemmon Valley |
| AQS ID: | 32-031-2009 |
| Geographical coordinates: | 39° 38.716'N, 119° 50.401'W |
| Elevation: | 4,925' |
| Assessor's Parcel Number | 080-461-31 |
| Owner: | Washoe County |
| Location: | Inside northwest corner of Boys and Girls Club. |
| Street address: | 325 W. Patrician Drive Reno, NV 89506 |
| County: | Washoe |
| Distance to road: | 59 meters to Patrician Drive. |
| Traffic count: | 713 AADT (2019-2021) (NDOT ATR 0310926 - Patrician Drive, 150 feet west of Lemmon Drive) |
| Groundcover: | Paved / Vegetated |
| Representative area: | Reno-Sparks MSA |
| Hydrographic area: | 92B |

Figure 6
Lemmon Valley Monitoring Station



Figure 7
Lemmon Valley Monitoring Site Vicinity Aerial



Lemmon Valley (continued)

| | |
|---|--|
| Pollutant, POC | O ₃ , 1 |
| Primary / QA Collocated / Other | Primary |
| Parameter code | 44201 |
| Basic monitoring objective(s) | NAAQS comparison |
| Site type(s) | Population Exposure |
| Monitor type | SLAMS |
| Network affiliation(s) | n/a |
| Instrument manufacturer / model | TAPI T400 |
| Method code | 087 |
| FRM / FEM / ARM / Other | FEM |
| Collecting Agency | WCHD - AQMD |
| Analytical Lab | n/a |
| Reporting Agency | WCHD - AQMD |
| Spatial scale | Urban |
| Monitoring start date | January 1987 |
| Current sampling frequency | Continuous |
| Required sampling frequency | n/a |
| Sampling season | 01/01 - 12/31 |
| Probe height | 5.5 meters |
| Distance from supporting structure | 2.0 meters |
| Distance from obstructions on roof | n/a |
| Distance from obstructions not on roof | None |
| Horizontal distance from trees | 21 meters |
| Vertical height of tree above probe | 9.5 meters |
| Distance to furnace or incinerator flue | 9.1 meters ¹ |
| Distance between collocated monitors | n/a |
| For low volume PM instruments, is any PM instrument within 1 meter? | n/a |
| For high volume PM instruments, is any PM instrument within 2 meters? | n/a |
| Unrestricted airflow | 360 degrees |
| Probe material | Teflon |
| Residence time | 7 seconds |
| Proposed modifications within the next 18 months? | None |
| Is it suitable for comparison against the annual PM _{2.5} NAAQS? | n/a |
| Frequency of flow rate verification for manual samplers (PM) | n/a |
| Frequency of flow rate verification for automated analyzers (PM) | n/a |
| Frequency of one-point QC check (gaseous) | Bi-weekly (3 point) |
| Date of annual performance evaluation (gaseous & meteorological) | 03/08/22 06/09/22 09/08/22 11/03/22 |
| Date of two semi-annual flow rate audits (PM) | n/a |

¹At least 90 percent of the monitoring path is away from the furnace flue.

Reno4

Located at Libby C. Booth Elementary School at 1450 Stewart Street in Reno, this site is near the northern edge of the playground and bus loading/unloading zone. Reno4 began monitoring in January 2020 as a relocation of the Reno3 site. Reno4 is an NCore site and monitors for O₃, PM₁₀, PM_{2.5}, PM_{coarse}, Trace CO, Trace SO₂, NO_x, and Trace NO_y. Meteorological parameters including ambient temperature, relative humidity, wind speed, and wind direction are also monitored. This site is also part of EPA's national Speciation Trends Network (STN).

| | |
|----------------------------------|---|
| Site name: | Reno4 |
| AQS ID: | 32-031-0031 |
| Geographical coordinates: | 39°31.316'N, 119°47.724'W |
| Elevation: | 4,461' |
| Assessor's Parcel Number: | 013-042-01 |
| Owner: | Washoe County School District Board |
| Location: | North edge of Libby Booth Elementary School property |
| Street address: | 1260-A Stewart St. Reno NV 89502 |
| County: | Washoe |
| Distance to road: | 10 meters to Stewart St. and 150 meters to Yori Ave. |
| Traffic count: | 976 AADT (2019-2021) (NDOT ATR 0310886 - Yori Ave, 165 feet north of Stewart St.) ≤900 Approximate AADT (NDOT Estimate - Stewart Street) |
| Groundcover: | Decomposed Granite |
| Representative area: | Reno-Sparks MSA |
| Hydrographic area: | 87 |

Figure 8
Reno4 Monitoring Station



Figure 9
Reno4 Monitoring Site Vicinity Aerial



Reno4 (continued)

| | | | | |
|---|--|--|--|--|
| Pollutant, POC | PM ₁₀ , 2 | PM _{2.5} , 2 | PM _{10-2.5} , 2 | PM _{2.5} Speciation, 5 |
| Primary / QA Collocated / Other | Primary | Primary | Primary | Primary |
| Parameter code | 81102 & 85101 | 88101 | 86101 | 88502 |
| Basic monitoring objective(s) | NAAQS comparison | NAAQS comparison | Research Support | Research Support |
| Site type(s) | Population Exposure | Population Exposure | n/a | Population Exposure |
| Monitor type | SLAMS | SLAMS | SLAMS | SLAMS |
| Network affiliation(s) | NCore | NCore | NCore | STN, NCore |
| Instrument manufacturer / model | Met One BAM 1020 | Met One BAM 1020 | Met One BAM 1020 Coarse Pair | Met One SASS; URG 3000N |
| Method code | 122 | 170 | 185 | SASS: 810 URG: 870 |
| FRM / FEM / ARM / Other | FEM | FEM | FEM | Other |
| Collecting Agency | WCHD - AQMD | WCHD - AQMD | WCHD - AQMD | WCHD - AQMD |
| Analytical Lab | n/a | n/a | n/a | Wood |
| Reporting Agency | WCHD - AQMD | WCHD - AQMD | WCHD - AQMD | UC Davis |
| Spatial scale | Neighborhood | Neighborhood | Neighborhood | Neighborhood |
| Monitoring start date | January 2020 | January 2020 | January 2020 | January 2020 |
| Current sampling frequency | Continuous | Continuous | Continuous | 1:3 |
| Required sampling frequency | n/a | n/a | n/a | 1:3 |
| Sampling season | 01/01 - 12/31 | 01/01 - 12/31 | 01/01 - 12/31 | 01/01 - 12/31 |
| Probe height | 5.2 meters | 5.1 meters | 5.1 meters | SASS: 4.9 meters URG: 5.1 meters |
| Distance from supporting structure | 2.2 meters | 2.2 meters | 2.2 meters | SASS: 1.8 meters URG: 2.1 meters |
| Distance from obstructions on roof | n/a | n/a | n/a | n/a |
| Distance from obstructions not on roof | None | None | None | None |
| Horizontal distance from trees | 42.0 meters | 43.2 meters | 42.0 meters | SASS: 44.7 meters URG: 46.0 meters |
| Vertical height of tree above probe | 9.8 meters | 9.9 meters | 9.9 meters | SASS: 10.1 meters URG: 9.9 meters |
| Distance to furnace or incinerator flue | n/a | n/a | n/a | n/a |
| Distance between collocated monitors | n/a | 1.2 meters | n/a | n/a |
| For low volume PM instruments, is any PM instrument within 1 meter? | No | No | No | No |
| For high volume PM instruments, is any PM instrument within 2 meters? | n/a | n/a | n/a | n/a |
| Unrestricted airflow | 360 degrees | 360 degrees | 360 degrees | 360 degrees |
| Probe material | n/a | n/a | n/a | n/a |
| Residence time | n/a | n/a | n/a | n/a |
| Proposed modifications within the next 18 months? | None | None | None | None |
| Is it suitable for comparison against the annual PM _{2.5} NAAQS? | n/a | Yes | n/a | No |
| Frequency of flow rate verification for manual samplers (PM) | n/a | n/a | n/a | Monthly verifications and quarterly audits |
| Frequency of flow rate verification for automated analyzers (PM) | Bi-weekly verifications and quarterly audits | Bi-weekly verifications and quarterly audits | Bi-weekly verifications and quarterly audits | n/a |
| Frequency of one-point QC check (gaseous) | n/a | n/a | n/a | n/a |
| Date of annual performance evaluation (gaseous & meteorological) | n/a | n/a | n/a | n/a |
| Date of two semi-annual flow rate audits (PM) | 03/03/22 06/15/22 09/07/22 12/13/22 | 03/03/22 06/15/22 09/07/22 12/13/22 | 03/03/22 06/15/22 09/07/22 12/13/22 | 03/16/22 06/24/22 09/07/22 11/02/22 |

Reno4 (continued)

| | | | | |
|---|--|--|--|--|
| Pollutant, POC | PM ₁₀ , 1 | PM _{2.5} , 1 | PM _{10-2.5} , 1 | Trace CO, 1 |
| Primary / QA Collocated / Other | Other | QA Collocated | Other | n/a |
| Parameter code | 85101 | 88101 | 86101 | 42101 |
| Basic monitoring objective(s) | Research Support | NAAQS comparison | Research Support | NAAQS comparison |
| Site type(s) | n/a | Population Exposure | n/a | Highest Concentration |
| Monitor type | SLAMS | SLAMS | SLAMS | SLAMS |
| Network affiliation(s) | NCore | NCore | NCore | NCore |
| Instrument manufacturer / model | Met One E-SEQ | Met One E-SEQ | Met One E-SEQ | TAPI 300EU |
| Method code | 246 | 545 | 247 | 593 |
| FRM / FEM / ARM / Other | FRM | FRM | FRM | FRM |
| Collecting Agency | WCHD - AQMD | WCHD - AQMD | WCHD - AQMD | WCHD - AQMD |
| Analytical Lab | WCHD - AQMD | WCHD - AQMD | WCHD - AQMD | n/a |
| Reporting Agency | WCHD - AQMD | WCHD - AQMD | WCHD - AQMD | WCHD - AQMD |
| Spatial scale | Neighborhood | Neighborhood | Neighborhood | Neighborhood |
| Monitoring start date | January 2020 | January 2020 | January 2020 | January 2020 |
| Current sampling frequency | 1:3 | 1:3 | 1:3 | Continuous |
| Required sampling frequency | 1:3 | 1:3 | 1:3 | n/a |
| Sampling season | 01/01 - 12/31 | 01/01 - 12/31 | 01/01 - 12/31 | 01/01 - 12/31 |
| Probe height | 5.0 meters | 5.0 meters | 5.0 meters | 4.9 meters |
| Distance from supporting structure | 2.0 meters | 2.0 meters | 2.0 meters | 1.9 meters |
| Distance from obstructions on roof | n/a | n/a | n/a | n/a |
| Distance from obstructions not on roof | None | None | None | None |
| Horizontal distance from trees | 42.0 meters | 43.2 meters | 42.0 meters | 45.7 meters |
| Vertical height of tree above probe | 10 meters | 10 meters | 10 meters | 10.1 meters |
| Distance to furnace or incinerator flue | n/a | n/a | n/a | n/a |
| Distance between collocated monitors | n/a | 1.2 meters | n/a | n/a |
| For low volume PM instruments, is any PM instrument within 1 meter? | No | No | No | n/a |
| For high volume PM instruments, is any PM instrument within 2 meters? | n/a | n/a | n/a | n/a |
| Unrestricted airflow | 360 degrees | 360 degrees | 360 degrees | 360 degrees |
| Probe material | n/a | n/a | n/a | Teflon |
| Residence time | n/a | n/a | n/a | 6 seconds |
| Proposed modifications within the next 18 months? | None | None | None | None |
| Is it suitable for comparison against the annual PM _{2.5} NAAQS? | n/a | Yes | n/a | n/a |
| Frequency of flow rate verification for manual samplers (PM) | Monthly verifications and quarterly audits | Monthly verifications and quarterly audits | Monthly verifications and quarterly audits | n/a |
| Frequency of flow rate verification for automated analyzers (PM) | n/a | n/a | n/a | n/a |
| Frequency of one-point QC check (gaseous) | n/a | n/a | n/a | Weekly |
| Date of annual performance evaluation (gaseous & meteorological) | n/a | n/a | n/a | 03/03/22 06/14/22 09/14/22 11/10/22 |
| Date of two semi-annual flow rate audits (PM) | 03/16/22 06/15/22 09/07/22 11/02/22 | 03/16/22 06/15/22 09/07/22 11/02/22 | 03/16/22 06/15/22 09/07/22 11/02/22 | n/a |

Reno4 (continued)

| | | | | |
|---|--|--|--|--|
| Pollutant, POC | O ₃ , 1 | NO, 1 | NO ₂ , 1 | NO _x , 1 |
| Primary / QA Collocated / Other | n/a | Primary | Primary | Primary |
| Parameter code | 44201 | 42601 | 42602 | 42603 |
| Basic monitoring objective(s) | NAAQS comparison | Research Support | NAAQS comparison | Research Support |
| Site type(s) | Population Exposure | n/a | Highest Concentration | n/a |
| Monitor type | SLAMS | SLAMS | SLAMS | SLAMS |
| Network affiliation(s) | NCore | NCore | NCore | NCore |
| Instrument manufacturer / model | TAPI T400 | TAPI 200EU | TAPI 200EU | TAPI 200EU |
| Method code | 087 | 099 | 099 | 099 |
| FRM / FEM / ARM / Other | FEM | FRM | FRM | FRM |
| Collecting Agency | WCHD - AQMD | WCHD - AQMD | WCHD - AQMD | WCHD - AQMD |
| Analytical Lab | n/a | n/a | n/a | n/a |
| Reporting Agency | WCHD - AQMD | WCHD - AQMD | WCHD - AQMD | WCHD - AQMD |
| Spatial scale | Neighborhood | Neighborhood | Neighborhood | Neighborhood |
| Monitoring start date | January 2020 | January 2020 | January 2020 | January 2020 |
| Current sampling frequency | Continuous | Continuous | Continuous | Continuous |
| Required sampling frequency | n/a | n/a | n/a | n/a |
| Sampling season | 01/01 - 12/31 | 01/01 - 12/31 | 01/01 - 12/31 | 01/01 - 12/31 |
| Probe height | 5.1 meters | 5.1 meters | 5.1 meters | 5.1 meters |
| Distance from supporting structure | 2.1 meters | 2.1 meters | 2.1 meters | 2.1 meters |
| Distance from obstructions on roof | n/a | n/a | n/a | n/a |
| Distance from obstructions not on roof | None | None | None | None |
| Horizontal distance from trees | 45.7 meters | 46.9 meters | 46.9 meters | 46.9 meters |
| Vertical height of tree above probe | 9.9 meters | 9.9 meters | 9.9 meters | 9.9 meters |
| Distance to furnace or incinerator flue | n/a | n/a | n/a | n/a |
| Distance between collocated monitors | n/a | n/a | n/a | n/a |
| For low volume PM instruments, is any PM instrument within 1 meter? | n/a | n/a | n/a | n/a |
| For high volume PM instruments, is any PM instrument within 2 meters? | n/a | n/a | n/a | n/a |
| Unrestricted airflow | 360 degrees | 360 degrees | 360 degrees | 360 degrees |
| Probe material | Teflon | Teflon | Teflon | Teflon |
| Residence time | 6 seconds | 5 seconds | 5 seconds | 5 seconds |
| Proposed modifications within the next 18 months? | None | None | None | None |
| Is it suitable for comparison against the annual PM _{2.5} NAAQS? | n/a | n/a | n/a | n/a |
| Frequency of flow rate verification for manual samplers (PM) | n/a | n/a | n/a | n/a |
| Frequency of flow rate verification for automated analyzers (PM) | n/a | n/a | n/a | n/a |
| Frequency of one-point QC check (gaseous) | Weekly | Weekly (4 point w/ GPT) | Weekly (4 point w/ GPT) | Weekly (4 point w/ GPT) |
| Date of annual performance evaluation (gaseous & meteorological) | 03/03/22 06/14/22 09/14/22 11/10/22 | 03/04/22 06/15/22 09/14/22 11/16/22 | 03/04/22 06/15/22 09/14/22 11/16/22 | 03/04/22 06/15/22 09/14/22 11/16/22 |
| Date of two semi-annual flow rate audits (PM) | n/a | n/a | n/a | n/a |

Reno4 (continued)

| | | | | |
|---|--|--|--|--|
| Pollutant, POC | Trace NO _x , 1 | NO _x -NO _x , 1 | NO _x , 1 | Trace SO ₂ , 1 |
| Primary / QA Collocated / Other | n/a | n/a | n/a | n/a |
| Parameter code | 42601 | 42612 | 42600 | 42401 |
| Basic monitoring objective(s) | Research Support | Research Support | Research Support | NAAQS comparison |
| Site type(s) | n/a | n/a | n/a | Highest Concentration |
| Monitor type | SLAMS | SLAMS | SLAMS | SLAMS |
| Network affiliation(s) | NCore | NCore | NCore | NCore |
| Instrument manufacturer / model | TAPI T200U with 501 | TAPI T200U with 501 | TAPI T200U with 501 | TAPI 100EU |
| Method code | 699 | 699 | 699 | 600 |
| FRM / FEM / ARM / Other | Other | Other | Other | FEM |
| Collecting Agency | WCHD - AQMD | WCHD - AQMD | WCHD - AQMD | WCHD - AQMD |
| Analytical Lab | n/a | n/a | n/a | n/a |
| Reporting Agency | WCHD - AQMD | WCHD - AQMD | WCHD - AQMD | WCHD - AQMD |
| Spatial scale | Neighborhood | Neighborhood | Neighborhood | Neighborhood |
| Monitoring start date | January 2020 | January 2020 | January 2020 | January 2020 |
| Current sampling frequency | Continuous | Continuous | Continuous | Continuous |
| Required sampling frequency | n/a | n/a | n/a | n/a |
| Sampling season | 01/01 - 12/31 | 01/01 - 12/31 | 01/01 - 12/31 | 01/01 - 12/31 |
| Probe height | 8.6 meters | 8.6 meters | 8.6 meters | 5.1 meters |
| Distance from supporting structure | 8.6 meters | 8.6 meters | 8.6 meters | 2.1 meters |
| Distance from obstructions on roof | n/a | n/a | n/a | n/a |
| Distance from obstructions not on roof | None | None | None | None |
| Horizontal distance from trees | 47.7 meters | 47.7 meters | 47.7 meters | 45.7 meters |
| Vertical height of tree above probe | 6.4 meters | 6.4 meters | 6.4 meters | 9.9 meters |
| Distance to furnace or incinerator flue | n/a | n/a | n/a | n/a |
| Distance between collocated monitors | n/a | n/a | n/a | n/a |
| For low volume PM instruments, is any PM instrument within 1 meter? | n/a | n/a | n/a | n/a |
| For high volume PM instruments, is any PM instrument within 2 meters? | n/a | n/a | n/a | n/a |
| Unrestricted airflow | 360 degrees | 360 degrees | 360 degrees | 360 degrees |
| Probe material | Teflon | Teflon | Teflon | Teflon |
| Residence time | 8 seconds | 8 seconds | 8 seconds | 6 seconds |
| Proposed modifications within the next 18 months? | None | None | None | None |
| Is it suitable for comparison against the annual PM _{2.5} NAAQS? | n/a | n/a | n/a | n/a |
| Frequency of flow rate verification for manual samplers (PM) | n/a | n/a | n/a | n/a |
| Frequency of flow rate verification for automated analyzers (PM) | n/a | n/a | n/a | n/a |
| Frequency of one-point QC check (gaseous) | Weekly (4 point w/ GPT) | Weekly (4 point w/ GPT) | Weekly (4 point w/ GPT) | Weekly |
| Date of annual performance evaluation (gaseous & meteorological) | 03/04/22 06/16/22 09/15/22 11/16/22 | 03/04/22 06/16/22 09/15/22 11/16/22 | 03/04/22 06/16/22 09/15/22 11/16/22 | 03/03/22 06/14/22 09/14/22 11/10/22 |
| Date of two semi-annual flow rate audits (PM) | n/a | n/a | n/a | n/a |

Reno4 (continued)

| Pollutant, POC | Wind Speed, 1 | Wind Direction, 1 | Ambient Temperature, 1 | Relative Humidity, 1 |
|---|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| Primary / QA Collocated / Other | n/a | n/a | n/a | n/a |
| Parameter code | 61101 & 61103 | 61102 & 61104 | 62101 | 62201 |
| Basic monitoring objective(s) | Research, Public Information | Research, Public Information | Research, Public Information | Research, Public Information |
| Site type(s) | n/a | n/a | n/a | n/a |
| Monitor type | SLAMS | SLAMS | SLAMS | SLAMS |
| Network affiliation(s) | NCore | NCore | NCore | NCore |
| Instrument manufacturer / model | Met One 50.5H | Met One 50.5H | Met One 063-1 | Met One 083E |
| Method code | 061 | 061 | 040 | 061 |
| FRM / FEM / ARM / Other | n/a | n/a | n/a | n/a |
| Collecting Agency | WCHD - AQMD | WCHD - AQMD | WCHD - AQMD | WCHD - AQMD |
| Analytical Lab | n/a | n/a | n/a | n/a |
| Reporting Agency | WCHD - AQMD | WCHD - AQMD | WCHD - AQMD | WCHD - AQMD |
| Spatial scale | Neighborhood | Neighborhood | Neighborhood | Neighborhood |
| Monitoring start date | January 2020 | January 2020 | January 2020 | January 2020 |
| Current sampling frequency | Continuous | Continuous | Continuous | Continuous |
| Required sampling frequency | n/a | n/a | n/a | n/a |
| Sampling season | 01/01 - 12/31 | 01/01 - 12/31 | 01/01 - 12/31 | 01/01 - 12/31 |
| Probe height | 9.7 meters | 9.7 meters | 9.7 meters | 9.7 meters |
| Distance from supporting structure | 9.7 meters | 9.7 meters | 9.7 meters | 9.7 meters |
| Distance from obstructions on roof | n/a | n/a | n/a | n/a |
| Distance from obstructions not on roof | None | None | None | None |
| Horizontal distance from trees | 47.7 meters | 47.7 meters | 47.7 meters | 47.7 meters |
| Vertical height of tree above probe | 5.3 meters | 5.3 meters | 5.3 meters | 5.3 meters |
| Distance to furnace or incinerator flue | n/a | n/a | n/a | n/a |
| Distance between collocated monitors | n/a | n/a | n/a | n/a |
| For low volume PM instruments, is any PM instrument within 1 meter? | n/a | n/a | n/a | n/a |
| For high volume PM instruments, is any PM instrument within 2 meters? | n/a | n/a | n/a | n/a |
| Unrestricted airflow | 360 degrees | 360 degrees | 360 degrees | 360 degrees |
| Probe material | n/a | n/a | n/a | n/a |
| Residence time | n/a | n/a | n/a | n/a |
| Proposed modifications within the next 18 months? | None | None | None | None |
| Is it suitable for comparison against the annual PM _{2.5} NAAQS? | n/a | n/a | n/a | n/a |
| Frequency of flow rate verification for manual samplers (PM) | n/a | n/a | n/a | n/a |
| Frequency of flow rate verification for automated analyzers (PM) | n/a | n/a | n/a | n/a |
| Frequency of one-point QC check (gaseous) | n/a | n/a | n/a | n/a |
| Date of annual performance evaluation (gaseous & meteorological) | 03/03/22 06/24/22 09/21/22 | 03/03/22 06/24/22 09/21/22 | 03/03/22 06/24/22 09/06/22 | 03/22/22 06/24/22 09/21/22 |
| Date of two semi-annual flow rate audits (PM) | n/a | n/a | n/a | n/a |

South Reno

Located on the NV Energy property at 4110 Delucchi Lane, this site is in a transitional environment between open fields and office buildings.

| | |
|----------------------------------|---|
| Site name: | South Reno |
| AQS ID: | 32-031-0020 |
| Geographical coordinates: | 39° 28.153'N, 119° 46.521'W |
| Elevation: | 4,449' |
| Assessor's Parcel Number: | 025-460-35 |
| Owner: | Sierra Pacific Power Co. |
| Location: | Northeast corner of NV Energy campus. |
| Street address: | 4110 Delucchi Lane Reno, NV 89502 |
| County: | Washoe |
| Distance to road: | 37 meters to Delucchi Lane. |
| Traffic count: | 4,883 AADT (2019-2021) (NDOT ATR 0310690 - Neil Road, 515 feet north of Delucchi Lane) |
| | 10,050 AADT (2019-2021) (NDOT ATR 0311159 - Airway Drive, south of McCarran Blvd.) |
| | ≤900 Approximate AADT (NDOT Estimate - Delucchi Lane) |
| Groundcover: | Gravel / Dirt / Vegetated |
| Representative area: | Reno-Sparks MSA |
| Hydrographic area: | 87 |

Figure 10
South Reno Monitoring Station



Figure 11
South Reno Monitoring Site Vicinity Aerial



South Reno (continued)

| | | | | |
|---|--|----------------------------------|----------------------------------|----------------------------------|
| Pollutant, POC | O ₃ , 1 | Wind Speed, 1 | Wind Direction, 1 | Ambient Temperature, 1 |
| Primary / QA Collocated / Other | n/a | n/a | n/a | n/a |
| Parameter code | 44201 | 61101 | 61102 | 62101 |
| Basic monitoring objective(s) | NAAQS comparison | Public Information | Public Information | Public Information |
| Site type(s) | Population Exposure | n/a | n/a | n/a |
| Monitor type | SLAMS | SLAMS | SLAMS | SLAMS |
| Network affiliation(s) | n/a | n/a | n/a | n/a |
| Instrument manufacturer / model | TAPI T400 | Met One 50.5H | Met One 50.5H | Met One 063-1 |
| Method code | 087 | 061 | 061 | 040 |
| FRM / FEM / ARM / Other | FEM | n/a | n/a | n/a |
| Collecting Agency | WCHD - AQMD | WCHD - AQMD | WCHD - AQMD | WCHD - AQMD |
| Analytical Lab | n/a | n/a | n/a | n/a |
| Reporting Agency | WCHD - AQMD | WCHD - AQMD | WCHD - AQMD | WCHD - AQMD |
| Spatial scale | Neighborhood | Neighborhood | Neighborhood | Neighborhood |
| Monitoring start date | January 1988 | January 2014 | January 2014 | January 2014 |
| Current sampling frequency | Continuous | Continuous | Continuous | Continuous |
| Required sampling frequency | n/a | n/a | n/a | n/a |
| Sampling season | 01/01 - 12/31 | 01/01 - 12/31 | 01/01 - 12/31 | 01/01 - 12/31 |
| Probe height | 4.0 meters | 10.0 meters | 10.0 meters | 5.0 meters |
| Distance from supporting structure | 1.2 meters | 10.0 meters | 10.0 meters | 5.0 meters |
| Distance from obstructions on roof | n/a | n/a | n/a | n/a |
| Distance from obstructions not on roof | None | None | None | None |
| Horizontal distance from trees | 27 meters | 27 meters | 27 meters | 27 meters |
| Vertical height of tree above probe | 13 meters | 3 meters | 3 meters | 12 meters |
| Distance to furnace or incinerator flue | n/a | n/a | n/a | n/a |
| Distance between collocated monitors | n/a | n/a | n/a | n/a |
| For low volume PM instruments, is any PM instrument within 1 meter? | n/a | n/a | n/a | n/a |
| For high volume PM instruments, is any PM instrument within 2 meters? | n/a | n/a | n/a | n/a |
| Unrestricted airflow | 360 degrees | 360 degrees | 360 degrees | 360 degrees |
| Probe material | Teflon | n/a | n/a | n/a |
| Residence time | 6 seconds | n/a | n/a | n/a |
| Proposed modifications within the next 18 months? | Discontinue monitoring | Discontinue monitoring | Discontinue monitoring | Discontinue monitoring |
| Is it suitable for comparison against the annual PM _{2.5} NAAQS? | n/a | n/a | n/a | n/a |
| Frequency of flow rate verification for manual samplers (PM) | n/a | n/a | n/a | n/a |
| Frequency of flow rate verification for automated analyzers (PM) | n/a | n/a | n/a | n/a |
| Frequency of one-point QC check (gaseous) | Bi-weekly (3 point) | n/a | n/a | n/a |
| Date of annual performance evaluation (gaseous & meteorological) | 03/09/22 06/08/22 09/02/22 11/04/22 | 03/09/22 06/23/22 09/28/22 | 03/09/22 06/23/22 09/28/22 | 03/03/22 06/23/22 09/28/22 |
| Date of two semi-annual flow rate audits (PM) | n/a | n/a | n/a | n/a |

Spanish Springs

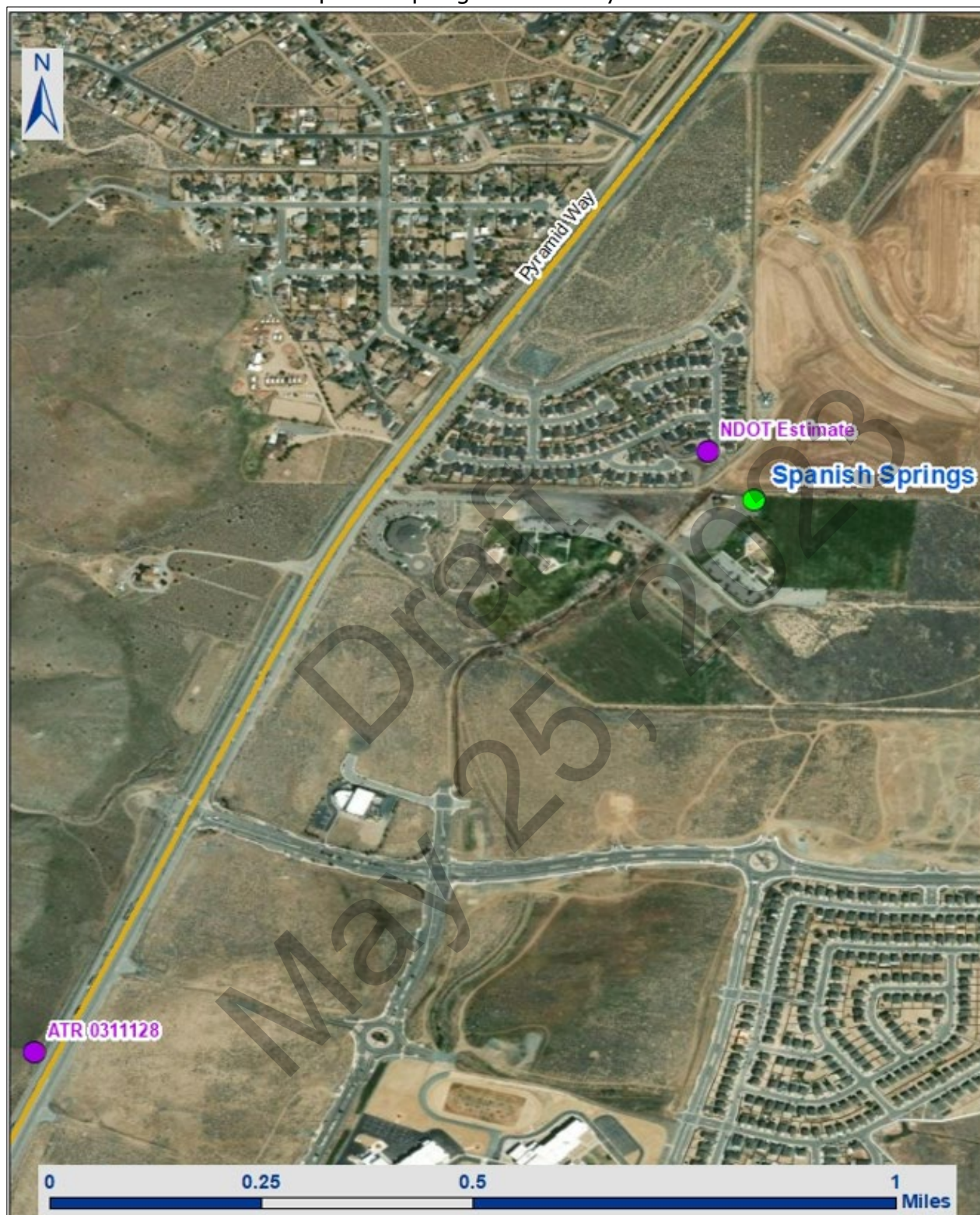
Located on the north side of Lazy 5 Regional Park in Spanish Springs, this site is located outside of HA 87. It is in a transitional area between open rangeland, residential areas, and a Washoe County Public Library. The Spanish Springs site began monitoring O_3 , PM_{10} , $PM_{2.5}$, and $PM_{10-2.5}$ as a SPM on January 1, 2017, and was converted to a SLAMS on July 1, 2018. It began monitoring wind speed, wind direction, and ambient temperature as a SPM on January 1, 2019, and was converted to a SLAMS on January 1, 2020.

| | |
|----------------------------------|--|
| Site name: | Spanish Springs |
| AQS ID: | 32-031-1007 |
| Geographical coordinates: | 39°37.287' N, 119°43.124' W |
| Elevation: | 4,485' |
| Assessor's Parcel Number: | 083-024-06 |
| Owner: | Washoe County |
| Location: | North side of Lazy 5 Regional Park. |
| Street address: | 7200 Pyramid Way Sparks, NV 89436 |
| County: | Washoe |
| Distance to road: | 460 meters to Pyramid Hwy and 99 meters to Aquene Court. |
| Traffic count: | 39,166 AADT (2019-2021) (NDOT ATR 0311128 – SR445 (Pyramid Hwy), 0.25 miles north of Sparks Blvd.) ≤900 Approximate AADT (NDOT Estimate – Aquene Court) |
| Groundcover: | Paved / Vegetated |
| Representative area: | Reno-Sparks MSA |
| Hydrographic area: | 85 |

Figure 12
Spanish Springs Monitoring Station



Figure 13
Spanish Springs Site Vicinity Aerial



Spanish Springs (continued)

| | | | | |
|---|--|--|--|--|
| Pollutant, POC | PM ₁₀ , 1 | PM _{2.5} , 1 | PM _{10-2.5} , 1 | O ₃ , 1 |
| Primary / QA Collocated / Other | Primary | Primary | Primary | n/a |
| Parameter code | 81102 & 85101 | 88101 | 86101 | 44201 |
| Basic monitoring objective(s) | NAAQS comparison | NAAQS comparison | Research Support | NAAQS comparison |
| Site type(s) | Population Exposure | Population Exposure | n/a | Population Exposure |
| Monitor type | SLAMS | SLAMS | SLAMS | SLAMS |
| Network affiliation(s) | n/a | n/a | n/a | n/a |
| Instrument manufacturer / model | Met One BAM 1020 | Met One BAM 1020 | Met One BAM 1020 Coarse Pair | TAPI T400 |
| Method code | 122 | 170 | 185 | 087 |
| FRM / FEM / ARM / Other | FEM | FEM | FEM | FEM |
| Collecting Agency | WCHD - AQMD | WCHD - AQMD | WCHD - AQMD | WCHD - AQMD |
| Analytical Lab | n/a | n/a | n/a | n/a |
| Reporting Agency | WCHD - AQMD | WCHD - AQMD | WCHD - AQMD | WCHD - AQMD |
| Spatial scale | Neighborhood | Neighborhood | Neighborhood | Neighborhood |
| Monitoring start date | January 2017 | January 2017 | January 2017 | January 2017 |
| Current sampling frequency | Continuous | Continuous | Continuous | Continuous |
| Required sampling frequency | n/a | n/a | n/a | n/a |
| Sampling season | 01/01 - 12/31 | 01/01 - 12/31 | 01/01 - 12/31 | 01/01 - 12/31 |
| Probe height | 5.0 meters | 5.1 meters | 5.1 meters | 4.0 meters |
| Distance from supporting structure | 2.1 meters | 2.2 meters | 2.2 meters | 1.1 meters |
| Distance from obstructions on roof | n/a | n/a | n/a | n/a |
| Distance from obstructions not on roof | n/a | n/a | n/a | n/a |
| Horizontal distance from trees | 33 meters | 34 meters | 33 meters | 35 meters |
| Vertical height of tree above probe | n/a | n/a | n/a | 1.0 meters |
| Distance to furnace or incinerator flue | n/a | n/a | n/a | n/a |
| Distance between collocated monitors | n/a | n/a | n/a | n/a |
| For low volume PM instruments, is any PM instrument within 1 meter? | No | No | No | n/a |
| For high volume PM instruments, is any PM instrument within 2 meters? | n/a | n/a | n/a | n/a |
| Unrestricted airflow | 360 degrees | 360 degrees | 360 degrees | 360 degrees |
| Probe material | n/a | n/a | n/a | Teflon |
| Residence time | n/a | n/a | n/a | 6 seconds |
| Proposed modifications within the next 18 months? | None | None | None | None |
| Is it suitable for comparison against the annual PM _{2.5} NAAQS? | n/a | Yes | n/a | n/a |
| Frequency of flow rate verification for manual samplers (PM) | n/a | n/a | n/a | n/a |
| Frequency of flow rate verification for automated analyzers (PM) | Bi-weekly and quarterly audits | Bi-weekly and quarterly audits | Bi-weekly and quarterly audits | n/a |
| Frequency of one-point QC check (gaseous) | n/a | n/a | n/a | Bi-weekly (3 point) |
| Date of annual performance evaluation (gaseous & meteorological) | n/a | n/a | n/a | 03/08/22 06/09/22 09/02/22 11/03/22 |
| Date of two semi-annual flow rate audits (PM) | 03/03/22 06/15/22 09/07/22 12/13/22 | 03/03/22 06/15/22 09/07/22 12/13/22 | 03/03/22 06/15/22 09/07/22 12/13/22 | n/a |

Spanish Springs (continued)

| Pollutant, POC | Wind Speed, 1 | Wind Direction, 1 | Ambient Temperature, 1 |
|---|----------------------------------|----------------------------------|----------------------------------|
| Primary / QA Collocated / Other | n/a | n/a | n/a |
| Parameter code | 61101 | 61102 | 62101 |
| Basic monitoring objective(s) | Public Information | Public Information | Public Information |
| Site type(s) | n/a | n/a | n/a |
| Monitor type | SLAMS | SLAMS | SLAMS |
| Network affiliation(s) | n/a | n/a | n/a |
| Instrument manufacturer / model | Met One 50.5H | Met One 50.5H | Met One 063-1 |
| Method code | 061 | 061 | 040 |
| FRM / FEM / ARM / Other | n/a | n/a | n/a |
| Collecting Agency | WCHD - AQMD | WCHD - AQMD | WCHD - AQMD |
| Analytical Lab | n/a | n/a | n/a |
| Reporting Agency | WCHD - AQMD | WCHD - AQMD | WCHD - AQMD |
| Spatial scale | Neighborhood | Neighborhood | Neighborhood |
| Monitoring start date | January 2019 | January 2019 | January 2019 |
| Current sampling frequency | Continuous | Continuous | Continuous |
| Required sampling frequency | n/a | n/a | n/a |
| Sampling season | 01/01 - 12/31 | 01/01 - 12/31 | 01/01 - 12/31 |
| Probe height | 10.0 meters | 10.0 meters | 5.0 meters |
| Distance from supporting structure | 10.0 meters | 10.0 meters | 5.0 meters |
| Distance from obstructions on roof | n/a | n/a | n/a |
| Distance from obstructions not on roof | None | None | None |
| Horizontal distance from trees | 32 meters | 32 meters | 32 meters |
| Vertical height of tree above probe | n/a | n/a | n/a |
| Distance to furnace or incinerator flue | n/a | n/a | n/a |
| Distance between collocated monitors | n/a | n/a | n/a |
| For low volume PM instruments, is any PM instrument within 1 meter? | n/a | n/a | n/a |
| For high volume PM instruments, is any PM instrument within 2 meters? | n/a | n/a | n/a |
| Unrestricted airflow | 360 degrees | 360 degrees | 360 degrees |
| Probe material | n/a | n/a | n/a |
| Residence time | n/a | n/a | n/a |
| Proposed modifications within the next 18 months? | None | None | None |
| Is it suitable for comparison against the annual PM _{2.5} NAAQS? | n/a | n/a | n/a |
| Frequency of flow rate verification for manual samplers (PM) | n/a | n/a | n/a |
| Frequency of flow rate verification for automated analyzers (PM) | n/a | n/a | n/a |
| Frequency of one-point QC check (gaseous) | n/a | n/a | n/a |
| Date of annual performance evaluation (gaseous & meteorological) | 03/03/22 04/14/22 09/21/22 | 03/03/22 04/14/22 09/21/22 | 03/02/22 06/17/22 09/21/22 |
| Date of two semi-annual flow rate audits (PM) | n/a | n/a | n/a |

Sparks

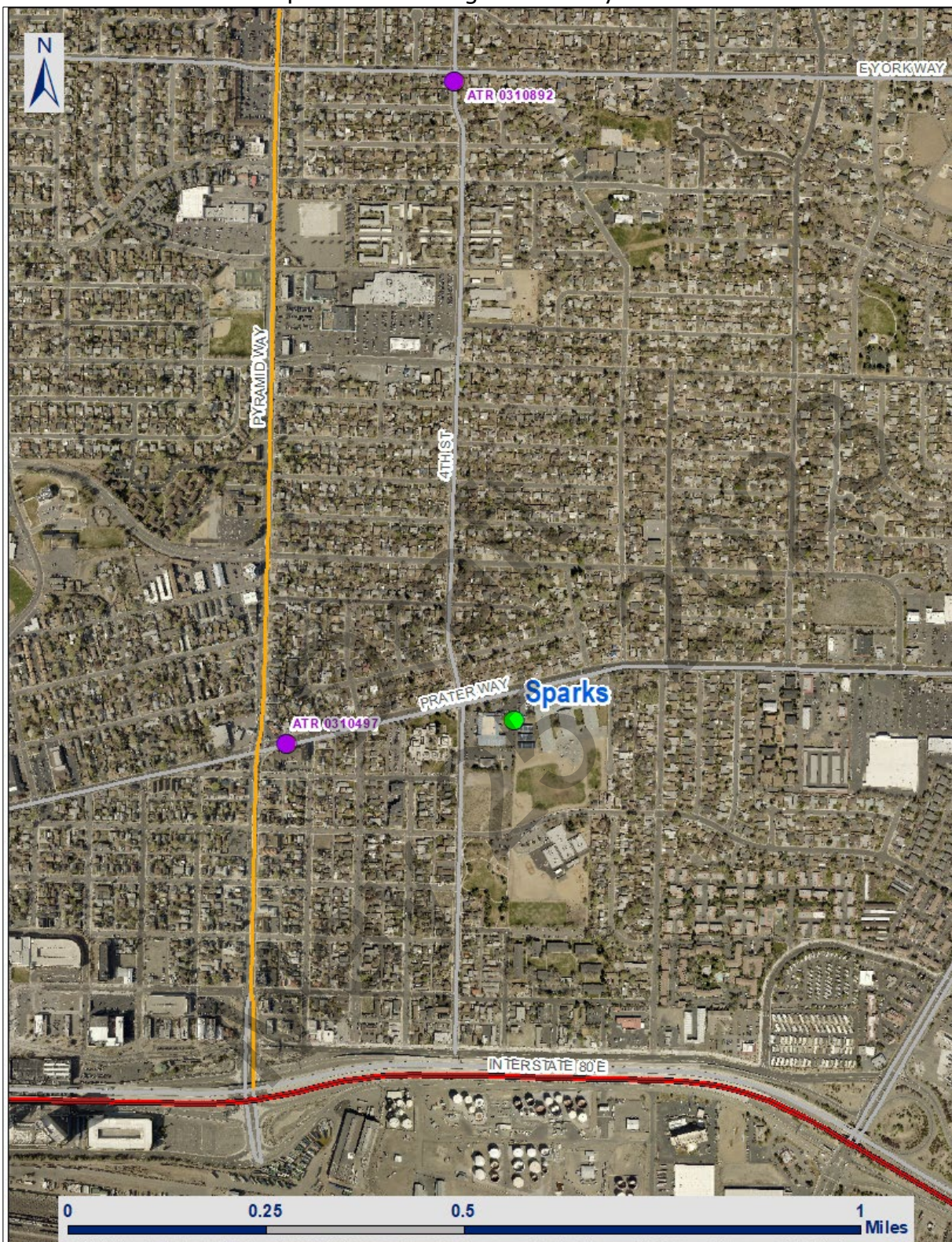
The Sparks site is located on US Postal Service property at 750 Fourth Street. The site is surrounded by commercial property, a residential neighborhood and is adjacent to Dilworth Middle School. In 2007 the Sparks site was moved approximately 55 meters north of its previous location, due to tree growth affecting siting criteria.

| | |
|----------------------------------|--|
| Site name: | Sparks |
| AQS ID: | 32-031-1005 |
| Geographical coordinates: | 39° 32.455'N, 119° 44.806'W |
| Elevation: | 4,409' |
| Assessor's Parcel Number: | 033-253-04 |
| Owner: | United States Postal Service |
| Location: | East end of US Postal Service back parking lot. |
| Street address: | 750 4 th Street Sparks, NV 89431 |
| County: | Washoe |
| Distance to road: | 50 meters to Prater Way and 103 meters to 4 th Street. |
| Traffic count: | 13,833 AADT (2019-2021) (NDOT ATR 0310497 - Prater Way, 100 feet east of Pyramid Way) 2,050 AADT (2019-2021) (NDOT ATR 0310892 - 4th Street, 123 feet north of Tasker Way & 129 feet south of York Way) |
| Groundcover: | Paved / Vegetated / Decomposed Granite |
| Representative area: | Reno-Sparks MSA |
| Hydrographic area: | 87 |

Figure 14
Sparks Monitoring Station



Figure 15
Sparks Monitoring Site Vicinity Aerial



Sparks (continued)

| | | | | |
|---|--|--|--|--|
| Pollutant, POC | PM ₁₀ , 1 | PM _{2.5} , 1 | PM _{10-2.5} , 1 | CO, 1 |
| Primary / QA Collocated / Other | Primary | Primary | Primary | n/a |
| Parameter code | 81102 & 85101 | 88101 | 86101 | 42101 |
| Basic monitoring objective(s) | NAAQS comparison | NAAQS comparison | Research Support | NAAQS comparison |
| Site type(s) | Population Exposure | Highest Concentration | n/a | Population Exposure |
| Monitor type | SLAMS | SLAMS | SLAMS | SLAMS |
| Network affiliation(s) | n/a | n/a | n/a | n/a |
| Instrument manufacturer / model | Met One BAM 1020 | Met One BAM 1020 | Met One BAM 1020 Coarse Pair | TAPI 300EU |
| Method code | 122 | 170 | 185 | 093 |
| FRM / FEM / ARM / Other | FEM | FEM | FEM | FRM |
| Collecting Agency | WCHD - AQMD | WCHD - AQMD | WCHD - AQMD | WCHD - AQMD |
| Analytical Lab | n/a | n/a | n/a | n/a |
| Reporting Agency | WCHD - AQMD | WCHD - AQMD | WCHD - AQMD | WCHD - AQMD |
| Spatial scale | Neighborhood | Neighborhood | Neighborhood | Neighborhood |
| Monitoring start date | April 1988 | January 2012 | July 2014 | January 1980 |
| Current sampling frequency | Continuous | Continuous | Continuous | Continuous |
| Required sampling frequency | n/a | n/a | n/a | n/a |
| Sampling season | 01/01 - 12/31 | 01/01 - 12/31 | 01/01 - 12/31 | 01/01 - 12/31 |
| Probe height | 5.1 meters | 5.0 meters | 5.0 meters | 4.6 meters |
| Distance from supporting structure | 2.1 meters | 2.1 meters | 2.1 meters | 1.7 meters |
| Distance from obstructions on roof | n/a | n/a | n/a | n/a |
| Distance from obstructions not on roof | None | None | None | None |
| Horizontal distance from trees | 26 meters | 26 meters | 26 meters | 27 meters |
| Vertical height of tree above probe | 10.9 meters | 11 meters | 11 meters | 11.4 meters |
| Distance to furnace or incinerator flue | n/a | n/a | n/a | n/a |
| Distance between collocated monitors | n/a | n/a | n/a | n/a |
| For low volume PM instruments, is any PM instrument within 1 meter? | No | No | No | n/a |
| For high volume PM instruments, is any PM instrument within 2 meters? | n/a | n/a | n/a | n/a |
| Unrestricted airflow | 360 degrees | 360 degrees | 360 degrees | 360 degrees |
| Probe material | n/a | n/a | n/a | Teflon |
| Residence time | n/a | n/a | n/a | 3 seconds |
| Proposed modifications within the next 18 months? | None | None | None | None |
| Is it suitable for comparison against the annual PM _{2.5} NAAQS? | n/a | Yes | n/a | n/a |
| Frequency of flow rate verification for manual samplers (PM) | n/a | n/a | n/a | n/a |
| Frequency of flow rate verification for automated analyzers (PM) | Bi-weekly and quarterly audits | Bi-weekly and quarterly audits | Bi-weekly and quarterly audits | n/a |
| Frequency of one-point QC check (gaseous) | n/a | n/a | n/a | Bi-weekly (3 point) |
| Date of annual performance evaluation (gaseous & meteorological) | n/a | n/a | n/a | 03/16/22 06/09/22 09/02/22 11/04/22 |
| Date of two semi-annual flow rate audits (PM) | 03/02/22 06/17/22 09/06/22 12/13/22 | 03/02/22 06/17/22 09/06/22 12/13/22 | 03/02/22 06/17/22 09/06/22 12/13/22 | n/a |

Sparks (continued)

| | | | | |
|---|--|----------------------------------|----------------------------------|----------------------------------|
| Pollutant, POC | O ₃ , 1 | Wind Speed, 1 | Wind Direction, 1 | Ambient Temperature, 1 |
| Primary / QA Collocated / Other | n/a | n/a | n/a | n/a |
| Parameter code | 44201 | 61101 | 61102 | 62101 |
| Basic monitoring objective(s) | NAAQS comparison | Public Information | Public Information | Public Information |
| Site type(s) | Population Exposure | n/a | n/a | n/a |
| Monitor type | SLAMS | SLAMS | SLAMS | SLAMS |
| Network affiliation(s) | n/a | n/a | n/a | n/a |
| Instrument manufacturer / model | TAPI T400 | Met One 50.5H | Met One 50.5H | Met One 063-1 |
| Method code | 087 | 061 | 061 | 040 |
| FRM / FEM / ARM / Other | FEM | n/a | n/a | n/a |
| Collecting Agency | WCHD - AQMD | WCHD - AQMD | WCHD - AQMD | WCHD - AQMD |
| Analytical Lab | n/a | n/a | n/a | n/a |
| Reporting Agency | WCHD - AQMD | WCHD - AQMD | WCHD - AQMD | WCHD - AQMD |
| Spatial scale | Neighborhood | Neighborhood | Neighborhood | Neighborhood |
| Monitoring start date | January 1979 | January 2014 | January 2014 | January 2014 |
| Current sampling frequency | Continuous | Continuous | Continuous | Continuous |
| Required sampling frequency | n/a | n/a | n/a | n/a |
| Sampling season | 01/01 - 12/31 | 01/01 - 12/31 | 01/01 - 12/31 | 01/01 - 12/31 |
| Probe height | 4.6 meters | 10.0 meters | 10.0 meters | 5.0 meters |
| Distance from supporting structure | 1.7 meters | 10.0 meters | 10.0 meters | 5.0 meters |
| Distance from obstructions on roof | n/a | n/a | n/a | n/a |
| Distance from obstructions not on roof | None | None | None | None |
| Horizontal distance from trees | 26 meters | 27 meters | 27 meters | 27 meters |
| Vertical height of tree above probe | 11.4 meters | 6 meters | 6 meters | 11 meters |
| Distance to furnace or incinerator flue | n/a | n/a | n/a | n/a |
| Distance between collocated monitors | n/a | n/a | n/a | n/a |
| For low volume PM instruments, is any PM instrument within 1 meter? | n/a | n/a | n/a | n/a |
| For high volume PM instruments, is any PM instrument within 2 meters? | n/a | n/a | n/a | n/a |
| Unrestricted airflow | 360 degrees | 360 degrees | 360 degrees | 360 degrees |
| Probe material | Teflon | n/a | n/a | n/a |
| Residence time | 3 seconds | n/a | n/a | n/a |
| Proposed modifications within the next 18 months? | None | None | None | None |
| Is it suitable for comparison against the annual PM _{2.5} NAAQS? | n/a | n/a | n/a | n/a |
| Frequency of flow rate verification for manual samplers (PM) | n/a | n/a | n/a | n/a |
| Frequency of flow rate verification for automated analyzers (PM) | n/a | n/a | n/a | n/a |
| Frequency of one-point QC check (gaseous) | Bi-weekly (3 point) | n/a | n/a | n/a |
| Date of annual performance evaluation (gaseous & meteorological) | 03/16/22 06/09/22 09/02/22 11/04/22 | 03/09/22 06/23/22 09/21/22 | 03/09/22 06/23/22 09/21/22 | 03/02/22 06/17/22 09/06/22 |
| Date of two semi-annual flow rate audits (PM) | n/a | n/a | n/a | n/a |

Toll

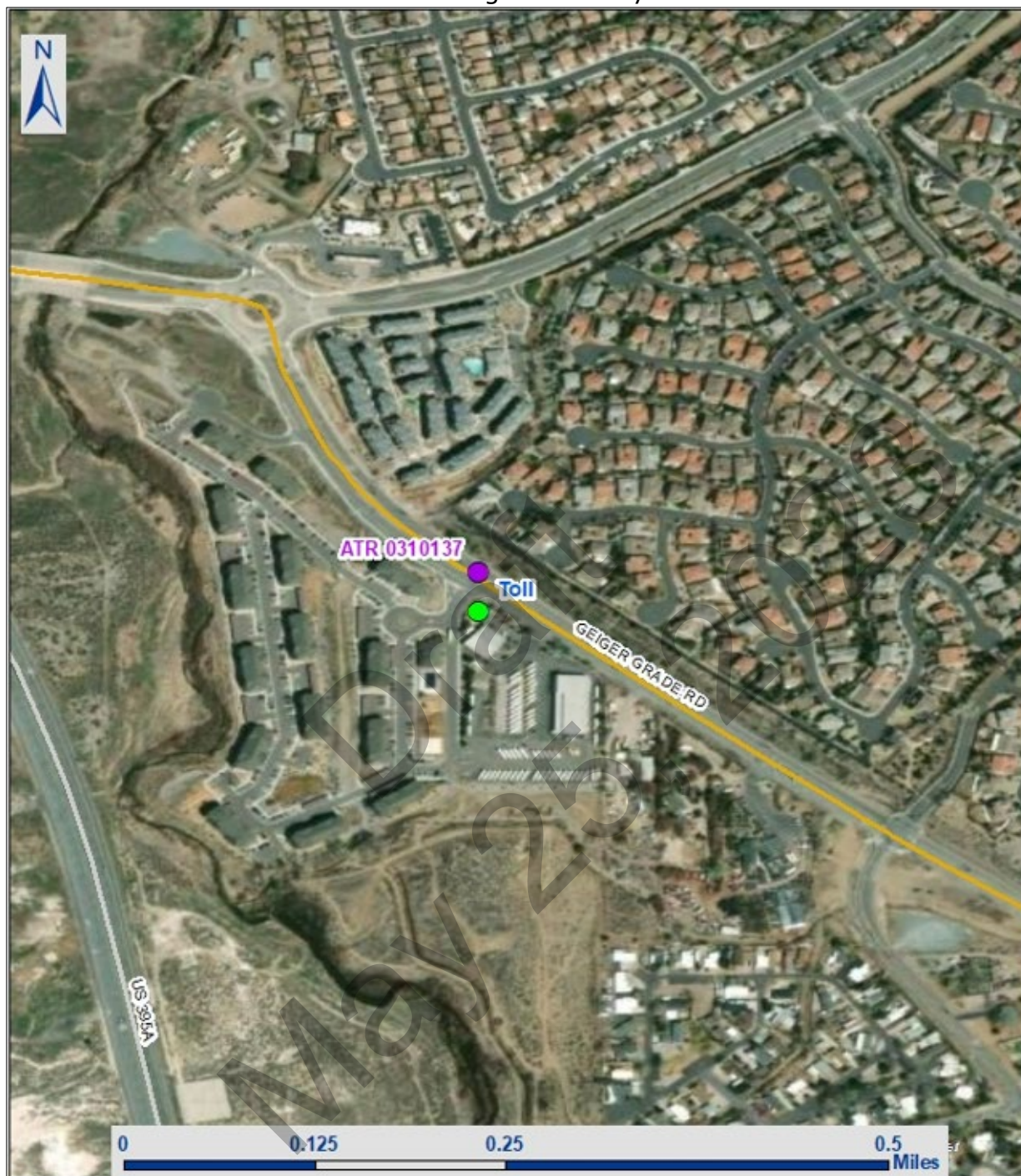
The Toll Road site is located at 684A State Route 341 (Geiger Grade), one-half mile east of US Highway 395. The site is near the edge of a residential neighborhood and adjacent to an area that is becoming commercially developed with an apartment complex and storage units. The Toll site began monitoring $PM_{2.5}$ and $PM_{10-2.5}$ on January 1, 2019 and was converted to a SLAMS on January 1, 2020..

| | |
|----------------------------------|--|
| Site name: | Toll |
| AQS ID: | 32-031-0025 |
| Geographical coordinates: | 39° 23.990'N, 119° 44.376'W |
| Elevation: | 4,570' |
| Assessor's Parcel Number: | 017-011-22 |
| Owner: | Washoe County School District Board |
| Location: | North end of Washoe County School District parking lot. |
| Street address: | 684A State Route 341 Reno, NV 89521 |
| County: | Washoe |
| Distance to road: | 21 meters to SR341 (Geiger Grade Road). |
| Traffic count: | 12,800 AADT (2019-2021) (NDOT ATR 0310137 - SR 341, 0.4 miles east of US 395) |
| Groundcover: | Paved parking lot |
| Representative area: | Reno-Sparks MSA |
| Hydrographic area: | 87 |

Figure 16
Toll Monitoring Station



Figure 17
Toll Monitoring Site Vicinity Aerial



Toll (continued)

| | | | | |
|---|--|--|--|--|
| Pollutant, POC | PM ₁₀ , 2 | PM _{2.5} , 1 | PM _{10-2.5} , 1 | O ₃ , 1 |
| Primary / QA Collocated / Other | Primary | Primary | Primary | n/a |
| Parameter code | 81102 & 85101 | 88101 | 86101 | 44201 |
| Basic monitoring objective(s) | NAAQS comparison | NAAQS comparison | Research Support | NAAQS comparison |
| Site type(s) | Highest Concentration | Population Exposure | n/a | Population Exposure |
| Monitor type | SLAMS | SLAMS | SLAMS | SLAMS |
| Network affiliation(s) | n/a | n/a | n/a | n/a |
| Instrument manufacturer / model | Met One BAM 1020 | Met One BAM 1020 | Met One BAM 1020 Coarse Pair | TAPI 400E |
| Method code | 122 | 170 | 185 | 087 |
| FRM / FEM / ARM / Other | FEM | FEM | FEM | FEM |
| Collecting Agency | WCHD - AQMD | WCHD - AQMD | WCHD - AQMD | WCHD - AQMD |
| Analytical Lab | n/a | n/a | n/a | n/a |
| Reporting Agency | WCHD - AQMD | WCHD - AQMD | WCHD - AQMD | WCHD - AQMD |
| Spatial scale | Neighborhood | Neighborhood | Neighborhood | Neighborhood |
| Monitoring start date | March 1996 | January 2019 | January 2019 | March 1996 |
| Current sampling frequency | Continuous | Continuous | Continuous | Continuous |
| Required sampling frequency | n/a | n/a | n/a | n/a |
| Sampling season | 01/01 - 12/31 | 01/01 - 12/31 | 01/01 - 12/31 | 01/01 - 12/31 |
| Probe height | 5.0 meters | 5.1 meters | 5.1 meters | 4.0 meters |
| Distance from supporting structure | 2.1 meters | 2.2 meters | 2.2 meters | 1.2 meters |
| Distance from obstructions on roof | n/a | n/a | n/a | n/a |
| Distance from obstructions not on roof | None | None | None | None |
| Horizontal distance from trees | 27 meters | 25 meters | 25 meters | 27 meters |
| Vertical height of tree above probe | 2.0 meters | 1.9 meters | 1.9 meters | 3.0 meters |
| Distance to furnace or incinerator flue | n/a | n/a | n/a | n/a |
| Distance between collocated monitors | n/a | n/a | n/a | n/a |
| For low volume PM instruments, is any PM instrument within 1 meter? | No | No | No | n/a |
| For high volume PM instruments, is any PM instrument within 2 meters? | n/a | n/a | n/a | n/a |
| Unrestricted airflow | 360 degrees | 360 degrees | 360 degrees | 360 degrees |
| Probe material | n/a | n/a | n/a | Teflon |
| Residence time | n/a | n/a | n/a | 6 seconds |
| Proposed modifications within the next 18 months? | None | None | None | None |
| Is it suitable for comparison against the annual PM _{2.5} NAAQS? | n/a | Yes | n/a | n/a |
| Frequency of flow rate verification for manual samplers (PM) | n/a | n/a | n/a | n/a |
| Frequency of flow rate verification for automated analyzers (PM) | Bi-weekly and quarterly audits | Bi-weekly and quarterly audits | Bi-weekly and quarterly audits | n/a |
| Frequency of one-point QC check (gaseous) | n/a | n/a | n/a | Bi-weekly (3 point) |
| Date of annual performance evaluation (gaseous & meteorological) | n/a | n/a | n/a | 03/09/21 06/04/21 09/01/21 11/18/21 |
| Date of two semi-annual flow rate audits (PM) | 03/24/21 06/01/21 08/09/21 11/01/21 | 03/24/21 06/01/21 08/09/21 11/01/21 | 03/24/21 06/01/21 08/09/21 11/01/21 | n/a |

Toll (continued)

| | | | |
|---|----------------------------------|----------------------------------|----------------------------------|
| Pollutant, POC | Wind Speed, 1 | Wind Direction, 1 | Ambient Temperature, 1 |
| Primary / QA Collocated / Other | n/a | n/a | n/a |
| Parameter code | 61101 | 61102 | 62101 |
| Basic monitoring objective(s) | Public Information | Public Information | Public Information |
| Site type(s) | n/a | n/a | n/a |
| Monitor type | SLAMS | SLAMS | SLAMS |
| Network affiliation(s) | n/a | n/a | n/a |
| Instrument manufacturer / model | Met One 50.5H | Met One 50.5H | Met One 063-1 |
| Method code | 061 | 061 | 040 |
| FRM / FEM / ARM / Other | n/a | n/a | n/a |
| Collecting Agency | WCHD - AQMD | WCHD - AQMD | WCHD - AQMD |
| Analytical Lab | n/a | n/a | n/a |
| Reporting Agency | WCHD - AQMD | WCHD - AQMD | WCHD - AQMD |
| Spatial scale | Neighborhood | Neighborhood | Neighborhood |
| Monitoring start date | January 2014 | January 2014 | January 2014 |
| Current sampling frequency | Continuous | Continuous | Continuous |
| Required sampling frequency | n/a | n/a | n/a |
| Sampling season | 01/01 - 12/31 | 01/01 - 12/31 | 01/01 - 12/31 |
| Probe height | 10.0 meters | 10.0 meters | 5.0 meters |
| Distance from supporting structure | 10.0 meters | 10.0 meters | 5.0 meters |
| Distance from obstructions on roof | n/a | n/a | n/a |
| Distance from obstructions not on roof | None | None | None |
| Horizontal distance from trees | 29 meters | 29 meters | 29 meters |
| Vertical height of tree above probe | n/a | n/a | 2.0 meters |
| Distance to furnace or incinerator flue | n/a | n/a | n/a |
| Distance between collocated monitors | n/a | n/a | n/a |
| For low volume PM instruments, is any PM instrument within 1 meter? | n/a | n/a | n/a |
| For high volume PM instruments, is any PM instrument within 2 meters? | n/a | n/a | n/a |
| Unrestricted airflow | 360 degrees | 360 degrees | 360 degrees |
| Probe material | n/a | n/a | n/a |
| Residence time | n/a | n/a | n/a |
| Proposed modifications within the next 18 months? | None | None | None |
| Is it suitable for comparison against the annual PM _{2.5} NAAQS? | n/a | n/a | n/a |
| Frequency of flow rate verification for manual samplers (PM) | n/a | n/a | n/a |
| Frequency of flow rate verification for automated analyzers (PM) | n/a | n/a | n/a |
| Frequency of one-point QC check (gaseous) | n/a | n/a | n/a |
| Date of annual performance evaluation (gaseous & meteorological) | 03/09/22 06/23/22 09/21/22 | 03/09/22 06/23/22 09/21/22 | 03/03/22 06/23/22 09/06/22 |
| Date of two semi-annual flow rate audits (PM) | n/a | n/a | n/a |

Draft
May 25, 2023

**WASHOE COUNTY
HEALTH DISTRICT**
ENHANCING QUALITY OF LIFE

Please contact Craig Petersen for
questions or comments at
cpetersen@washoecounty.gov

Appendix A
Public Inspection Plan

Draft
May 25, 2023

Public Inspection Plan

This monitoring network plan was available for public inspection from May 25 to June 25, 2023 at the AQMD website ([OurCleanAir.com](https://www.aqmd.ca.gov/our-clean-air)). A hardcopy of the plan was also available at the AQMD office. All comments received during this inspection period are outlined below.

Draft
May 25, 2023