



DEPARTMENT OF
ECOLOGY
State of Washington

2017 Ambient Air Monitoring Network Report

March 2018
Publication no. 18-02-011

Publication and Contact Information

This report is available on Ecology's website at
<https://fortress.wa.gov/ecy/publications/SummaryPages/1802011.html>

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2017 Ambient Air Monitoring Network Report

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Acronyms

| | |
|----------------------|--|
| AQS | EPA's Air Quality System database |
| BAM | Beta Attenuation Monitor |
| BCAA | Benton County Clean Air Agency |
| CBSA | core-based statistical area |
| CFR | Code of Federal Regulations |
| CO | carbon monoxide |
| CSA | combined statistical area |
| CSN | Chemical Speciation Network |
| DV | design value |
| Ecology | Washington State Department of Ecology |
| EPA | U.S. Environmental Protection Agency |
| FDMS | Filter Dynamic Measurement System |
| FEM | Federal Equivalent Method |
| FID | flame ionization detector |
| FRM | Federal Reference Method |
| IMPROVE | Interagency Monitoring of Protected Visual Environments |
| MSA | metropolitan statistical area |
| NAAQS | National Ambient Air Quality Standard |
| NATTS | National Air Toxics Trends Station |
| NCORE | national core multi-pollutant station |
| NO | nitric oxide |
| NO ₂ | nitrogen dioxide |
| NO _x | oxides of nitrogen |
| NO _y | total reactive oxides of nitrogen |
| NWCAA | Northwest Clean Air Agency |
| O ₃ | ozone |
| ORCAA | Olympic Region Clean Air Agency |
| Pb | lead |
| PM _{2.5} | particulate matter equal to or less than 2.5 microns in diameter |
| PM ₁₀ | particulate matter equal to or less than 10 microns in diameter |
| PM _{10-2.5} | particulate matter less than 10 microns in diameter and greater than 2.5 microns |
| PPB | parts per billion |
| PPM | parts per million |

Acronyms Continued

| | |
|-------------------|--|
| PQAO | Primary Quality Assurance Organization |
| PSCAA | Puget Sound Clean Air Agency |
| PSD | prevention of significant deterioration |
| QA | quality assurance |
| QA | quality control |
| SLAMS | State or Local Air Monitoring Station |
| SO ₂ | sulfur dioxide |
| SPMS | Special Purpose Monitoring Site |
| SRCAA | Spokane Region Clean Air Agency |
| SWCAA | Southwest Clean Air Agency |
| STN | Speciation Trends Network |
| TEOM | Tapered Element Oscillating Microbalance |
| TSP | total suspended particulate |
| µg/m ³ | micrograms per cubic meter |
| VOC | volatile organic compound |
| YRCAA | Yakima Region Clean Air Agency |

Executive Summary

Purpose of the report

Ecology reviews its ambient air quality monitoring network each year to ensure that it collects adequate, representative, and useful air quality data on which to base policy decisions. This report summarizes the results of the 2016 review. These results include:

- Identify modifications to Ecology’s ambient air monitoring network since the 2016 annual network report;
- Identify proposed modifications to the network for the upcoming year;
- Document Ecology’s ambient air quality monitoring needs, goals, and priorities.

Network Modification Plan

Findings and Recommendations for the 2016 Washington 5-Year Network Assessment

Overall, the Washington State network is efficient and effective at meeting the monitoring policy goal and objectives. Wholesale network changes are not necessary. Several specific, targeted changes will improve overall network effectiveness.

Any resource savings achieved through improvements in network efficiency should be reinvested to address monitoring gaps and high priority future monitoring requirements.

| | |
|----------------------------|---|
| CO: | No change |
| PM₁₀: | No change |
| PM_{2.5}: | Site relocations |
| Status: | Bellevue site relocation complete, Lake Forest Park and Aberdeen relocations delayed. |
| Ozone: | No change |
| Trace Level Gasses: | No change |
| Meteorological: | Install meteorological monitoring at the Yakima PM _{2.5} site. |
| Status: | Delayed due to higher priority work. |

Carbon monoxide, (CO, 42101)

Recommendations/Modifications: None.

Additional Monitors: None.

Ozone (O₃, 44201)

In 2019, Washington will be required to collect and report Photochemical Assessment Monitoring Station (PAMS) measurements at the Seattle Beacon Hill NCore site under CFR 40 Part 58, Appendix D, paragraph 3(a) located in a CBSA with a population of 1,000,000 or more, based on the latest available census figures.

Recommendations/Modifications: None.

Additional Monitors: None.

Nitrogen dioxide (NO₂, 42600, 42601, 42612)

Recommendations/Modifications: None.

Additional Monitors: None.

Sulfur dioxide (SO₂, 42401)

Recommendations/Proposed Modifications: None.

Additional Monitors: None.

Particulate matter 10 (PM₁₀, 81102)

Recommendations/Proposed Modifications: None.

Additional Monitors: None.

Thurston County Maintenance Area (Lacey PM_{2.5})

As detailed in the 2nd PM₁₀ Maintenance Plan for Thurston County Washington, ORCAA submitted the design value estimates for the Lacey-College Street nephelometer site (53670013). The 5-year PM₁₀ design value estimate for 2012-2016 was 43 µg/m³. The PM₁₀ design value estimate for 2014-2016 was 39 µg/m³.

Ecology provided daily 24-hour averages for the timeframe in question. The number of daily averages for the period was determined. The 5-year design value estimate was based on 1751 values and the 3-year design value estimate was based on 1026 values. The number of values was then compared to Table 6-1 contained in the PM₁₀ SIP Development Guidance document. For 1751 values, the Table prescribes using the sixth highest value in the data set. For 1026 values, the Table prescribes the third highest value in the data set.

Kent, Seattle, and Tacoma PM₁₀ Maintenance Areas

Three- and five-year design values for the Kent, Seattle, and Tacoma PM₁₀ Maintenance Areas were calculated using the table lookup method and the statistical fit method outlined in the LMP guidance document and the Kent, Seattle and Tacoma PM₁₀ Limited Maintenance Plan.

A 3-year PM₁₀ design value of 150 µg/m³ or below demonstrates continued compliance with the PM₁₀ NAAQS. A 5-year design value below 98 µg/m³ is required to qualify for the LMP approach. Design values calculated using the table lookup method fall within the range of uncertainty of the statistical fit method. Because they are the most conservative values, only the statistical fit values are presented here.

The PM_{2.5} FEM TEOM at James Street and Central Avenue (530332004) is used to assure continued compliance with the PM₁₀ NAAQS and to confirm continued eligibility for the LMP approach. The 2016 5-year design value is 59±9 µg/m³ and the 3-year design value is 59±12 µg/m³.

The PM_{2.5} FEM TEOM at Seattle-Duwamish (530330057) is used to assure continued compliance with the PM₁₀ NAAQS and to confirm continued eligibility for the LMP approach. The 2016 5-year design value is 57±6 µg/m³ and the 3-year design value is 58±6 µg/m³. Note: In 2014, Duwamish did not have a complete year of data. The design values for Duwamish were calculated using the guidelines for incomplete data outlined in Appendix B, page B-1, of the PM₁₀ SIP Development Guide.

The PM_{2.5} nephelometer at Tacoma-Alexander Avenue (530530031) is used to assure continued compliance with the PM₁₀ NAAQS and to confirm continued eligibility for the LMP approach. The 2016 5-year design value is 68±16 µg/m³ and the 3-year design value is 66±23 µg/m³.

Spokane County Maintenance Area (Spokane PM₁₀)

The Spokane County Maintenance area design value is based on FRM and FEM 24-hour PM₁₀ monitoring data from the Augusta Avenue site (530630021) in Spokane. The most recent five years of data is from 2012–2016 using a combination of FRM and FEM data from the Augusta site.

A 5-year PM₁₀ design value below 98 µg/m³ demonstrates the Spokane County Maintenance Area continues to qualify for the LMP approach. The 5-year PM₁₀ design value estimate for 2012–2016 is 84 µg/m³. The design value meets LMP qualification criteria.

The 3-year PM₁₀ design value at or below 1.0 demonstrates compliance with the PM₁₀ NAAQS. The design value is the number of 24-hour exceedances of 150 µg/m³, averaged over three years. The 2016 PM₁₀ design value for Augusta Avenue is 0. This design value is in attainment with the standard.

Particulate matter 2.5 (PM_{2.5}, 88101, 88502)

Recommendations/Modifications: ORCAA has delayed relocation of the Aberdeen site until 2018. Puget Sound Clean Air Agency (PSCAA) lost the lease at Lake Forest Park and the site

was discontinued on 2/29/2016. During the winter of 2014 and 2015, PSCAA performed a mobile nephelometer study in the Shoreline, Lake Forest Park, and Lynnwood communities. Mobile studies indicated some locations in Shoreline that would be able to replace the LFP monitor for calling burn bans in North King County. Discussions with other entities within Shoreline continue.

From December 1, 2016 through spring of 2017, Ecology ran correlated nephelometers at the new Bellevue-SE 12th St site (530330031) as well as the old Bellevue-Bellevue Way site (530330037) to evaluate the agreement between the two sites. The results of this study showed Bellevue-SE 12th St to be a suitable location for a replacement site. The SE 12th St site captured both the seasonal and diurnal variation observed at Bellevue Way, though its concentrations were an average of 8.5% lower than those at Bellevue Way.

Concentrations across Bellevue are consistently low overall. During the period 12/1/2016-4/10/2017, the maximum 24-hour concentration observed on either monitor was 11.8 µg/m³ at Bellevue Way on 1/15/2017. That same day, SE 12th St recorded a concentration of 10.6 µg/m³. Though concentrations at SE 12th St were slightly lower, these results indicate that the risk of unhealthy air days is minimal at both sites, and the difference between the two is negligible. See Appendix C for analysis of the Bellevue sites.

Additional Monitors: None.

Notes: Nephelometers are not EPA-equivalent method compliance instruments and design values are estimates.

Ecology uses the Washington Air Quality Advisory (WAQA) for reporting PM_{2.5} to inform and protect citizens of Washington. WAQA reporting is more protective of human health.

Ecology's goal is to keep 24-hour concentrations below 20µg/m.

Certain monitors in areas of Washington are not intended to be solely NAAQS based. Such monitors are used for protection of human health by issuing burn bans when needed during home heating season, making daily decisions for agricultural burning and health information reporting PM_{2.5}-like values.

Meteorological monitoring (Met. 61101, 61102, 62101)

Recommendations/Modifications: None.

Additional Monitors: The addition of meteorological monitoring is planned for Yakima during 2017/2018.

Lead (Pb 14129)

Recommendations/Modifications: Washington will continue to monitor for Pb at Seattle Beacon Hill.

Additional Monitors: None.

Trace gas monitoring

Recommendations/Modifications: None.

Additional Monitors: None.

NCore

Recommendations/Modifications: None.

Additional Monitors: None.

Other – contracted sites tribal/EPA

Recommendations/Modifications: None.

Additional Monitors: None.

Other – contracted sites USFS

Recommendations/Modifications: None.

Additional Monitors: None.

Other – contracted local clean air agencies

Recommendations/Modifications: None.

Additional Monitors: None.

Note: Ecology provides monitoring technical support for Anacortes and Cheeka Peak.

Background Information

EPA ambient air quality surveillance regulations (40 CFR Part 58) require states to establish air quality surveillance systems in their State Implementation Plans (SIPs). An air quality surveillance system consists of a network of State and Local Air Monitoring Stations (SLAMS). These stations measure ambient concentrations of those air pollutants for which 40 CFR Part 50 sets standards.

Monitoring network requirements

SLAMS must meet requirements of 40 CFR Part 58 contained in:

- Appendix A (Quality Assurance Requirements)
- Appendix C (Ambient Air Quality Monitoring Methodology)
- Appendix D (Network Design Criteria)
- Appendix E (Probe and Path Siting Criteria)

States determine if they conform to Appendices A and C in part through periodic systems and performance audits (per Section 2.4 of Appendix A). States conform to Appendices D and E by conducting an annual network review of their air quality surveillance systems (per 40 CFR 58.20(d)). The annual network review:

- Determines if an ambient air quality monitoring network is achieving its required air monitoring objectives;
- Identifies changes to the network needed to enable an organization to meet its objectives.

Using monitoring data

Ecology uses its air monitoring data to:

- Determine compliance with the National Ambient Air Quality Standards (NAAQS).
- Determine maximum pollutant concentrations.
- Forecast air quality.
- Evaluate the effectiveness of air pollution control programs.
- Evaluate the effects of air pollution on public health.
- Track the progress of SIPs.
- Support dispersion models.
- Determine air quality trends.
- Develop responsible and cost-effective pollution control strategies.
- Analyze pollution episodes.
- Assist with permitting work.

Introduction

40 CFR Part 58 contains EPA's ambient air quality surveillance regulations. Section 58.20 requires states to establish air quality surveillance systems in their SIPs. The air quality surveillance system consists of a network of designated SLAMS. These stations measure ambient concentrations of those air pollutants for which standards exist in 40 CFR Parts 50 and Part 58, Appendices A (Quality Assurance Requirements), C (Ambient Air Quality Monitoring Methodology), D (Network Design Criteria), and E (Probe and Path Siting Criteria). States determine compliance with Appendices A and C in part through periodic systems and performance audits (per Section 2.4 of Appendix A). States comply with Appendices D and E by conducting an annual network review of their air quality surveillance systems (per 40 CFR 58.20(d)).

The annual network review determines if the network achieved its required air monitoring objectives and if it should be modified (e.g., termination, relocation, or establishment of monitoring stations) to meet those objectives. The main purpose of this review is to ensure that an ambient air quality monitoring network collects adequate, representative, and useful air quality data on which to base policy decisions. The ambient air quality data from Ecology's network is used for a variety of purposes, including:

- Determine compliance with the NAAQS.
- Determine the location of maximum pollutant concentrations.
- Determine the effectiveness of air pollution control programs.
- Evaluate the effects of air pollution on public health.
- Track the progress of SIPs.
- Support dispersion models.
- Develop responsible, cost-effective, control strategies.
- Develop air quality trends.
- Analyze pollution episodes.
- Assist with permitting work.

EPA Region 10 Approved Network Changes in 2016

Regulatory Requirements and Other Data Needs

Appendix D Requirements

Appendix D of 40 CFR 58 describes concepts for designing the SLAMS network. It addresses monitoring objectives and the criteria for selecting the location and number of air monitoring stations. The concepts and guidance in Appendix D, as well as other non-regulatory EPA data needs, should be considered when evaluating the adequacy of the SLAMS network.

Monitoring objectives and spatial scales

Appendix D calls for the design of SLAMS networks to meet a minimum of six basic objectives:

1. Determine the highest pollutant concentrations expected in the area covered by the network.
2. Determine representative pollutant concentrations in areas of high population density.
3. Determine the impact of significant sources or source categories on pollutant concentrations in the ambient air.
4. Determine general background pollutant concentrations.
5. Determine the regional extent of pollutant transport between populated areas.
6. Determine the impacts (e.g., visibility impairment, vegetation effects) in more rural and remote areas on the secondary (i.e., welfare) standards.

SLAMS networks are designed to provide data for meeting the monitoring objectives described above, and to assist EPA and states in solving environmental problems.

Appendix D also provides guidance on spatial scales of representativeness for stations in a SLAMS network (Table 1). Ideally, the monitor is located so that its sample represents the air quality over the entire area that the monitoring station is intended to represent (Table 2).

Table 1. Relationship Between Monitoring Objectives and Scale of Representativeness

| Monitoring Objectives | Appropriate Siting Scales |
|-------------------------|------------------------------------|
| Highest concentration | Micro, middle, neighborhood, urban |
| Population | Neighborhood, urban |
| Source impact | Micro, middle, neighborhood |
| General/Background | Neighborhood, urban, regional |
| Regional transport | Urban/regional |
| Welfare-related impacts | Urban/regional |

Table 2. Summary of Spatial Scales for SLAMS: Scales Applicable for SLAMS

| Scale | SO ₂ | CO | O ₃ | NO ₂ | PB | PM ₁₀ | PM _{2.5} |
|-------------------|-----------------|----|----------------|-----------------|----|------------------|-------------------|
| Micro. . . | ✓ | ✓ | | | ✓ | ✓ | ✓ |
| Middle. . . | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Neighborhood. . . | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Urban. . . | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Regional. . . | ✓ | | ✓ | | ✓ | ✓ | ✓ |

Number of state and local air monitoring stations

Appendix D to 40 CFR Part 58 does not contain criteria for determining the total number of stations in the SLAMS network, except for requiring a minimum number of SLAMS lead, SO₂, and PM_{2.5} sites. For lead, EPA requires state and local agencies to focus their network design efforts on establishing monitoring stations around lead stationary sources which generate or have

the potential to generate exceedances of the quarterly lead NAAQS. Sources around which lead monitoring networks should be established are those emitting half ton or more per year. Other factors affect the number of stations in the network. SLAMS SO₂ monitoring requirements for counties not within the boundaries of any Consolidated Metropolitan Statistical Area/Metropolitan Statistical Area (CMSA/MSA) are based on the emissions of SO₂ in the airshed. A minimum number of SO₂ SLAMS sites are required for targeted sources of SO₂ emissions. Other than these requirements, the optimum size of a particular SLAMS network involves tradeoffs between data needs and available resources, which can best be resolved during the network design process.

Appendix E requirements

Appendix E contains siting criteria to be applied to ambient air quality analyzers or samplers after the general site location has been selected based on the monitoring objectives and spatial scales of representativeness presented in Appendix D and summarized in Section 2.1 of this document. The siting criteria presented in Appendix E are summarized in Table 3.

Other ambient air monitoring data needs

Ecology uses nephelometers throughout Washington. Nephelometers serve many purposes, including the WAQA program, ambient air quality assessment, and special studies. Typically, nephelometer monitoring sites utilize Federal Reference Method (FRM) or Federal Equivalent Method (FEM) equipment for correlations and are operated in accordance with CFR requirements for quality assurance and quality control. Ecology occasionally uses SPMS designation for criteria pollutant monitoring sites, which allows Ecology to assess ambient levels within regions of the state, while providing the flexibility to relocate the site if it is determined there is no concern for NAAQS violations. An SPMS site may be added to Ecology’s SLAMS network if a NAAQS exceedance has been recorded, or if pollutant concentrations are consistently measured at or greater than 80 percent of the standard.

Table 3. Summary of Probe and Monitoring Path Siting Criteria

| Pollutant | Scale (maximum monitoring path length (meters)) | Height from Ground to Probe or 80% of Monitoring Path (meters) | Horizontal & Vertical Distance from Supporting Structures to Probe or 90% of Monitoring Path (meters) | Distance from Trees to Probe or 90% of Monitoring Path (meters) |
|-----------------|--|--|---|---|
| SO ₂ | Middle [300m] Neighborhood Urban & Regional [1km] | 3–15 | >1 | >10 |
| CO | Micro, Middle [300m] Neighborhood [1km] | 3±0.5; 3–15 | >1 | >10 |
| O ₃ | Middle [300m] Neighborhood Urban & Regional [1km] | 3–15 | >1 | >10 |

| Pollutant | Scale (maximum monitoring path length (meters)) | Height from Ground to Probe or 80% of Monitoring Path (meters) | Horizontal & Vertical Distance from Supporting Structures to Probe or 90% of Monitoring Path (meters) | Distance from Trees to Probe or 90% of Monitoring Path (meters) |
|------------------|--|---|--|--|
| Ozone precursors | Neighborhood & Urban [1km] | 3–15 | >1 | >10 |
| NO ₂ | Middle [300m] Neighborhood & Urban [1km] | 3–15 | >1 | >10 |
| PM ₁₀ | Micro; Middle, Neighborhood Urban & Regional | 2–7 (Micro); 2–15 (all other scales) | >2 (all scales horizontal distance only) | >10 (all scales) |

Network review team and preparation

Network report participants include Ecology’s Air Quality Program staff. Sufficient information is provided to determine compliance of the network with regulatory network design and siting requirements specified in 40 CFR Part 58, Appendices D and E as to determine compliance of the network design and siting requirements specified for all special ambient air monitoring networks.

Network modifications

Modifications to the SLAMS network are addressed in 40 CFR 58.25, 58.36, and 58.46, respectively. Under Section 58.25, States are required to annually develop and implement schedules to modify the SLAMS network to eliminate any unnecessary stations or to correct any inadequacies indicated by the annual network review required by 58.20(d). As part of the annual network review, evaluations of the special networks established as partnership agreements between EPA and Ecology should also be conducted. Modifications to these networks should be recommended as a result of this annual report.

An important objective of the network modification process is determining whether or not sufficient ambient air quality information and data are being provided by the regulatory and other special monitoring networks to satisfy the principal data needs. If sufficient air quality data are not being collected, the deficient area must be identified and corrective action taken to resolve the problem. Conversely, if it is determined that excessive data are being collected (e.g., there are redundant sites resulting in data that agree closely), then efforts need to be taken to determine where disinvestment should be made and on what schedule.

Network modifications may be initiated by EPA or proposed by Ecology and agreed to by EPA. Network modifications may result from revisions to the Part 58 regulations, systems audits, site visits, or performance evaluations; special studies/saturation sampling, population increases/decreases; air quality concentrations consistently recorded below the NAAQS. Loss of permission to use a site; demolition of a building which is used for monitoring; building construction; growth of trees; changes in roadways; change in neighborhood type of use, etc.

Determining compliance with Appendix D/special monitoring requirements

Ecology uses this review to determine whether it is meeting the number of monitors required by the Part 58 Appendix D design criteria requirements, and whether the monitors properly located based on the monitoring objectives and spatial scales of representativeness presented in Appendix D.

Number and location of monitors

For SLAMS, the number of monitors required and their locations are not specified in the regulations but rather are determined by EPA Region 10 and Ecology on a case-by-case basis. EPA and Ecology ensure that SLAMS meet the monitoring objectives specified in Appendix D. Adequacy of the network is being determined by using a variety of tools. Appropriate location of monitors can be determined on the basis of stated objectives.

Monitor locations are based on the objectives specified in Appendix D, Section 3. Most often, these locations are those having high concentrations and large population exposure. Population information may be obtained from the latest census data and ambient monitoring data from AQS. If zip codes for various monitoring locations are obtained, use of electronic media census information and GIS-based information can be more easily combined with ambient monitoring data.

For special monitoring needs, program documents applicable to the network must be reviewed to determine the goals and specific siting criteria for the network. Compliance with monitoring objective determinations of the special network should be conducted using procedures similar to those used for Appendix D evaluations (are the number of monitors appropriate and are the monitors properly located).

Determining compliance with Appendix E requirements

Applicable siting criteria for SLAMS are specified in 40 CFR 58, Appendix E. The on-site visit itself consists of the physical measurements and observations needed to determine compliance with the Appendix E requirements, such as height above the ground level, distance from trees, paved or vegetative ground cover, etc.

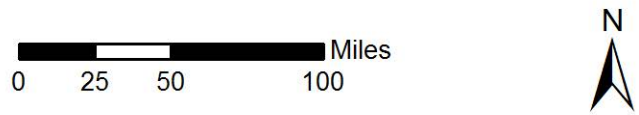
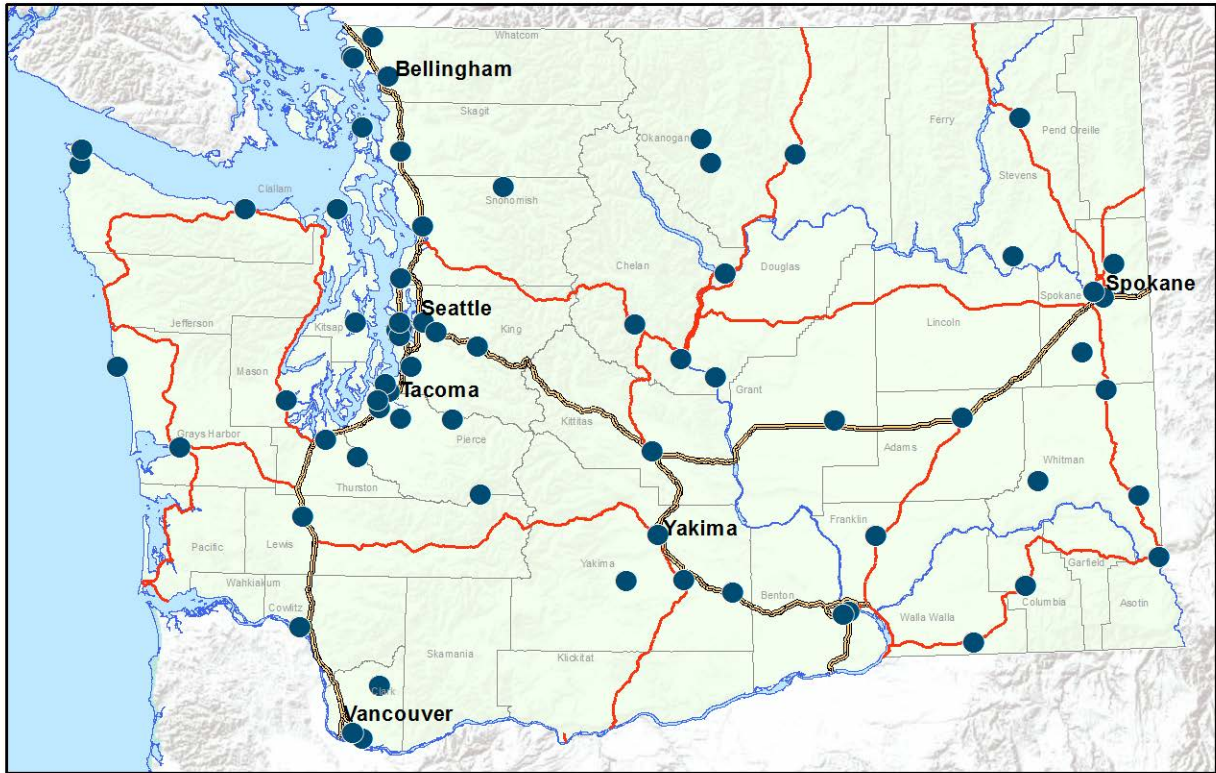


Figure 1. Map of Washington monitoring (all sites)

Table 4. CO, Parameter Code 42101

| AQS# | Site Name | Est. | Type | Scale | Sampling Frequency | Action for 2017 |
|-------------|-----------------------|-------------|-------------|--------------|---------------------------|------------------------|
| 530330080 | Seattle Beacon Hill | 3/07 | NCore | Urban | Continuous | Continue |
| 530330030 | Seattle 10th & Weller | 4/14 | Near-road | Urban | Continuous | Continue |
| 530090013 | Cheeka Peak | 5/06 | Rural NCore | Regional | Continuous | Continue |

Additional Monitors: None.

Recommendations/Modifications: None



Figure 2. Map of Washington CO sites

Seattle, Beacon Hill

| | |
|--|---------------------------------------|
| Site Information | |
| Site Name | Seattle Beacon Hill |
| AQS ID | 530330080 |
| GPS coordinates | LAT/LONG: 047 34' 58"/122 18' 30" |
| Location | Jefferson Park/reservoir |
| Address | 4103 Beacon Avenue S., Seattle |
| County | King |
| Distance to road from gaseous probe (meters) | 120 |
| Traffic count (AADT, year) | 12,700 (2012 WSDOT) |
| Groundcover | Grass, gravel |
| Statistical Area | Seattle-Bellevue-Everett, WA |
| Monitor Information Pollutant, POC | |
| Parameter code | 42101 (POC 2) |
| Basic monitoring objectives(s) | NAQQS Comparison |
| Site type(s) | Background |
| Monitor type(s) | NCORE |
| Instrument manufacturer and model | API 300EU |
| Method code | 593 |
| FRM/FEM/ARM/other | FEM |
| Collecting Agency | Ecology |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Urban |
| Monitoring start date | 6/79 established, 3/07 Trace level CO |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Continuous, year-round |
| Probe height (meters) | 4.65 |
| Distance from supporting structure (meters) | 1 |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | 20 |
| Distance from trees (meters) | 20 |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Pyrex |
| Residence time for reactive gases (seconds) | 15 |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the annual CO NAAQS? | Yes |

Purpose: Beacon Hill is an urban scale NCORE site located south of downtown Seattle, within Jefferson Park/reservoir. In addition to CO, Beacon Hill site is used for monitoring trace level SO₂, NO_y, PM_{2.5}, air toxics, ozone and speciation. Seattle Beacon Hill is also a long-term trend and research site.

Seattle, 10th and Weller

| | |
|--|--|
| Site information | |
| Site Name | Seattle, 10th and Weller |
| AQS ID | 530330030 |
| GPS coordinates | LAT/LONG: 047 59' 72"/122 31' 97" |
| Location | Adjacent to Interstate 5 in Downtown Seattle |
| Address | 10th and Weller |
| County | King |
| Distance to road from gaseous probe (meters) | 6 |
| Traffic count (AADT, year) | 149,000 I-5 (2015 WSDOT) |
| Groundcover | Concrete, Grass |
| Statistical Area | Seattle-Bellevue-Everett, WA |
| Monitor Information Pollutant, POC | |
| Parameter code | 42101 (POC 2) |
| Basic monitoring objectives(s) | NAQQS Comparison |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Teledyne-API T300EU |
| Method code | 593 |
| FRM/FEM/ARM/other | FEM |
| Collecting Agency | Ecology |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Micro |
| Monitoring start date | 4/14 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Continuous, year-round |
| Probe height (meters) | 3 |
| Distance from supporting structure (meters) | 3 |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Teflon |
| Residence time for reactive gases (seconds) | 1.6 |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the annual CO NAAQS? | Yes |

Purpose: Seattle 10th and Weller is Washington's primary near-road monitoring site. CO monitoring is EPA-required at one near-road site.

Cheeka Peak

(ORCAA)

Site Information

| | |
|--|-----------------------------------|
| Site Name | Cheeka Peak |
| AQS ID | 530090013 |
| GPS coordinates | LAT/LONG: 048 17' 12"/124 37' 13" |
| Location | Cheeka Peak (tree farm) |
| Address | Cheeka Peak |
| County | Clallam |
| Distance to road from gaseous probe (meters) | Not near a road |
| Traffic count (AADT, year) | N/A |
| Groundcover | Shrubs, grass and gravel/dirt |
| Statistical Area | Not in a CBMSA |

Monitor Information Pollutant, POC

| | |
|--|---------------------------------|
| Parameter code | 42101 (POC 2) |
| Basic monitoring objectives(s) | Research |
| Site type(s) | Background/Regional Transport |
| Monitor type(s) | Rural NCore |
| Instrument manufacturer and model | Teledyne-API T300U |
| Method code | 593 |
| FRM/FEM/ARM/other | FEM |
| Collecting Agency | Olympic Region Clean Air Agency |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Regional |
| Monitoring start date | 5/06 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Continuous, year-round |
| Probe height (meters) | 5.5 |
| Distance from supporting structure (meters) | 0.3 |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | 21 |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | 0.3 to 0.6 |
| Unrestricted airflow (degrees) | 175 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Teflon |
| Residence time for reactive gases (seconds) | 1.9 |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the annual CO NAAQS? | Yes |

Purpose: Cheeka Peak is a rural NCore site located at the northwestern tip of Washington. It is recognized as a national transport site.

Table 5. O3, Parameter Code 44201

| AQS# | Site Name | Est. | Type | Scale | Sampling Frequency | Action for 2017 |
|-------------|-------------------------------------|-------------|-------------|---------------|---------------------------|------------------------|
| 530009013 | Cheeka Peak | 5/06 | Rural NCore | Regional | Continuous | Continue |
| 530630001 | Cheney, Turnbull | 5/99 | SLAMS | Urban | Continuous | Continue |
| 530730005 | Custer/Loomis | 4/89 | SLAMS | Urban | Continuous | Continue |
| 530330023 | Enumclaw, Mud Mtn. | 7/98 | SLAMS | Urban | Continuous | Continue |
| 530330010 | Issaquah, Lake Sam | 12/75 | SLAMS | Urban | Continuous | Continue |
| 530050003 | Kennewick | 6/15 | SLAMS | Urban | Continuous | Continue |
| 530530012 | Mt. Rainier, Jackson Visitor Center | 7/98 | SLAMS | NPS supported | Continuous | Continue |
| 530330017 | North Bend, NB Way | 6/98 | SLAMS | Urban | Continuous | Continue |
| 530330080 | Seattle, Beacon Hill | 4/97 | NCore | Urban | Continuous | Continue |
| 530630046 | Spokane, Greenbluff | 4/90 | SLAMS | Urban | Continuous | Continue |
| 530110011 | Vancouver, Blairmont | 5/88 | SLAMS | Urban | Continuous | Continue |
| 530670005 | Yelm, Northern Pacific | 5/06 | SLAMS | Urban | Continuous | Continue |

Additional Monitors: None.

Recommendations/Proposed Modifications: None.

Notes:

In 2019, Washington will be required to collect and report Photochemical Assessment Monitoring System (PAMS) measurements at the Seattle Beacon Hill NCore site under CFR 40 Part 58, Appendix D, paragraph 3(a) located in a CBSA with a population of 1,000,000 or more, based on the latest available census figures.

Ecology provides technical support for ozone monitoring performed by the Northwest Clean Air Agency (NWCAA) in Mount Vernon. See Other Agencies.

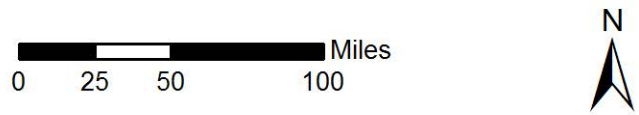


Figure 3. Map of Washington ozone sites

Cheeka Peak

(ORCAA)

| | |
|--|-----------------------------------|
| Site Information | |
| Site Name | Cheeka Peak |
| AQS ID | 530090013 |
| GPS coordinates | LAT/LONG: 048 17' 12"/124 37' 13" |
| Location | Cheeka Peak (tree farm) |
| Address | Cheeka Peak |
| County | Clallam |
| Distance to road from gaseous probe (meters) | Not near a road |
| Traffic count (AADT, year) | N/A |
| Groundcover | Shrubs, grass and gravel/dirt |
| Statistical Area | Not in a CBMSA |
| Monitor Information Pollutant, POC | |
| Parameter code | 44201 |
| Basic monitoring objectives(s) | Research |
| Site type(s) | Background/Regional Transport |
| Monitor type(s) | Rural NCore |
| Instrument manufacturer and model | Teledyne-API T400 |
| Method code | 087 |
| FRM/FEM/ARM/other | FEM |
| Collecting Agency | Olympic Region Clean Air Agency |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Regional |
| Monitoring start date | 5/06 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 5.5 |
| Distance from supporting structure (meters) | 0.3 |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | 21 |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | 0.3 to 0.6 |
| Unrestricted airflow (degrees) | 175 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Teflon |
| Residence time for reactive gases (seconds) | 1.9 |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the ozone NAAQS? | Yes |
| Design value | 0.052 |

Purpose: Cheeka Peak is a rural NCore site located at the northwestern tip of Washington. It is recognized as a national transport site.

Exceedances: This site has not exceeded the 8-hour ozone standard in the past three years.

Cheney, Turnbull Slough National Wildlife Refuge

| | |
|--|--|
| Site Information | |
| Site Name | Cheney Turnbull |
| AQS ID | 530630001 |
| GPS coordinates | LAT/LONG: 047 24' 55"/117 31' 49" |
| Location | Turnbull Slough National Wildlife Refuge |
| Address | South 26010 Smith Road, Cheney |
| County | Spokane |
| Distance to road from gaseous probe (meters) | 200 |
| Traffic count (AADT, year) | 5,200 (195 2012 WSDOT) |
| Groundcover | Grass |
| Statistical Area | Spokane, WA |

| | |
|--|--------------------------|
| Monitor Information Pollutant, POC | |
| Parameter code | 44201 |
| Basic monitoring objectives(s) | NAQQS Comparison |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Teledyne-API 400 |
| Method code | 087 |
| FRM/FEM/ARM/other | FEM |
| Collecting Agency | Ecology |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Urban |
| Monitoring start date | 5/99 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Seasonal (May-September) |
| Probe height (meters) | 3 |
| Distance from supporting structure (meters) | 1 |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | 70 |
| Distance from trees (meters) | 100+ |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Teflon |
| Residence time for reactive gases (seconds) | 3.8 |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the ozone NAAQS? | Yes |
| Design value | 0.059 |

Purpose: Cheney Turnbull is a background/transport scale site located at the Turnbull Wildlife Refuge, south of Spokane. It is a high-concentration and background/transport site for the Spokane area. Cheney Turnbull is a CFR-required site by population.

Exceedances: This site has not exceeded the 8-hour ozone standard in the past three years.

Custer/Loomis

(NWCAA)

| | |
|--|---------------------------------|
| Site Information | |
| Site Name | Custer/Loomis |
| AQS ID | 530730005 |
| GPS coordinates | LAT/LONG: 048 95' 25/-122 55'45 |
| Location | Shelter |
| Address | 1330 Loomis Trail Road, Custer |
| County | Whatcom |
| Distance to road from gaseous probe (meters) | 67 |
| Traffic count (AADT, year) | 21,000 (I-5 2012 WSDOT) |
| Groundcover | Grass |
| Statistical Area | Bellingham, WA |
| Monitor Information Pollutant, POC | |
| Parameter code | 44201 |
| Basic monitoring objectives(s) | NAQQS Comparison |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Teledyne-API 400 |
| Method code | 087 |
| FRM/FEM/ARM/other | FEM |
| Collecting Agency | NWCAA |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Urban |
| Monitoring start date | 4/89 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Seasonal (May-September) |
| Probe height (meters) | 3 |
| Distance from supporting structure (meters) | 1 |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | 130 |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Teflon |
| Residence time for reactive gases (seconds) | 9 |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the ozone NAAQS? | Yes |
| Design value | 0.046 |

Purpose: Custer/Loomis site provides data from Georgia Basin/Canadian impacts as modeling information for the Puget Sound Ozone network.

Exceedances: This site has not exceeded the 8-hour standard for ozone in the past three years.

Enumclaw, Mud Mountain Dam

| | |
|--|---|
| Site Information | |
| Site Name | Enumclaw, Mud Mountain Dam |
| AQS ID | 530330023 |
| GPS coordinates | LAT/LONG: 047 08' 28"/121 56' 09" |
| Location | Mud Mountain Dam (Army Corp of Engineers) |
| Address | 30525 SE Mud Mountain Road, Enumclaw |
| County | King |
| Distance to road from gaseous probe (meters) | N/A |
| Traffic count (AADT, year) | 14,000 (410 2012 WSDOT) |
| Groundcover | Gravel and weeds |
| Statistical Area | Seattle-Bellevue-Everett, WA |
| Monitor Information Pollutant, POC | |
| Parameter code | 44201 |
| Basic monitoring objectives(s) | NAQQS Comparison |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Teledyne-API 400 |
| Method code | 087 |
| FRM/FEM/ARM/other | FEM |
| Collecting Agency | Ecology |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Urban |
| Monitoring start date | 7/98 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Seasonal (May-September) |
| Probe height (meters) | 3 |
| Distance from supporting structure (meters) | 0.5 |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Teflon |
| Residence time for reactive gases (seconds) | 5.7 |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the ozone NAAQS? | Yes |
| Design value | 0.067 |

Purpose: Mud Mountain Dam is an urban scale SLAMS established in 1998 located 30 miles east of Seattle, near Enumclaw at the end of the ozone transport zone.

Exceedances: This site has exceeded the 2008 ozone standard in the last three years. 2014 twice, 2015 three times. Exceedances will be flagged.

Issaquah, Lake Sammamish State Park

| | |
|--|--|
| Site Information | |
| Site Name | Issaquah, Lake Sammamish |
| AQS ID | 530330010 |
| GPS coordinates | LAT/LONG: 047 33' 07"/122 02' 40" |
| Location | Lake Sammamish State Park |
| Address | 20050 SE 56th (Lake Sammamish State Park), Issaquah |
| County | King |
| Distance to road from gaseous probe (meters) | 440 |
| Traffic count (AADT, year) | 121,000 (I-90 2012 WSDOT) |
| Groundcover | Gravel, grass |
| Statistical Area | Seattle-Bellevue-Everett, WA |
| Monitor Information Pollutant, POC | |
| Parameter code | 44201 |
| Basic monitoring objectives(s) | NAQQS Comparison |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Teledyne-API 400 |
| Method code | 087 |
| FRM/FEM/ARM/other | FEM |
| Collecting Agency | Ecology |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Urban |
| Monitoring start date | 12/75 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Seasonal (May-September) |
| Probe height (meters) | 3 |
| Distance from supporting structure (meters) | 1 |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Teflon |
| Residence time for reactive gases (seconds) | 2.8 |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the ozone NAAQS? | Yes |
| Design value | 0.055 |

Purpose: Lake Sammamish is an urban scale site established in 1975 located east of Seattle, within Lake Sammamish State Park. Lake Sammamish is a long-term ozone trends site.

Exceedances: This site has not exceeded the 8-hour standard in the past three years.

Kennewick, South Clodfelter Road

(BCAA)

Site Information

| | |
|--|--------------------------------------|
| Site Name | Kennewick South Clodfelter Road |
| AQS ID | 530050003 |
| GPS coordinates | LAT/LONG: 046 20' 45"/119 24' 37" |
| Location | BCAA Offices |
| Address | 526 South Clodfelter Road, Kennewick |
| County | Benton |
| Distance to road from gaseous probe (meters) | 60 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Ground-grass and asphalt |
| Statistical Area | Richland-Kennewick-Pasco, WA |

Kennewick, S. Clodfelter Road Monitor Information

| | |
|--|--------------------------------|
| Pollutant, POC | |
| Parameter code | 44201 |
| Basic monitoring objectives(s) | NAQQS Compliance |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Teledyne-API T400 |
| Method code | 087 |
| FRM/FEM/ARM/other | FEM |
| Collecting Agency | Benton County Clean Air Agency |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 6/15 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Seasonal (May/September) |
| Probe height (meters) | 7 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Probe material for reactive gases | Teflon |
| Residence time for reactive gases (seconds) | 9 |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the ozone NAAQS? | Yes |
| Design value | 0.071* Two years of data |

Purpose: Kennewick is an urban scale site for ozone established in June of 2015. It is representative of the Kennewick/ Richland area.

Exceedances: This site has exceeded the 2008 ozone standard in the last three years. 2015 four times and 2016 twice. The Kennewick will have three years of complete data in June 2018.

Mt. Rainier, Jackson Visitor Center

| | |
|--|-------------------------------------|
| Site Information | |
| Site Name | Mt. Rainier, Jackson Visitor Center |
| AQS ID | 530530012 |
| GPS coordinates | LAT/LONG: 046 47' 07"/121 43' 58" |
| Location | Mount Rainier National Park |
| Address | Jackson Visitors Center |
| County | King |
| Distance to road from gaseous probe (meters) | 12 |
| Traffic count (AADT, year) | 506 (706, 2012 WSDOT) |
| Groundcover | Asphalt, rock, snow |
| Statistical Area | Seattle-Bellevue-Everett, WA |
| Monitor Information Pollutant, POC | |
| Parameter code | 44201 |
| Basic monitoring objectives(s) | NAQQS Comparison |
| Site type(s) | General Background |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Teledyne-API 400 |
| Method code | 087 |
| FRM/FEM/ARM/other | FEM |
| Collecting Agency | Ecology |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Regional |
| Monitoring start date | 7/98 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Seasonal (May-September) |
| Probe height (meters) | 6 |
| Distance from supporting structure (meters) | 1 |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | 1 Supporting structure |
| Distance from trees (meters) | 35 |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 180 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Teflon |
| Residence time for reactive gases (seconds) | 4 |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the ozone NAAQS? | Yes |
| Design value | 0.059 |

Purpose: The Jackson Visitor Center site is a regional scale ozone site established in 1998.

Exceedances: This site has not exceeded the 8-hour ozone standard in the past three years.

North Bend, North Bend Way

| | |
|--|--|
| Site Information | |
| Site Name | North Bend |
| AQS ID | 530330017 |
| GPS coordinates | LAT/LONG: 047 29' 23"/121 46' 24" |
| Location | USFS Offices |
| Address | 42404 SE North Bend Way, North Bend |
| County | King |
| Distance to road from gaseous probe (meters) | 180 |
| Traffic count (AADT, year) | 9,600 (202, 2012 WSDOT) |
| Groundcover | Grass |
| Statistical Area | Seattle-Bellevue-Everett, WA |
| Monitor Information Pollutant, POC | |
| Parameter code | 44201 |
| Basic monitoring objectives(s) | NAQQS Comparison |
| Site type(s) | Regional Transport/Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Teledyne -API 400 |
| Method code | 087 |
| FRM/FEM/ARM/other | FEM |
| Collecting Agency | Ecology |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Urban |
| Monitoring start date | 6/98 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Seasonal (May-September) |
| Probe height (meters) | 3 |
| Distance from supporting structure (meters) | 1 |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | 20 |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Teflon |
| Residence time for reactive gases (seconds) | 2.8 |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the ozone NAAQS? | Yes |
| Design value | 0.058 |

Purpose: North Bend Way is an urban scale site established in 1998 located outside of North Bend, 25 miles east of Seattle. North Bend typically indicates some of the highest readings in the ozone network.

Exceedances: This site has exceeded the 8-hour ozone standard in the last three years. Once in 2014 and once in 2015.

Seattle, Beacon Hill

| | |
|--|--|
| Site Information | |
| Site Name | Seattle Beacon Hill |
| AQS ID | 530330080 |
| GPS coordinates | LAT/LONG: 047 34' 58"/122 18' 30" |
| Location | Jefferson Park/reservoir |
| Address | 4103 Beacon Avenue S., Seattle |
| County | King |
| Distance to road from gaseous probe (meters) | 120 |
| Traffic count (AADT, year) | 12,700 (2012 SDOT) |
| Groundcover | Grass, gravel |
| Statistical Area | Seattle-Bellevue-Everett, WA |
| Monitor Information Pollutant, POC | |
| Parameter code | 44201 |
| Basic monitoring objectives(s) | NAQQS Comparison |
| Site type(s) | General Background/Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Teledyne-API 400E |
| Method code | 087 |
| FRM/FEM/ARM/other | FEM |
| Collecting Agency | Ecology |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Urban |
| Monitoring start date | 4/97 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 4.65 |
| Distance from supporting structure (meters) | 1 |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | 20 |
| Distance from trees (meters) | 20 |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Probe material for reactive gases | Pyrex |
| Spacing from minor sources | No minor sources |
| Residence time for reactive gases (seconds) | 15 |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the ozone NAAQS? | Yes |
| Design value | 0.046 |

Purpose: Beacon Hill is an urban scale NCORE site located south of downtown Seattle, within Jefferson Park/reservoir. In addition to ozone, the site is used for monitoring trace level CO, SO₂, NO_y, PM_{2.5}, air toxics, and speciation. Seattle Beacon Hill is also a long-term trend and research site.

Exceedances: This site has not exceeded the 8-hour standard in the past three years.

Spokane, Greenbluff

| | |
|--|------------------------------------|
| Site Information | |
| Site Name | Spokane, Greenbluff |
| AQS ID | 530630046 |
| GPS coordinates | LAT/LONG: 047 49' 37"/117 16' 31" |
| Location | Fire Station in Chattaroy, WA |
| Address | E. 9814 Greenbluff Road, Chattaroy |
| County | Spokane |
| Distance to road from gaseous probe (meters) | 50 |
| Traffic count (AADT, year) | 20,000 (2, 2012 WSDOT) |
| Groundcover | Grass, gravel |
| Statistical Area | Spokane, WA |
| Monitor Information Pollutant, POC | |
| Parameter code | 44201 |
| Basic monitoring objectives(s) | NAQQS Comparison |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Teledyne-API 400 |
| Method code | 087 |
| FRM/FEM/ARM/other | FEM |
| Collecting Agency | Ecology |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Urban |
| Monitoring start date | 4/90 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Seasonal, (May – September) |
| Probe height (meters) | 3 |
| Distance from supporting structure (meters) | 1 |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Teflon |
| Residence time for reactive gases (seconds) | 5.7 |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the ozone NAAQS? | Yes |
| Design value | 0.059 |

Purpose: Greenbluff is an urban scale site located near Spokane. Greenbluff is used with Cheney to identify ozone patterns for the Spokane area. Spokane Greenbluff is a CFR population required site.

Exceedances: This site has exceeded the 8-hour ozone standard in the past three years. Once in 2015

Vancouver, Blairmont HS

| | |
|--|---|
| Site Information | |
| Site Name | Vancouver, Blairmont |
| AQS ID | 530110011 |
| GPS coordinates | LAT/LONG: 045 36' 37"/122 30' 59" |
| Location | Mountain View High School, Vancouver |
| Address | 1500 SE Blairmont Drive, Vancouver |
| County | Clark |
| Distance to road from gaseous probe (meters) | 200 |
| Traffic count (AADT, year) | 72,000 (014, 2012 WSDOT) |
| Groundcover | Grass, asphalt |
| Statistical Area | Portland, OR – Vancouver, WA |
| Monitor Information Pollutant, POC | |
| Parameter code | 44201 |
| Basic monitoring objectives(s) | NAQQS Comparison |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Teledyne-API 400 |
| Method code | 087 |
| FRM/FEM/ARM/other | FEM |
| Collecting Agency | Ecology |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Urban |
| Monitoring start date | 5/88 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Seasonal, (May – September) |
| Probe height (meters) | 10 |
| Distance from supporting structure (meters) | 0.5 |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | 5 to small (5m fruit trees), 12 to tall (12 m conifers) |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Teflon |
| Residence time for reactive gases (seconds) | 15 |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the ozone NAAQS? | Yes |
| Design value | 0.059 |

Purpose: Blairmont is an urban scale site near downtown Vancouver. The site represents the Washington portion of the Portland/Vancouver air shed and is part of the ozone maintenance planning effort of the Southwest Clean Air Agency (SWCAA).

Exceedances: This site has exceeded the 8-hour ozone standard in the past three years. Once in 2014.

Yelm, Northern Pacific

| | |
|--|-----------------------------------|
| Site Information | |
| Site Name | Yelm – North Pacific |
| AQS ID | 530670005 |
| GPS coordinates | 931 Northern Pacific Road, Yelm |
| Location | Trailer |
| Address | LAT/LONG: 046 57' 03"/122 35' 43" |
| County | Thurston |
| Distance to road from gaseous probe (meters) | 230 |
| Traffic count (AADT, year) | 17,000 (507 2012 WSDOT) |
| Groundcover | Gravel, grass |
| Statistical Area | Olympia, WA |
| Monitor Information Pollutant, POC | |
| Parameter code | 44201 |
| Basic monitoring objectives(s) | NAQQS Comparison |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Teledyne-API 400 |
| Method code | 087 |
| FRM/FEM/ARM/other | FEM |
| Collecting Agency | Ecology |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Urban |
| Monitoring start date | 5/06 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Seasonal, (May – September) |
| Probe height (meters) | 3 |
| Distance from supporting structure (meters) | 0.7 |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | 50 |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Teflon |
| Residence time for reactive gases (seconds) | 4.4 |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the ozone NAAQS? | Yes |
| Design value | 0.057 |

Purpose: Yelm is an urban scale site originally established in 1997 and relocated in 2006. The Yelm site is located in a commercial/residential area. Yelm represents ozone transport in the South Puget Sound area.

Exceedances: This site has not exceeded the 8-hour ozone standard in the past three years.

Table 6. NO₂ Parameter Codes 42600 NO_y, 42601 NO, 42612 NO_y-NO

| AQS# | Site Name | Est. | Type | Scale | Sampling Frequency | Action for 2017 |
|-------------|-----------------------|-------------|-------------|--------------|---------------------------|------------------------|
| 530090013 | Cheeka Peak | 5/06 | Rural NCore | Regional | Continuous | Continue |
| 530330080 | Seattle Beacon Hill | 3/07 | NCore | Urban | Continuous | Continue |
| 530330030 | Seattle 10th & Weller | 4/14 | SLAMS | Micro | Continuous | Continue |
| 530530024 | Tacoma S. 36th | 1/16 | SLAMS | Micro | Continuous | Continue |

Additional Monitors: None.

Recommendations/Proposed Modifications: None

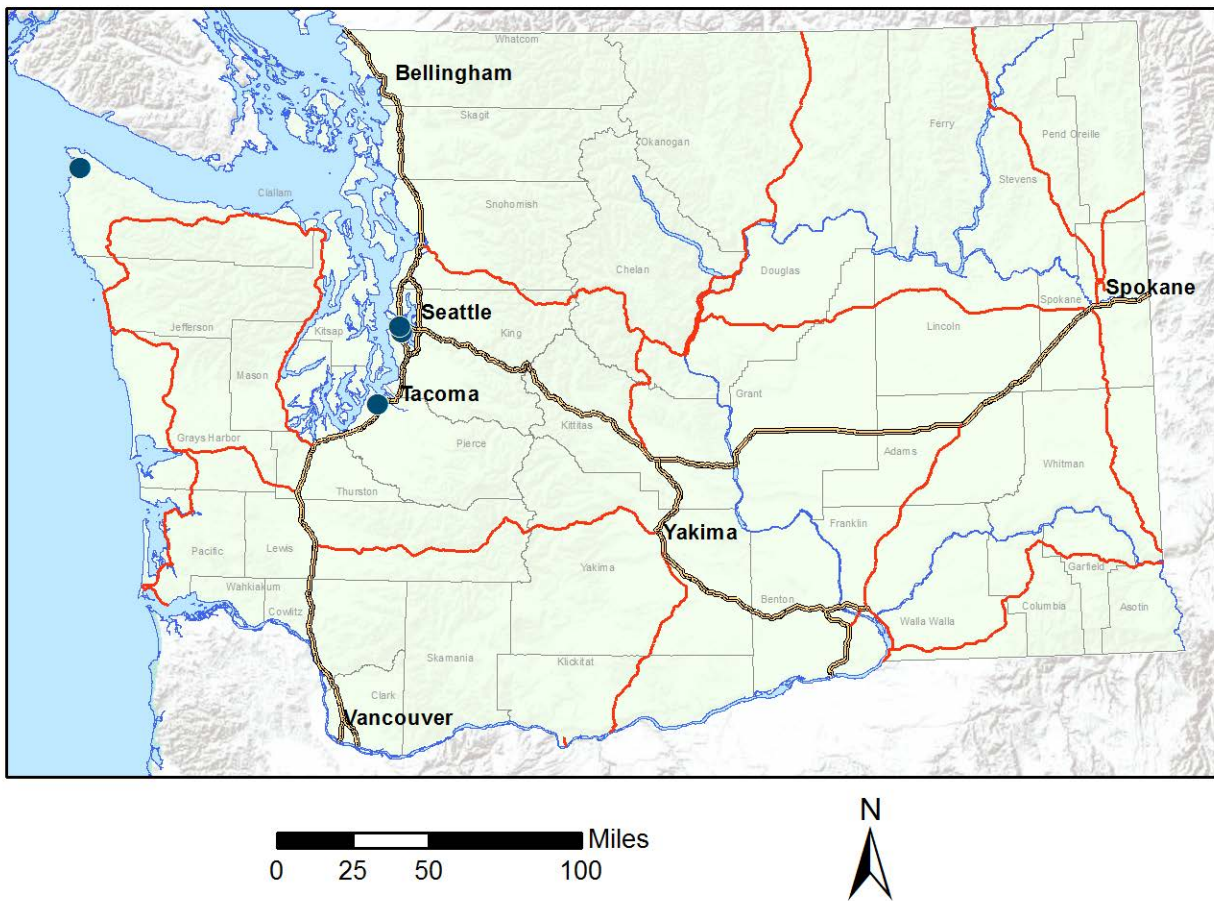


Figure 4. Map of Washington NO₂ sites

Cheeka Peak

(ORCAA)

| | |
|--|-----------------------------------|
| Site Information | |
| Site Name | Cheeka Peak |
| AQS ID | 530090013 |
| GPS coordinates | LAT/LONG: 048 17' 12"/124 37' 13" |
| Location | Cheeka Peak (tree farm) |
| Address | Cheeka Peak |
| County | Clallam |
| Distance to road from gaseous probe (meters) | Not near a road |
| Traffic count (AADT, year) | N/A |
| Groundcover | Shrubs, grass and gravel/dirt |
| Statistical Area | Not in a CBMSA |
| Monitor Information Pollutant, POC | |
| Parameter code | 42600, 42601, 42612 |
| Basic monitoring objectives(s) | Research/ |
| Site type(s) | Background/Rural Transport |
| Monitor type(s) | Rural NCore |
| Instrument manufacturer and model | Teledyne-API T200U |
| Method code | 599 |
| FRM/FEM/ARM/other | FEM |
| Collecting Agency | Olympic Region Clean Air Agency |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Regional |
| Monitoring start date | 5/06 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 5.5 |
| Distance from supporting structure (meters) | 0.3 |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | 21 |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | 0.3 to 0.6 |
| Unrestricted airflow (degrees) | 175 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Teflon |
| Residence time for reactive gases (seconds) | 1.6 |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the NO ₂ NAAQS? | Yes |

Purpose: Cheeka Peak is a rural NCore site located at the northwestern tip of Washington. It is recognized as a national transport site.

Seattle, Beacon Hill

| | |
|--|--|
| Site Information | |
| Site Name | Seattle Beacon Hill |
| AQS ID | 530330080 |
| GPS coordinates | LAT/LONG: 047 34' 58"/122 18' 30" |
| Location | Jefferson Park/reservoir |
| Address | 4103 Beacon Avenue South, Seattle |
| County | King |
| Distance to road from gaseous probe (meters) | 120 |
| Traffic count (AADT, year) | 12,700 (2012 WSDOT) |
| Groundcover | Grass, gravel |
| Statistical Area | Seattle-Bellevue-Everett, WA |
| Monitor Information Pollutant, POC | |
| Parameter code | 42600, 42601, 42612, 42601, 42602, 42603 |
| Basic monitoring objectives(s) | NAQQS Compliance |
| Site type(s) | Background |
| Monitor type(s) | NCORE |
| Instrument manufacturer and model | Teledyne-API 200EU & Thermo 42C-Y |
| Method code | 599, 574 |
| FRM/FEM/ARM/other | FEM |
| Collecting Agency | Ecology |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Urban |
| Monitoring start date | 2006 (NO) / 2013 (NO ₂) /2007 (NO _y) |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Continuous, year-round |
| Probe height (meters) | 4 |
| Distance from supporting structure (meters) | 1 |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | 20 (NO ₂) 10 (NO _y) |
| Distance from trees (meters) | 20 |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Pyrex |
| Residence time for reactive gases (seconds) | 3.7(NO ₂) 5.5 (NO _y) |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the NO ₂ NAAQS? | Yes |

Purpose: Beacon Hill is an urban scale NCORE site located within Jefferson Park south of downtown Seattle. In addition to NO₂, the site is used for monitoring trace level CO, SO₂, NO_y, PM_{2.5}, air toxics, ozone and speciation. Seattle Beacon Hill is a long-term trend and research site.

Seattle, 10th and Weller

| | |
|--|--|
| Site Information | |
| Site Name | Seattle, 10th and Weller |
| AQS ID | 530330030 |
| GPS coordinates | LAT/LONG: 047 59' 72"/122 31' 97" |
| Location | Adjacent to Interstate 5 in Downtown Seattle |
| Address | 10th and Weller |
| County | King |
| Distance to road from gaseous probe (meters) | 8 |
| Traffic count (AADT, year) | 149,000 (I-5 2015 WSDOT) |
| Groundcover | Concrete, grass |
| Statistical Area | Seattle-Bellevue-Everett, WA |
| Monitor Information Pollutant, POC | |
| Parameter code | 42601, 42602, 42603 |
| Basic monitoring objectives(s) | NAQQS Compliance |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Teledyne-API 200EU |
| Method code | 599 |
| FRM/FEM/ARM/other | FEM |
| Collecting Agency | Ecology |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Micro |
| Monitoring start date | 4/14 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 3 |
| Distance from supporting structure (meters) | 1 |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Teflon |
| Residence time for reactive gases (seconds) | 3.2 |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the NO ₂ NAAQS? | Yes |

Purpose: Seattle 10th and Weller is an EPA-required, near-road monitoring site adjacent to I-5 in Seattle.

Exceedances: Seattle 10th & Weller exceeded of the 2010 NO₂ NAAQS once in 2015.

Tacoma, S. 36th

| | |
|--|--|
| Site Information | |
| Site Name | Tacoma S. 36th |
| AQS ID | 530530024 |
| GPS coordinates | LAT/LONG Est.: 047 22' 63"/122 46' 25" |
| Location | Jenny Reed Elementary School |
| Address | 1802 S. 36 th , Tacoma |
| County | Pierce |
| Distance to road from gaseous probe (meters) | 30 |
| Traffic count (AADT, year) | 134,000 (I-5 2015 WSDOT) |
| Groundcover | Asphalt, grass |
| Statistical Area | Seattle-Bellevue-Everett, WA |
| Monitor Information Pollutant, POC | |
| Parameter code | 42601, 42602, 42603 |
| Basic monitoring objectives(s) | NAQQS Compliance |
| Site type(s) | Population Exposure |
| Monitor type(s) | SPMS |
| Instrument manufacturer and model | Teledyne-API 200EU |
| Method code | 599 |
| FRM/FEM/ARM/other | FEM |
| Collecting Agency | Ecology |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Micro |
| Monitoring start date | Est. 1/16 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 6 |
| Distance from supporting structure (meters) | 1 |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Teflon |
| Residence time for reactive gases (seconds) | 3.2 |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the NO ₂ NAAQS? | Yes |

Purpose: Tacoma S. 36th is an EPA-required, near-road monitoring site at Jenny Reed Elementary School, adjacent to Interstate 5 in Tacoma.

Table 7. SO₂ Parameter Code 42401

| AQS# | Site Name | Est. | Type | Scale | Sampling Frequency | Action for 2017 |
|-----------|---------------------|------|-------------|--------------|--------------------|-----------------|
| 530330080 | Seattle Beacon Hill | 3/07 | NCORE | Urban | Continuous | Continue |
| 530090013 | Cheeka Peak | 5/06 | Rural NCORE | Regional | Continuous | Continue |
| 530730017 | Mountain View Rd. | 1/17 | SLAMS | Neighborhood | Continuous | Continue |
| 530730013 | Kickerville Rd. | 1/17 | SLAMS | Neighborhood | Continuous | Continue |
| 530070012 | Malaga-Rock Island | 1/17 | SLAMS | Neighborhood | Continuous | Continue |

Additional Monitors: Three new SO₂ monitors at two aluminum smelters were established during 2016 and operational as of January 1, 2017.

Recommendations/Proposed Modifications: None.

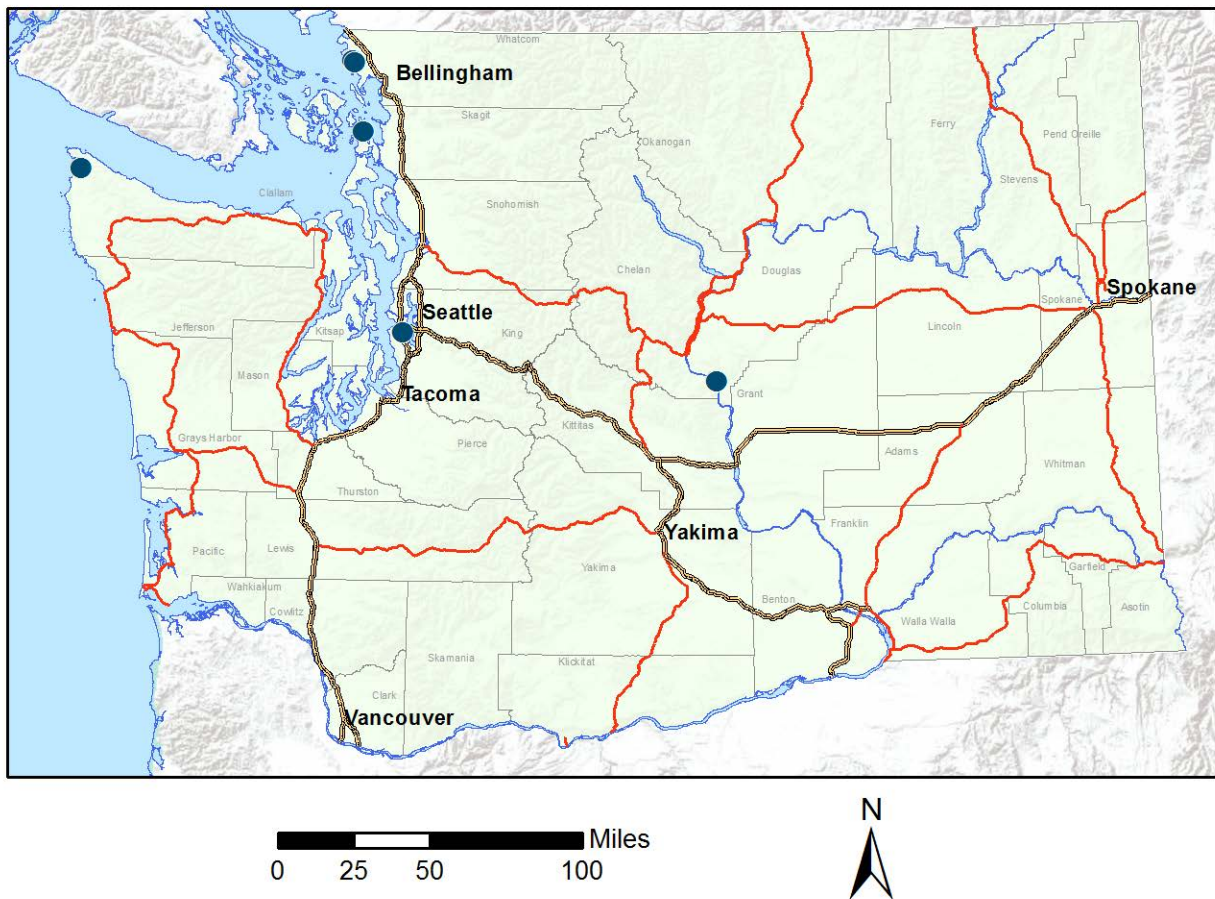


Figure 5. Map of Washington SO₂ sites

Seattle, Beacon Hill

| | |
|--|-----------------------------------|
| Site Information | |
| Site Name | Seattle Beacon Hill |
| AQS ID | 530330080 |
| GPS coordinates | LAT/LONG: 047 34' 58"/122 18' 30" |
| Location | Jefferson Park/reservoir |
| Address | 4103 Beacon Avenue South, Seattle |
| County | King |
| Distance to road from gaseous probe (meters) | 120 |
| Traffic count (AADT, year) | 12,700 (2012 WSDOT) |
| Groundcover | Grass, gravel |
| Statistical Area | Seattle-Bellevue-Everett, WA |
| Monitor Information Pollutant, POC | |
| Parameter code | 42401 |
| Basic monitoring objectives(s) | NAQQS Compliance |
| Site type(s) | Population Exposure |
| Monitor type(s) | NCORE |
| Instrument manufacturer and model | API T100U |
| Method code | 600 |
| FRM/FEM/ARM/other | FEM |
| Collecting Agency | Ecology |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Urban |
| Monitoring start date | 2006 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Continuous, year-round |
| Probe height (meters) | 4.65 |
| Distance from supporting structure (meters) | 1 |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | 20 |
| Distance from trees (meters) | 20 |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Pyrex |
| Residence time for reactive gases (seconds) | 15 |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the SO ₂ NAAQS? | Yes |

Purpose: Beacon Hill is an urban scale NCORE site located within Jefferson Park south of downtown Seattle. This site is used for monitoring trace level CO, SO₂, NO_y, PM_{2.5}, air toxics, and speciation. Seattle Beacon Hill is also a long-term trend and research site.

Cheeka Peak

(ORCAA)

| | |
|--|-----------------------------------|
| Site Information | |
| Site Name | Cheeka Peak |
| AQS ID | 530090013 |
| GPS coordinates | LAT/LONG: 048 17' 12"/124 37' 13" |
| Location | Cheeka Peak (tree farm) |
| Address | Cheeka Peak |
| County | Clallam |
| Distance to road from gaseous probe (meters) | Not near a road |
| Traffic count (AADT, year) | N/A |
| Groundcover | Shrubs, grass and gravel/dirt |
| Statistical Area | Not in a CBMSA |
| Monitor Information Pollutant, POC | |
| Parameter code | 42401 |
| Basic monitoring objectives(s) | Research |
| Site type(s) | Background/Regional Transport |
| Monitor type(s) | Rural NCore |
| Instrument manufacturer and model | Teledyne-API T100U |
| Method code | 600 |
| FRM/FEM/ARM/other | FEM |
| Collecting Agency | Olympic Region Clean Air Agency |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Regional |
| Monitoring start date | 5/06 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 5.5 |
| Distance from supporting structure (meters) | 0.3 |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | 21 |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | 0.3 to 0.6 |
| Unrestricted airflow (degrees) | 175 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Teflon |
| Residence time for reactive gases (seconds) | 5.8 |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the SO ₂ NAAQS? | Yes |

Purpose: Cheeka Peak is a rural NCore site located at the northwestern tip of Washington. It is recognized as a national transport site.

Mountain View Road, Ferndale

| | |
|--|-----------------------------------|
| Site Information | |
| Site Name | Mountain View Road, Ferndale |
| AQS ID | 530730017 |
| GPS coordinates | LAT/LONG: 48 50' 53" 122 41' 20" |
| Location | 1 km East of Intalco |
| Address | 4050 Mountain View Road, Ferndale |
| County | Whatcom |
| Distance to road from gaseous probe (meters) | 30 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Grass |
| Statistical Area | Not in a CBMSA |
| Monitor Information Pollutant, POC | |
| Parameter code | 42401 |
| Basic monitoring objectives(s) | NAQQS Compliance |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | API T100 |
| Method code | 077 |
| FRM/FEM/ARM/other | FEM |
| Collecting Agency | Intalco |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 1/2017 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Continuous, year-round |
| Probe height (meters) | 3 |
| Distance from supporting structure (meters) | 1 |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | 55 |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Pyrex |
| Residence time for reactive gases (seconds) | TBD |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the SO ₂ NAAQS? | Yes |

Purpose: Monitoring ambient SO₂ concentrations for determination of NAAQS attainment.

Kickerville Road, Ferndale

| | |
|--|----------------------------------|
| Site Information | |
| Site Name | Kickerville Road, Ferndale |
| AQS ID | 530730013 |
| GPS coordinates | LAT/LONG: 48 51' 19" 122 42' 17" |
| Location | 1 km North of Intalco |
| Address | 6036 Kickerville Road, Ferndale |
| County | Whatcom |
| Distance to road from gaseous probe (meters) | 80 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Low shrubs, grasses |
| Statistical Area | Not in a CBMSA |
| Monitor Information Pollutant, POC | |
| Parameter code | 42401 |
| Basic monitoring objectives(s) | NAQQS Compliance |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | API T100 |
| Method code | 077 |
| FRM/FEM/ARM/other | FEM |
| Collecting Agency | Intalco |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 1/2017 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Continuous, year-round |
| Probe height (meters) | 3 |
| Distance from supporting structure (meters) | 1 |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | TBD |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Pyrex |
| Residence time for reactive gases (seconds) | TBD |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the SO ₂ NAAQS? | Yes |

Purpose: Monitoring ambient SO₂ concentrations for determination of NAAQS attainment.

Malaga-Rock Island Dam Road, Wenatchee

| | |
|--|--|
| Site Information | |
| Site Name | Malaga-Rock Island Dam Road |
| AQS ID | 500070012 |
| GPS coordinates | LAT/LONG: 47 20' 40" 120 54' 40" |
| Location | 2.2 Miles SE of ALCOA Wenatchee |
| Address | 8100 Malaga Alcoa Highway, Rock Island |
| County | Chelan |
| Distance to road from gaseous probe (meters) | 80 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Low shrubs, grass, gravel |
| Statistical Area | Not in a CBMSA |
| Monitor Information Pollutant, POC | |
| Parameter code | 42401 |
| Basic monitoring objectives(s) | NAQQS Compliance |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | API T100 |
| Method code | 077 |
| FRM/FEM/ARM/other | FEM |
| Collecting Agency | Alcoa |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 1/2017 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Continuous, year-round |
| Probe height (meters) | 3 |
| Distance from supporting structure (meters) | 1 |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Pyrex |
| Residence time for reactive gases (seconds) | 15 |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the SO ₂ NAAQS? | Yes |

Purpose: Monitoring ambient SO₂ concentrations for determination of NAAQS attainment.

Table 8. PM₁₀, Parameter Code 81102

| AQS# | Site Name | Est. | Type | Scale | Sampling Type | Action for 2017 |
|-----------|--------------------------|-------|-------|--------------|---------------|-----------------|
| 530650005 | Colville, E. 1st | 10/15 | SLAMS | Neighborhood | Continuous | Continue |
| 530050002 | Kennewick, Metaline Ave. | 10/94 | SLAMS | Neighborhood | Continuous | Continue |
| 530630021 | Spokane, Augusta Ave. | 3/09 | SLAMS | Middle | Continuous | Continue |
| 530770009 | Yakima, S. 4th | 4/00 | SLAMS | Neighborhood | Continuous | Continue |

Additional Monitors: None.

Recommendations/Proposed Modifications: Yakima was converted to a PM₁₀ FEM. Note design value information below.

Thurston County Maintenance Area (Lacey PM_{2.5})

As detailed in the 2nd PM₁₀ Maintenance Plan for Thurston County Washington, ORCAA submitted the design value estimates for the Lacey-College Street nephelometer site (53670013). The 5-year PM₁₀ design value estimate for 2012-2016 was 43 µg/m³. The PM₁₀ design value estimate for 2014-2016 was 39 µg/m³.

Ecology provided daily 24-hour averages for the timeframe in question. The number of daily averages for the period was determined. The 5-year design value estimate was based on 1751 values and the 3-year design value estimate was based on 1026 values. The number of values was then compared to Table 6-1 contained in the PM₁₀ SIP Development Guidance document. For 1751 values, the Table prescribes using the sixth highest value in the data set. For 1026 values, the Table prescribes the third highest value in the data set.

Kent, Seattle, and Tacoma PM₁₀ Maintenance Areas

Three- and five-year design values for the Kent, Seattle, and Tacoma PM₁₀ Maintenance Areas were calculated using the table lookup method and the statistical fit method outlined in the LMP guidance document and the Kent, Seattle and Tacoma PM₁₀ Limited Maintenance Plan.

A 3-year PM₁₀ design value of 150 µg/m³ or below demonstrates continued compliance with the PM₁₀ NAAQS. A 5-year design value below 98 µg/m³ is required to qualify for the LMP approach. Design values calculated using the table lookup method fall within the range of uncertainty of the statistical fit method. Because they are the most conservative values, only the statistical fit values are presented here.

The PM_{2.5} FEM TEOM at James Street and Central Avenue (530332004) is used to assure continued compliance with the PM₁₀ NAAQS and to confirm continued eligibility for the LMP approach. The 2016 5-year design value is 59±9 µg/m³ and the 3-year design value is 59±12 µg/m³.

The PM_{2.5} FEM TEOM at Seattle-Duwamish (530330057) is used to assure continued compliance with the PM₁₀ NAAQS and to confirm continued eligibility for the LMP approach. The 2016 5-year design value is 57±6 µg/m³ and the 3-year design value is 58±6 µg/m³. Note: In 2014, Duwamish did not have a complete year of data. The design values for Duwamish were calculated using the guidelines for incomplete data outlined in Appendix B, page B-1, of the PM₁₀ SIP Development Guide.

The PM_{2.5} nephelometer at Tacoma-Alexander Avenue (530530031) is used to assure continued compliance with the PM₁₀ NAAQS and to confirm continued eligibility for the LMP approach. The 2016 5-year design value is 68±16 µg/m³ and the 3-year design value is 66±23 µg/m³.

Spokane County Maintenance Area (Spokane PM₁₀)

The Spokane County Maintenance area design value is based on FRM and FEM 24-hour PM₁₀ monitoring data from the Augusta Avenue site (530630021) in Spokane. The most recent five years of data is from 2012–2016 using a combination of FRM and FEM data from the Augusta site.

A 5-year PM₁₀ design value below 98 µg/m³ demonstrates the Spokane County Maintenance Area continues to qualify for the LMP approach. The 5-year PM₁₀ design value estimate for 2012–2016 is 84 µg/m³. The design value meets LMP qualification criteria.

The 3-year PM₁₀ design value at or below 1.0 demonstrates compliance with the PM₁₀ NAAQS. The design value is the number of 24-hour exceedances of 150 µg/m³, averaged over three years. The 2016 PM₁₀ design value for Augusta Avenue is 0. This design value is in attainment with the standard.

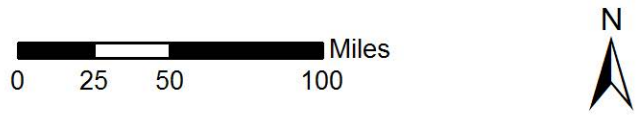


Figure 6. Map of Washington PM₁₀ sites

Colville, E. 1st

| | |
|---|---|
| Site Information | |
| Site Name | Colville, E. 1st |
| AQS ID | 530650005 |
| GPS coordinates | LAT/LONG: 048 54' 69"/117 90' 32" |
| Location | Rooftop of Colville Fire Department |
| Address | 261 E. 1st Street, Colville |
| County | Stevens |
| Distance to road from gaseous probe (meters) | 20 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Asphalt, cement, grass |
| Statistical Area | Not in an urban area |
| Monitor Information Pollutant, POC | |
| Parameter code | 81102 |
| Basic monitoring objectives(s) | NAQQS Compliance |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Thermo TEOM |
| Method code | 079 |
| FRM/FEM/ARM/other | FEM |
| Collecting Agency | Ecology |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 11/96 est. Relocated 10/15 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 15 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | 535 |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Teflon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | Relocated due to an unexpected eviction |
| Suitable for comparison against the PM ₁₀ NAAQS? | Yes |
| Design value | N/A |

Purpose: Colville E. 1st is a neighborhood scale site for PM₁₀ established in 1996 and relocated in 2015. The Colville site is located in a commercial/residential area on the roof of the Colville fire station. Colville was relocated from the rooftop of the Stevens County Courthouse to the Colville fire station.

Exceedances: Colville has exceeded the standard for PM₁₀ in 2014 once, 2015 twice and 2016 once.

Kennewick, Metaline Avenue

(BCAA)

| | |
|--|--|
| Site Information | |
| Site Name | Kennewick, Metaline Avenue |
| AQS ID | 530050002 |
| GPS coordinates | LAT/LONG: 046 13' 06"/119 12' 03" |
| Location | Rooftop Kennewick Skills Center |
| Address | 5929 West Metaline, Kennewick |
| County | Benton |
| Distance to road from gaseous probe (meters) | 84 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Rooftop- asphalt, ground-grass and asphalt |
| Statistical Area | Richland-Kennewick-Pasco, WA |

Kennewick, Metaline Avenue Monitor Information

| | |
|---|--------------------------------|
| Pollutant, POC | |
| Parameter code | 81102 |
| Basic monitoring objectives(s) | NAQQS Compliance |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Thermo TEOM |
| Method code | 079 |
| FRM/FEM/ARM/other | FEM |
| Collecting Agency | Benton County Clean Air Agency |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 10/94 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 7 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | 18 |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | 66 |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | 6 |
| Unrestricted airflow (degrees) | 360 |
| Probe material for reactive gases | Teflon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the PM ₁₀ NAAQS? | Yes |
| Design value | 1.6 (0.4) |

Purpose: Kennewick is a neighborhood scale site for PM₁₀ established in 1994 and located in the downtown Kennewick area. It is representative of Kennewick and the surrounding area which is subject to windblown dust.

Exceedances: This site exceeded the standard for PM₁₀ three times in 2015. Ecology flagged all three 2015 exceedances and plans to submit demonstrations on two of them.

Spokane, Augusta Avenue

(SRCAA)

Site Information

| | |
|--|--|
| Site Name | Spokane, Augusta Avenue. |
| AQS ID | 530630021 |
| GPS coordinates | LAT/LONG: 047 39' 39"/117 21' 26" |
| Location | Rooftop of the Spokane Region Clean Air Agency |
| Address | 3104 E. Augusta Avenue, Spokane |
| County | Spokane |
| Distance to road from gaseous probe (meters) | 27 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Membrane roof, asphalt |
| Statistical Area | Spokane, WA |

Monitor Information Pollutant, POC

| | |
|---|---------------------------------|
| Parameter code | 81102 |
| Basic monitoring objectives(s) | NAQQS Compliance |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS - Collocated |
| Instrument manufacturer and model | Thermo TEOM |
| Method code | 079 |
| FRM/FEM/ARM/other | FEM/FRM |
| Collecting Agency | Spokane Region Clean Air Agency |
| Analytical Lab | Ecology |
| Reporting Agency | Ecology |
| Spatial scale | Middle |
| Monitoring start date | 3/09 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 3 |
| Distance from supporting structure (meters) | 0.5 |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Teflon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the PM ₁₀ NAAQS? | Yes |
| Design value | 0.35 |

Purpose: Augusta Avenue is a middle scale site for PM₁₀ located in a commercial area of Spokane. The site is representative of the Spokane area, which has been a past PM₁₀ nonattainment area.

Exceedances: This site has not exceeded the 24-hour PM₁₀ standard in the last three years.

Yakima, South 4th

(YRCAA)

Site Information

| | |
|--|---|
| Site Name | Yakima, South 4th |
| AQS ID | 530770009 |
| GPS coordinates | LAT/LONG: 046 35' 42"/120 30' 44" |
| Location | Rooftop of Yakima Comprehensive Mental Health |
| Address | 402 South 4th Avenue, Yakima |
| County | Yakima |
| Distance to road from gaseous probe (meters) | N/A |
| Traffic count (AADT, year) | N/A |
| Groundcover | Membrane roof, cement |
| Statistical Area | Yakima, WA |

Monitor Information Pollutant, POC

| | |
|---|--------------------------------|
| Parameter code | 81102 |
| Basic monitoring objectives(s) | NAQQS Compliance |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Thermo TEOM |
| Method code | 079 |
| FRM/FEM/ARM/other | FEM |
| Collecting Agency | Yakima Region Clean Air Agency |
| Analytical Lab | Ecology |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 4/00, TEOM FEM 9/15 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 2 rooftop, 12 ground |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | 7 |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | 34 |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Teflon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the PM ₁₀ NAAQS? | Yes |
| Design value | 0 |

Purpose: South 4th is a neighborhood scale site for PM₁₀ located in a commercial/residential area near downtown. The site is representative of the Yakima area, a past PM₁₀ nonattainment area.

Exceedances: This site has not exceeded standard for PM₁₀ in over 10 years.

Table 9. PM2.5, Parameter Codes 88101, 88502

| AQS# | Site Name | Est. | Type | Sample Type | Sampling Frequency | Action for 2017 |
|---------------|----------------------------|-------------|--------------------|--------------------|---------------------------|------------------------|
| 53027200 2 | Aberdeen Division St. | 8/02 | SLAMS | Continuous | Continuous | Continue |
| 53033003 7 | Bellevue, Bellevue Way | 4/02 | SLAMS | Continuous | Continuous | Discontinue |
| 53033003 1 | Bellevue | 11/16 | SLAMS | Continuous | Continuous | Continue |
| 53073001 5 | Bellingham, Yew St. | 11/12 | SLAMS | Continuous | Continuous | Continue |
| 53035000 7 | Bremerton Spruce | 5/12 | SLAMS | Continuous | Continuous | Continue |
| 53003000 4 | Clarkston | 3/07 | SLAMS | Continuous | Continuous | Continue |
| 53041000 4 | Chehalis | 12/09 | SLAMS | Continuous | Continuous | Continue |
| 53009001 3 | Cheeka Peak | 5/06 | Rural NC ore | Continuous | Continuous | Continue |
| 53065000 5 | Colville E. 1st | 10/15 | SLAMS | Continuous | Continuous | Continue |
| 53061002 0 | Darrington, Fir St. | 12/10 | SLAMS | Continuous | Continuous | Continue |
| 53013000 2 | Dayton, W. Main | 2/09 | SLAMS | Continuous | Continuous | Continue |
| 53037000 2 | Ellensburg | 10/07 | SLAMS | Continuous | Continuous | Continue |
| 53005000 2 | Kennewick, Metaline Ave. | 8/04 | SLAMS | Continuous | Continuous | Continue |
| 53033200 4 | Kent, James & Central | 12/10 | SLAMS | Continuous | Continuous | Continue |
| 53067001 3 | Lacey, College St. | 1/02 | SLAMS | Continuous | Continuous | Continue |
| 53075000 5 | LaCrosse, Hill St. | 7/02 | SLAMS | Continuous | Continuous | Continue |
| 53015001 5 | Longview, 30th Ave. | 3/03 | SLAMS | Continuous | Continuous | Continue |
| 53061000 5 | Lynnwood, 212th | 1/11 | SLAMS | Continuous | Continuous | Continue |
| 53061000 5 | Lynnwood, 212th | 9/13 | SLAMS | Collocated | Continuous | Continue |
| 53061100 7 | Marysville, 7th Ave. | 2/10 | SLAMS | Continuous | Continuous | Continue |
| 53061100 7 | Marysville, 7th Ave. | 7/12 | SLAMS | Collocated | Continuous | Continue |
| 53021000 2 | Mesa, Pepoit Way | 1/03 | SLAMS | Continuous | Continuous | Continue |
| 53025100 2 | Moses Lake, Balsam St. | 1/03 | SLAMS | Continuous | Continuous | Continue |
| 53057001 5 | Mt. Vernon, S Second St. | 8/02 | SLAMS | Continuous | Continuous | Continue |
| 53033001 7 | North Bend, North Bend Way | 3/03 | SLAMS | Continuous | Continuous | Continue |

| AQS# | Site Name | Est. | Type | Sample Type | Sampling Frequency | Action for 2017 |
|-----------|-----------------------------|-------|--------|-------------|--------------------|-----------------|
| 530090016 | Port Angeles, E. 5th St. | 4/15 | SLAMS | Continuous | Continuous | Continue |
| 530310003 | Port Townsend, San Juan Ave | 02/01 | SLAMS | Continuous | Continuous | Continue |
| 530750003 | Pullman, Dexter Ave. | 3/01 | SLAMS | Continuous | Continuous | Continue |
| 530531018 | Puyallup, 128th St. | 1/03 | SLAMS | Continuous | Continuous | Continue |
| 530010003 | Ritzville, Alder St. | 3/01 | SLAMS | Continuous | Continuous | Continue |
| 530750006 | Rosalia, Josephine St. | 6/02 | SLAMS | Continuous | Continuous | Continue |
| 530330080 | Seattle, Beacon Hill | 2/10 | NCORE | SEQ/Cont. | 1/3 | Continue |
| 530330057 | Seattle, E Marginal Way | 12/09 | SLAMS | Continuous | Continuous | Continue |
| 530330030 | Seattle 10th & Weller | 6/14 | SLAMS | Continuous | Continuous | Continue |
| 530450007 | Shelton, W. Franklin | 4/11 | SLAMS | Continuous | Continuous | Continue |
| 530630021 | Spokane, Augusta | 3/13 | SLAMS | Continuous | Continuous | Continue |
| 530630047 | Spokane, Monroe St. | 7/03 | SLAMS | Continuous | Continuous | Continue |
| 530770005 | Sunnyside, S. 16th | 9/15 | SLAMS | Continuous | Continuous | Continue |
| 530530024 | Tacoma 36th | 1/16 | SLAMS | Continuous | Continuous | Continue |
| 530530031 | Tacoma, Alexander Ave. | 1/03 | SLAMS | Continuous | Continuous | Continue |
| 530530029 | Tacoma, S. L St. | 1/10 | SLAMS | SEQ/Cont. | 1/1 | Continue |
| 530530029 | Tacoma, S. L St. | 4/12 | Co-loc | SEQ/Cont. | 1/12 | Continue |
| 530110024 | Vancouver NE 84th | 12/14 | SLAMS | FEM | Continuous | Continue |
| 530710005 | Walla Walla, 12th St. | 1/02 | SLAMS | Continuous | Continuous | Continue |
| 530070011 | Wenatchee Fifth St. | 12/12 | SLAMS | Continuous | Continuous | Continue |
| 530110022 | Yacolt, Yacolt Rd. | 6/07 | SLAMS | Continuous | Continue | Continue |
| 530770009 | Yakima, S 4th Ave. | 5/11 | SLAMS | SEQ/Cont. | 1/3 | Continue |

Additional Monitors: To be determined.

Recommendations/Modifications: ORCAA has delayed relocation of the Aberdeen site until 2018. Puget Sound Clean Air Agency (PSCAA) lost the lease at Lake Forest Park and the site was discontinued on 2/29/2016. During the winter of 2014 and 2015, PSCAA performed a mobile nephelometer study in the Shoreline, Lake Forest Park, and Lynnwood communities.

Mobile studies indicated some locations in Shoreline that would be able to replace the LFP monitor for calling burn bans in North King County. Discussions with other entities within Shoreline are ongoing. PSCAA is planning a new site in Tukwila based on a recent study. Inclusion in the Washington network is planned in late 2017.

Notes: Nephelometers are not EPA equivalent method instruments and design values are estimates. Ecology uses WAQA for reporting PM_{2.5} to inform and protect citizens of Washington. Ecology's goal is to keep 24-hour concentrations below 20µg/m³. Monitors in certain areas of Washington are not intended to be solely NAAQS based. Selected monitors are used for protection of human health by making curtailment calls during home heating season, making daily decisions for agricultural burning and health information- reporting PM_{2.5} values.

Ecology and its partners do not operate any seasonal PM_{2.5} monitors.

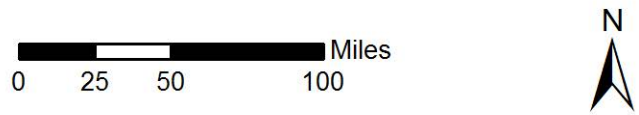


Figure 7. Map of Washington PM_{2.5} sites

Aberdeen, Division Street

(ORCAA) - Relocation delayed

| | |
|--|-----------------------------------|
| Site Information | |
| Site Name | Aberdeen Division Street |
| AQS ID | 530272002 |
| GPS coordinates | LAT/LONG: 046 58' 21"/123 49' 54" |
| Location | Harbor High School |
| Address | 359 North Division, Aberdeen |
| County | Grays Harbor |
| Distance to road from gaseous probe (meters) | 40 feet |
| Traffic count (AADT, year) | N/A |
| Groundcover | Asphalt |
| Statistical Area | Not in an MSA |
| Monitor Information Pollutant, POC | |
| Parameter code | 88502 (POC 4) |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Radiance Research M903 |
| Method code | 771 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Olympic Region Clean Air Agency |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 8/02 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 10 from ground 2 from roof |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Tygon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | Relocation in 2017/2018 |
| Suitable for comparison against the PM _{2.5} NAAQS? | No |
| Design value | 5.1 Annual/12.0 24hr |

Purpose: Aberdeen is a neighborhood scale site. The site represents impacts to Aberdeen and the immediate Grays Harbor area from smoke related to home heating and mobile sources. It is used for curtailment calls during home heating season.

Bellevue, Bellevue Way (Discontinued)

| | |
|--|------------------------------------|
| Site Information | |
| Site Name | Bellevue, Bellevue Way |
| AQS ID | 530330037 |
| GPS coordinates | LAT/LONG: 047 36' 47"/122 12' 06" |
| Location | Rooftop of Alvin Goldfarb Jewelers |
| Address | 305 Bellevue Way, Bellevue |
| County | King |
| Distance to road from gaseous probe (meters) | 20 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Paved, asphalt and concrete |
| Statistical Area | Seattle-Bellevue-Everett, WA |
| Monitor Information Pollutant, POC | |
| Parameter code | 88502 (POC 4) |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Radiance Research M903 |
| Method code | 771 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Ecology |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 4/02 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 2 |
| Distance from supporting structure (meters) | 2 |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | 30 |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Tygon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | Site relocation in 2017 |
| Suitable for comparison against the PM _{2.5} NAAQS? | No |
| Design value | 4.7 Annual/12.0 24hr |

Purpose: Bellevue Way is a neighborhood scale site. It is representative of mobile source and smoke impacts in the area and used for curtailment calls during home heating season.

Bellevue, SE 12th Street (New)

| | |
|--|--|
| Site Information | |
| Site Name | Bellevue, SE 12 th Street |
| AQS ID | 530330031 |
| GPS coordinates | LAT/LONG: 047 60' 86"/122 14' 83" |
| Location | Rooftop of Lake Hills Elementary School |
| Address | 14310 SE 12 th Street, Bellevue |
| County | King |
| Distance to road from gaseous probe (meters) | 33 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Paved, asphalt and concrete, grass |
| Statistical Area | Seattle-Bellevue-Everett, WA |
| Monitor Information Pollutant, POC | |
| Parameter code | 88502 (POC 4) |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Met One BAM 1020 |
| Method code | 170 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Ecology |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 11/16 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 2 |
| Distance from supporting structure (meters) | 2 |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | 30 |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Tygon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | No |
| Suitable for comparison against the PM _{2.5} NAAQS? | No |
| Design value | N/A |

Purpose: Bellevue SE 12 Street is a replacement site for Bellevue Way. It is a neighborhood scale site. It is representative of mobile source and smoke impacts in the area and used for curtailment calls during home heating season. See Appendix C.

Bellingham, Yew Street

(NWCAA)

| | |
|--|---------------------------------------|
| Site Information | |
| Site Name | Bellingham, Yew Street |
| AQS ID | 530730025 |
| GPS coordinates | LAT/LONG: 048 45' 46"/122 26' 25" |
| Location | Top of building (7-11) |
| Address | 2412 Yew Street, Bellingham |
| County | Whatcom |
| Distance to road from gaseous probe (meters) | 30 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Membrane roof, asphalt |
| Statistical Area | Bellingham, WA |
| Monitor Information Pollutant, POC | |
| Parameter code | 88101 (POC 3) |
| Basic monitoring objectives(s) | NAQQS Compliance |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Thermo 1405-F |
| Method code | 581 |
| FRM/FEM/ARM/other | FEM |
| Collecting Agency | NWCAA |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 9/88 established, 11/12 FEM installed |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 3 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | 20 |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Tygon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the PM _{2.5} NAAQS? | Yes |
| Design value | 6.3 Annual/16.0 24hr |

Purpose: Bellingham Yew Street is a neighborhood scale site. It is impacted by smoke related to home heating in the Bellingham/Whatcom County area and used for curtailment calls during home heating season.

Bremerton, Spruce Avenue

(PSCAA)

| | |
|--|-----------------------------------|
| Site Information | |
| Site Name | Bremerton, Spruce |
| AQS ID | 530350007 |
| GPS coordinates | LAT/LONG: 047 59' 26"/122 62' 73" |
| Location | Shelter |
| Address | 3250 Spruce Avenue, Bremerton |
| County | Kitsap |
| Distance to road from gaseous probe (meters) | 100 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Grass |
| Statistical Area | Bremerton, WA |
| Monitor Information Pollutant, POC | |
| Parameter code | 88101 (POC 3) |
| Basic monitoring objectives(s) | NAQQS Compliance |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Thermo 8500C |
| Method code | 181 |
| FRM/FEM/ARM/other | FEM |
| Collecting Agency | Puget Sound Clean Air Agency |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 5/12 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 3 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | 150 |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Tygon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the PM _{2.5} NAAQS? | Yes |
| Design value | 4.7 Annual/12.0 24hr |

Purpose: Bremerton Spruce is a neighborhood scale site. This site provides air quality information to a population of 280,000 Kitsap County residents.

Cheeka Peak

(ORCAA)

Site Information

| | |
|--|-----------------------------------|
| Site Name | Cheeka Peak |
| AQS ID | 530090013 |
| GPS coordinates | LAT/LONG: 048 17' 12"/124 37' 13" |
| Location | Cheeka Peak (tree farm) |
| Address | Cheeka Peak |
| County | Clallam |
| Distance to road from gaseous probe (meters) | 7 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Shrubs, grass and gravel/dirt |
| Statistical Area | Not in an MSA |

Monitor Information Pollutant, POC

| | |
|--|---------------------------------|
| Parameter code | 88502 (POC 4) |
| Basic monitoring objectives(s) | Research |
| Site type(s) | Background/Regional Transport |
| Monitor type(s) | Rural NCore |
| Instrument manufacturer and model | Radiance Research M903 |
| Method code | 771 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Olympic Region Clean Air Agency |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Regional |
| Monitoring start date | 5/06 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 5.5 |
| Distance from supporting structure (meters) | 0.3 |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | 21 |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | 0.3 to 0.6 |
| Unrestricted airflow (degrees) | 175 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Tygon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the PM _{2.5} NAAQS? | No |
| Design value | 2.2 Annual/6.0 24hr |

Purpose: Cheeka Peak is a regional scale NCore site established in 2006. Cheeka Peak is a national transport site.

Chehalis, Market Boulevard

| | |
|--|---------------------------------|
| Site Information | |
| Site Name | Chehalis, Market Boulevard |
| AQS ID | 530410004 |
| GPS coordinates | LAT/LONG: 046 6640"/122 96' 73" |
| Location | Rooftop |
| Address | 350 North Market, Chehalis |
| County | Lewis |
| Distance to road from gaseous probe (meters) | 20 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Membrane roof |
| Statistical Area | Not in an urban area |
| Monitor Information Pollutant, POC | |
| Parameter code | 88502 (POC 4) |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Radiance Research M903 |
| Method code | 771 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Ecology |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 12/09 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 12 |
| Distance from supporting structure (meters) | 0.3 |
| Distance from obstructions on roof (meters) | 11 |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | 25 |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Tygon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the PM _{2.5} NAAQS? | No |
| Design value | 5.9 Annual/16.0 24hr |

Purpose: Chehalis is a neighborhood scale site established in late 2009. It is located in a mixed commercial/residential area of Chehalis. It is impacted by smoke from home heating and used for curtailment calls during home heating season.

Clarkston, STP

| | |
|--|---|
| Site Information | |
| Site Name | Clarkston, STP |
| AQS ID | 530030004 |
| GPS coordinates | LAT/LONG: 046 25' 32"/117 3' 35" |
| Location | Clarkston sewage treatment plant |
| Address | 13th Street and Port Way, Clarkston |
| County | Asotin |
| Distance to road from gaseous probe (meters) | 150 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Grass |
| Statistical Area | Not in an urban area |
| Monitor Information Pollutant, POC | |
| Parameter code | 88502 (POC 4) |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Radiance Research M903 |
| Method code | 771 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Ecology |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 6/93 established, 3/07 nephelometer installed |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 3 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Tygon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the PM _{2.5} NAAQS? | No |
| Design value | N/A* |

*Insufficient data.

Purpose: Clarkston is a neighborhood scale site established in 1993 as a PM₁₀ site and converted to PM_{2.5} in 2007. It is located in a mixed/residential area of Clarkston at the sewage treatment plant.

Colville, E. 1st

| | |
|--|---|
| Site Information | |
| Site Name | Colville, E. 1st |
| AQS ID | 530650005 |
| GPS coordinates | LAT/LONG: 048 54' 46"/117 90' 32" |
| Location | Rooftop of the Colville Firehouse |
| Address | 261 E. 1 st Street, Colville |
| County | Stevens |
| Distance to road from gaseous probe (meters) | 20 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Asphalt, Cement, grass |
| Statistical Area | Not in an urban area |
| Monitor Information Pollutant, POC | |
| Parameter code | 88502 (POC 4) |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Radiance Research M903 |
| Method code | 771 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Ecology |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 12/96 est. 1/02 Neph, 10/15 Relocation |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 15 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | 50+ |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Tygon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the PM _{2.5} NAAQS? | No |
| Design value | N/A |

Purpose: Colville E. 1st is a neighborhood scale site for PM_{2.5} originally established in 1996 as a PM₁₀ site and converted to PM_{2.5} in 2009 and relocated in 2015. It is located in the commercial/residential area of Colville on the roof of the Colville Firehouse.

Darrington, Fir Street

(PSCAA)

Site Information

| | |
|--|-----------------------------------|
| Site Name | Darrington, Fir Street |
| AQS ID | 530610020 |
| GPS coordinates | LAT/LONG: 048 14' 49"/121 36' 11" |
| Location | Shelter |
| Address | 1085 Fir Street, Darrington |
| County | Snohomish |
| Distance to road from gaseous probe (meters) | 120 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Asphalt |
| Statistical Area | Not in an urban area |

Monitor Information Pollutant, POC

| | |
|--|------------------------------|
| Parameter code | 88101 (POC 3) |
| Basic monitoring objectives(s) | NAQCS Compliance |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Thermo 8500C FEM |
| Method code | 181 |
| FRM/FEM/ARM/other | FEM |
| Collecting Agency | Puget Sound Clean Air Agency |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 6/07 established, 12/10 FEM |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 3 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | 25 - Building |
| Distance from trees (meters) | 200 |
| Distance to furnace or incinerator flue (meters) | 200 |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Tygon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the PM _{2.5} NAAQS? | No |
| Design value | 6.1 Annual/30.0 24hr |

Purpose: Darrington is a neighborhood scale site. Located in a residential area, it is impacted by smoke from home heating.

Dayton, 206 West Main

Site Information

| | |
|--|------------------------------|
| Site Name | Dayton |
| AQS ID | 530130002 |
| GPS coordinates | LAT/LONG: 046.3180"/117.9850 |
| Location | Shelter |
| Address | 206 West Main, Dayton |
| County | Columbia |
| Distance to road from gaseous probe (meters) | 33 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Gravel, asphalt |
| Statistical Area | Not in an urban area |

Monitor Information Pollutant, POC

| | |
|--|------------------------|
| Parameter code | 88502 (POC 4) |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Radiance Research M903 |
| Method code | 771 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Ecology |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 2/09 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 6 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Tygon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the PM _{2.5} NAAQS? | No |
| Design value | 4.4 Annual/13.0 24hr |

Purpose: Dayton is a neighborhood scale small-community site. It is impacted by smoke from burning activities in the area. Site data is used for curtailment calls and burn/no burn calls during agricultural burning seasons.

Ellensburg, Ruby Street

| | |
|--|--|
| Site Information | |
| Site Name | Ellensburg, Ruby Street |
| AQS ID | 530370002 |
| GPS coordinates | LAT/LONG: 046 59' 37"/120 32' 42" |
| Location | Rooftop of Hal Holms Library |
| Address | 201 North Ruby Street, Ellensburg |
| County | Kittitas |
| Distance to road from gaseous probe (meters) | 33 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Asphalt, cement |
| Statistical Area | Not in an urban area |
| Monitor Information Pollutant, POC | |
| Parameter code | 88101 (POC 5) |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Met One BAM 1020 |
| Method code | 170 |
| FRM/FEM/ARM/other | FEM |
| Collecting Agency | Ecology |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 11/95 established, 10/07 Neph, 11/14 FEM |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 3 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Tygon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | Met One BAM 1020 testing in 2016/2017 |
| Suitable for comparison against the PM _{2.5} NAAQS? | No |
| Design value | N/A* |

*Insufficient data.

Purpose: Ellensburg is a neighborhood scale site. Upgraded to an FEM in November 2014. It is located in a residential area of Ellensburg and impacted by smoke from home heating devices. This site is used for curtailment calls during home heating season.

Kennewick, Metaline Avenue

(BCAA)

| | |
|--|---|
| Site Information | |
| Site Name | Kennewick, Metaline Avenue |
| AQS ID | 530050002 |
| GPS coordinates | LAT/LONG: 046 13' 06"/119 12' 03" |
| Location | Rooftop of Kennewick Skills Center |
| Address | 5929 West Metaline, Kennewick |
| County | Benton |
| Distance to road from gaseous probe (meters) | 84 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Rooftop-asphalt, ground grass and asphalt |
| Statistical Area | Richland, Kennewick, and Pasco, WA |
| Monitor Information Pollutant, POC | |
| Parameter code | 88502 (POC 4) |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Radiance Research M903 |
| Method code | 771 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Benton Clean Air Agency |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 8/04 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 7 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | 18 |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | 66 |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | 6 |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Tygon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the PM _{2.5} NAAQS? | No |
| Design value | N/A* |

*Insufficient data.

Purpose: Kennewick is a neighborhood scale site. The site is impacted from smoke from home heating devices and agricultural sources, and is geographically representative of the Tri-Cities area. Kennewick is used for curtailment calls during home heating season.

Kent, James, and Central

(PSCAA)

| | |
|--|-----------------------------------|
| Site Information | |
| Site Name | Kent, James and Central |
| AQS ID | 530332004 |
| GPS coordinates | LAT/LONG: 047 23' 10"/122 13' 55" |
| Location | Shelter |
| Address | 614 Railroad Avenue North, Kent |
| County | King |
| Distance to road from gaseous probe (meters) | 25 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Asphalt, landscaping |
| Statistical Area | Seattle-Bellevue-Everett, WA |
| Monitor Information Pollutant, POC | |
| Parameter code | 88101(POC 3) |
| Basic monitoring objectives(s) | NAQQS Compliance |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Thermo 8500c FEM |
| Method code | 181 |
| FRM/FEM/ARM/other | FEM |
| Collecting Agency | Puget Sound Clean Air Agency |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 7/87 established, 12/10 FEM |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 3 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | 120 |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Tygon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the PM _{2.5} NAAQS? | Yes |
| Design value | 6.2 Annual/22.0 24hr |

Purpose: Kent is a neighborhood scale site. It is impacted from mobile sources, light industry, and smoke from home heating devices. This site is representative of Kent and the Kent Valley area.

Lacey, College Street

(ORCAA)

| | |
|--|-----------------------------------|
| Site Information | |
| Site Name | Lacey, College Street |
| AQS ID | 530670013 |
| GPS coordinates | LAT/LONG: 047 01' 43"/122 49' 15" |
| Location | Mountain View Elementary School |
| Address | 1900 College Street SE, Lacey |
| County | Thurston |
| Distance to road from gaseous probe (meters) | 40 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Grass |
| Statistical Area | Olympia, WA |
| Monitor Information Pollutant, POC | |
| Parameter code | 88502 (POC 4) |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Ecotech M90003/1000G |
| Method code | 812 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Olympic Region Clean Air Agency |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 1/02 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 10 from ground |
| Distance from supporting structure (meters) | 2 |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Tygon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the PM _{2.5} NAAQS? | No |
| Design value | 6.0 Annual/20.0 24hr |

Purpose: Lacey, College Street is a neighborhood scale site. It is impacted by smoke from home heating devices. The site is representative of the Lacey/Olympia/Thurston County area. The monitor at this site is also used to determine compliance with the PM₁₀ NAAQS as well as documenting the area continues to qualify for EPA's LMP option.

LaCrosse, Hill Street

| | |
|--|-----------------------------------|
| Site Information | |
| Site Name | LaCrosse, Hill Street |
| AQS ID | 530750005 |
| GPS coordinates | LAT/LONG: 046 48' 55"/117 52' 26" |
| Location | Rooftop |
| Address | 100 Hill Street, LaCrosse |
| County | Whitman |
| Distance to road from gaseous probe (meters) | 100 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Grass |
| Statistical Area | Not in an urban area |
| Monitor Information Pollutant, POC | |
| Parameter code | 88502 (POC 4) |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Radiance Research M903 |
| Method code | 771 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Ecology |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 7/02 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 3 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Tygon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the PM _{2.5} NAAQS? | No |
| Design value | 4.7 Annual/16.0 24hr |

Purpose: LaCrosse is a neighborhood scale small-community site. It is impacted by smoke from burning. LaCrosse is used for making agricultural burn/no-burn decisions and curtailment calls during home heating season. It also provides modeling and mapping information.

Longview, 30th Avenue

(SWCAA)

| | |
|--|-----------------------------------|
| Site Information | |
| Site Name | Longview, 30th Avenue |
| AQS ID | 530150015 |
| GPS coordinates | LAT/LONG: 046 08' 22"/122 57' 43" |
| Location | Olympic Middle School |
| Address | 1324 30th Avenue, Longview |
| County | Cowlitz |
| Distance to road from gaseous probe (meters) | 18 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Grass, asphalt |
| Statistical Area | Longview, WA |
| Monitor Information Pollutant, POC | |
| Parameter code | 88502 (POC 4) |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Radiance Research M903 |
| Method code | 771 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Southwest Clean Air Agency |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 3/03 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 10 |
| Distance from supporting structure (meters) | 0.5 |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Tygon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the PM _{2.5} NAAQS? | No |
| Design value | 5.6 Annual/16.0 24hr |

Purpose: Longview is a neighborhood scale site. It is impacted by smoke from home heating. It is representative of the Longview/Kelso area and used for curtailment calls during home heating season.

Lynnwood, 212th Street

(PSCAA)

| | |
|--|-----------------------------------|
| Site Information | |
| Site Name | Lynnwood, 212th Street |
| AQS ID | 530610005 |
| GPS coordinates | LAT/LONG: 047 48' 23"/122 19' 00" |
| Location | Rooftop Snohomish PUD |
| Address | 6120 212th Street SW, Lynnwood |
| County | Snohomish |
| Distance to road from gaseous probe (meters) | 40 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Asphalt |
| Statistical Area | Seattle-Bellevue-Everett, WA |
| Monitor Information Pollutant, POC | |
| Parameter code | 88101 (POC 3 & 4) |
| Basic monitoring objectives(s) | NAQQS Compliance |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Thermo 8500C FEM |
| Method code | 181 |
| FRM/FEM/ARM/other | FEM |
| Collecting Agency | Puget Sound Clean Air Agency |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 1/11 FEM |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 4 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | 1 rails |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | 50 |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | 2 |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Teflon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the PM _{2.5} NAAQS? | Yes |
| Design value | 5.1 Annual/20.0 24hr |

Purpose: Lynnwood is a neighborhood scale site. It is impacted by smoke during home heating season. Lynnwood is representative of Lynnwood and South Snohomish County.

Marysville, 7th Avenue

(PSCAA)

| | |
|--|---|
| Site | |
| Site Name | Marysville, 7th Avenue |
| AQS ID | 530611007 |
| GPS coordinates | LAT/LONG: 048 03' 18"/122 10' 33" |
| Location | Marysville Junior High School |
| Address | 1605 7th Avenue, Marysville |
| County | Snohomish |
| Distance to road from gaseous probe (meters) | 15 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Grass |
| Statistical Area | Seattle-Bellevue-Everett, WA |
| Monitor Information Pollutant, POC | |
| Parameter code | 88101 (POC 3 & 4) |
| Basic monitoring objectives(s) | NAQQS Compliance |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Thermo 8500C FEM |
| Method code | 181 & 181 |
| FRM/FEM/ARM/other | FEM & Collocated FEM |
| Collecting Agency | Puget Sound Clean Air Agency |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 9/91 established, 2/10 FEM, 7/12 FEM Collocated |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 3 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | 75 |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | 2 |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Teflon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the PM _{2.5} NAAQS? | Yes |
| Design value | 7.4 FEM Annual/28.0 FEM 24hr |

Purpose: Marysville is a neighborhood scale site. It is impacted by smoke during home heating season, mobile sources, and light industry. Marysville is representative of Marysville and the North Snohomish County area.

Mesa, Pepiot Way

| | |
|--|-----------------------------------|
| Site Information | |
| Site Name | Mesa, Pepiot Way |
| AQS ID | 530210002 |
| GPS coordinates | LAT/LONG: 046 34' 32"/119 00' 25" |
| Location | Rooftop |
| Address | 200 Pepiot Way, Mesa |
| County | Franklin |
| Distance to road from gaseous probe (meters) | 300 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Grass, scrub |
| Statistical Area | Not in an urban area |
| Monitor Information Pollutant, POC | |
| Parameter code | 88502 (POC 4) |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Radiance Research M903 |
| Method code | 771 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Ecology |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 1/03 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 6 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | 33 |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Tygon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the PM _{2.5} NAAQS? | No |
| Design value | 5.2 Annual/16 24hr |

Purpose: Mesa is a neighborhood scale small-community site. It is impacted by agricultural sources and smoke from home heating. It is also used for daily agricultural burn decisions and curtailment calls during home heating season.

Moses Lake, South Balsam Street

| | |
|--|-----------------------------------|
| Site Information | |
| Site Name | Moses Lake, Balsam Street |
| AQS ID | 530251002 |
| GPS coordinates | LAT/LONG: 047 07' 50"/119 16' 22" |
| Location | Rooftop |
| Address | 412 S Balsam Street, Moses Lake |
| County | Grant |
| Distance to road from gaseous probe (meters) | 25 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Grass |
| Statistical Area | Not in an urban area |
| Monitor Information Pollutant, POC | |
| Parameter code | 88502 (POC4) |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Radiance Research M903 |
| Method code | 771 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Ecology |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 1/03 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 6 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | 2 |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | 25 |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Tygon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the PM _{2.5} NAAQS? | No |
| Design value | 6.1 Annual/19.0 24hr |

Purpose: Moses Lake is a neighborhood scale, small community site. It is by agricultural sources and smoke from home heating sources. It is also used for daily agricultural burn decisions and curtailment calls during home heating season.

Mt. Vernon, South Second Street

(NWCAA)

Site Information

| | |
|--|--|
| Site Name | Mt. Vernon, South Second Street |
| AQS ID | 530570015 |
| GPS coordinates | LAT/LONG: 048 24' 37"/122 20' 16" |
| Location | NWCAA Offices |
| Address | 1600 South Second Street, Mount Vernon |
| County | Skagit |
| Distance to road from gaseous probe (meters) | 25 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Asphalt |
| Statistical Area | Not in an urban area |

Monitor Information Pollutant, POC

| | |
|--|------------------------|
| Parameter code | 88502 (POC 4) |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Radiance Research M903 |
| Method code | 771 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | NWCAA |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 8/02 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 7 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Tygon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the PM _{2.5} NAAQS? | No |
| Design value | 4.1 Annual/11.0 24hr |

Purpose: Mt. Vernon is a neighborhood scale, small community site. It is impacted by home heating devices. Mt. Vernon is used for curtailment calls during home heating season.

North Bend, North Bend Way

| | |
|--|-------------------------------------|
| Site Information | |
| Site Name | North Bend, North Bend Way |
| AQS ID | 530330017 |
| GPS coordinates | LAT/LONG: 047 29' 23"/121 46' 24" |
| Location | USFS Offices |
| Address | 42404 SE North Bend Way, North Bend |
| County | King |
| Distance to road from gaseous probe (meters) | 180 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Grass |
| Statistical Area | Seattle-Bellevue-Everett, WA |
| Information Pollutant, POC | |
| Parameter code | 88502 (POC 4) |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Radiance Research M903 |
| Method code | 771 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Ecology |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 3/03 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 3 |
| Distance from supporting structure (meters) | 1 |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | 20 |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Tygon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the PM _{2.5} NAAQS? | No |
| Design value | 4.2 Annual/11.0 24hr |

Purpose: North Bend is a neighborhood scale transport/background PM_{2.5} site. It is impacted by smoke from home heating devices. North Bend is used for curtailment calls during home heating season. North Bend is collocated with ozone and meteorological equipment.

Port Angeles, East 5th Street

(ORCAA)

| | |
|--|-----------------------------------|
| Site Information | |
| Site Name | Port Angeles, East 5th Street |
| AQS ID | 530090016 |
| GPS coordinates | LAT/LONG: 048 11' 50"/123 43' 64" |
| Location | Fire Station |
| Address | 102 East 5th Street, Port Angeles |
| County | Clallam |
| Distance to road from gaseous probe (meters) | 15 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Grass, asphalt |
| Statistical Area | Not in an MSA |
| Monitor Information Pollutant, POC | |
| Parameter code | 88502 (POC 4) |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Radiance Research M903 |
| Method code | 771 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Olympic Region Clean Air Agency |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 11/99 established, 4/15 relocated |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 20 from ground 2 from roof |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Tygon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | No |
| Suitable for comparison against the PM _{2.5} NAAQS? | No |
| Design value | N/A* |

*Insufficient data.

Purpose: Port Angeles is a neighborhood scale site adjacent to Olympic National Park, a Class I area. It is impacted by smoke from home heating sources. Port Angeles is also used for curtailment calls during home heating season.

Port Townsend, San Juan Avenue

(ORCAA)

| | |
|--|---|
| Site Information | |
| Site Name | Port Townsend, San Juan Avenue |
| AQS ID | 530310003 |
| GPS coordinates | LAT/LONG: 048 07' 45"/122 46' 46" |
| Location | Blue Herron School |
| Address | 3939 San Juan Avenue, Port Townsend |
| County | Jefferson |
| Distance to road from gaseous probe (meters) | 45 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Grass |
| Statistical Area | Not in an MSA |
| Monitor Information Pollutant, POC | |
| Parameter code | 88502 (POC 4) |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Radiance Research M903 |
| Method code | 771 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Olympic Region Clean Air Agency |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 2/00 established, 2/01 nephelometer installed |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 30 from ground 2 from roof |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Tygon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the PM _{2.5} NAAQS? | No |
| Design value | 5.3Annual 5.2/24hr 15 |

Purpose: Port Townsend is a neighborhood scale site. It is impacted by smoke from home heating devices. Port Townsend is used for curtailment calls during home heating season. It is representative of the east Jefferson County area.

Pullman, Dexter Avenue

| | |
|--|-----------------------------------|
| Site Information | |
| Site Name | Pullman, Dexter Avenue |
| AQS ID | 530750003 |
| GPS coordinates | LAT/LONG: 046 43' 28"/117 10' 46" |
| Location | Pullman Public School |
| Address | 240 SE Dexter, Pullman |
| County | Whitman |
| Distance to road from gaseous probe (meters) | 40 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Asphalt, grass |
| Statistical Area | Not in an MSA |
| Monitor Information Pollutant, POC | |
| Parameter code | 88502 (POC 4) |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Ecotech M9003/1000G |
| Method code | 812 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Ecology |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 3/01 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 3 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | 20 |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Tygon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the PM _{2.5} NAAQS? | No |
| Design value | 4.0 Annual/14.0 24hr |

Purpose: Pullman is a neighborhood scale site. It is impacted by smoke from burning. Pullman is used for daily agricultural burn/no-burn decisions and curtailment calls during home heating season.

Puyallup, 128th Street

(PSCAA)

| | |
|--|--------------------------------------|
| Site Information | |
| Site Name | Puyallup, 128th Street |
| AQS ID | 530531018 |
| GPS coordinates | LAT/LONG: 047 08' 24"/122 18' 01" |
| Location | Shelter |
| Address | 9616 128th Street East, Puyallup |
| County | Pierce |
| Distance to road from gaseous probe (meters) | 20 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Gravel, grass |
| Statistical Area | Seattle-Bellevue-Everett, WA |
| Monitor Information Pollutant, POC | |
| Parameter code | 88502 (POC 4) |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Ecotech M9003/1000G |
| Method code | 812 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Puget Sound Clean Air Agency |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 12/91 established, 1/03 nephelometer |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 2 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | 80 |
| Distance to furnace or incinerator flue (meters) | 100 |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Tygon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the PM _{2.5} NAAQS? | No |
| Design value | 5.5 Annual/20.0 24hr |

Purpose: Puyallup is a neighborhood scale site. It is impacted by smoke from home heating devices in the Puyallup South Hill/Pierce County area.

Ritzville, Alder Street

| | |
|--|-----------------------------------|
| Site Information | |
| Site Name | Ritzville, Alder Street |
| AQS ID | 530010003 |
| GPS coordinates | LAT/LONG: 047 07' 43"/118 22' 55" |
| Location | Shelter |
| Address | 109 West Alder, Ritzville |
| County | Adams |
| Distance to road from gaseous probe (meters) | 80 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Asphalt, gravel |
| Statistical Area | Not in an urban area |

| | |
|--|--------------------------------------|
| Monitor Information Pollutant, POC | |
| Parameter code | 88502 (POC 4) |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Radiance Research M903 |
| Method code | 771 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Ecology |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 10/00 established, 3/01 nephelometer |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 8 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Tygon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the PM _{2.5} NAAQS? | No |
| Design value | 5.0 Annual/16.0 24hr |

Purpose: Ritzville is a neighborhood scale, small community site. It is impacted by smoke from burning activities in the area. Ritzville is used for making daily agricultural burn/no-burn decisions and curtailment calls during home heating season.

Rosalia, Josephine Street

| | |
|--|-------------------------------------|
| Site Information | |
| Site Name | Rosalia, Josephine Street |
| AQS ID | 530750006 |
| GPS coordinates | LAT/LONG: 047 13' 52"/117 22' 08" |
| Location | In building |
| Address | 906 South Josephine Street, Rosalia |
| County | Whitman |
| Distance to road from gaseous probe (meters) | 27 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Asphalt |
| Statistical Area | Not in an urban area |

| | |
|--|------------------------|
| Monitor Information Pollutant, POC | |
| Parameter code | 88502 (POC 4) |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Radiance Research M903 |
| Method code | 771 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Ecology |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 6/02 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 2 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | 15 Furnace exhaust |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Tygon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the PM _{2.5} NAAQS? | No |
| Design value | 4.9 Annual/16.0 24hr |

Purpose: Rosalia is a neighborhood scale small-community site. It is impacted by smoke from burning in the area. Rosalia is used for making daily agricultural burning decisions and curtailment calls during home heating season.

Seattle, Beacon Hill

| | |
|--|--------------------------------------|
| Site Information | |
| Site Name | Seattle, Beacon Hill |
| AQS ID | 530330080 |
| GPS coordinates | LAT/LONG: 047 34' 58"/122 18' 30" |
| Location | Jefferson Park/reservoir |
| Address | 4103 Beacon Avenue South, Seattle |
| County | King |
| Distance to road from gaseous probe (meters) | 10 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Gravel, grass |
| Statistical Area | Seattle-Bellevue-Everett, WA |
| Monitor Information Pollutant, POC | |
| Parameter code | 88101 (POC 3 & POC 1) |
| Basic monitoring objectives(s) | NAQQS Compliance |
| Site type(s) | Population Exposure |
| Monitor type(s) | NCORE |
| Instrument manufacturer and model | Thermo 8500C FEM & Thermo 2025 FRM |
| Method code | 181 & 118 |
| FRM/FEM/ARM/other | Thermo 8500 FEM & 2025 FRM |
| Collecting Agency | Ecology |
| Analytical Lab | Ecology |
| Reporting Agency | Ecology |
| Spatial scale | Urban |
| Monitoring start date | 6/79 established, 2/10 FEM installed |
| Current sampling frequency | Continuous & 1/3 |
| Calculated sampling frequency | N/A |
| Sampling season | Year Round |
| Probe height (meters) | 6 FEM 3 FRM |
| Distance from supporting structure (meters) | 2 FRM |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | 2 |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Pyrex |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the PM _{2.5} NAAQS? | Yes |
| Design value | 5.9 FEM Annual/16.0 24hr FEM |

Purpose: Seattle, Beacon Hill is an urban scale NCORE site. Seattle Beacon Hill is collocated with an FEM, FRM, meteorological parameters, as well as toxics and speciation monitoring.

Seattle, Duwamish

(PSCAA)

| | |
|--|---|
| Site Information | |
| Site Name | Seattle, East Marginal Way |
| AQS ID | 530330057 |
| GPS coordinates | LAT/LONG: 047 55' 99"/122 33' 82" |
| Location | Shelter |
| Address | 4700 East Marginal Way |
| County | King |
| Distance to road from gaseous probe (meters) | 90 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Asphalt |
| Statistical Area | Seattle-Bellevue-Everett, WA |
| Monitor Information Pollutant, POC | |
| Parameter code | 88101 (POC 3) |
| Basic monitoring objectives(s) | NAQQS Compliance |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Thermo 1405-F FEM |
| Method code | 581 |
| FRM/FEM/ARM/other | FEM |
| Collecting Agency | Puget Sound Clean Air Agency |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 8/71 established, 12/09 FEM installed 6/2014 relocated/restarted |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 3 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Teflon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the PM _{2.5} NAAQS? | Yes |
| Design value | N/A* |

*Insufficient data.

Purpose: Seattle Duwamish is a neighborhood scale site. It is located in the Duwamish River Valley and impacted by mobile source diesel emissions and industrial sources.

Seattle, 10th and Weller

PSCAA

| | |
|--|-------------------------------------|
| Site Information | |
| Site Name | Seattle, 10th and Weller |
| AQS ID | 530330030 |
| GPS coordinates | LAT/LONG: 047 59' 72"/122 31' 97" |
| Location | Adjacent to I-5 in downtown Seattle |
| Address | 10th and Weller |
| County | King |
| Distance to road from gaseous probe (meters) | 8 |
| Traffic count (AADT, year) | 149,000 (I-5 2015 WSDOT) |
| Groundcover | Concrete, grass |
| Statistical Area | Seattle-Bellevue-Everett, WA |
| Monitor Information Pollutant, POC | |
| Parameter code | 88101 |
| Basic monitoring objectives(s) | NAQQS Compliance |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Met One BAM 1020 |
| Method code | 170 |
| FRM/FEM/ARM/other | FEM |
| Collecting Agency | Ecology |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Micro |
| Monitoring start date | 6/14/BAM 3/17 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 3 |
| Distance from supporting structure (meters) | 1 |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Teflon |
| Residence time for reactive gases (seconds) | 3.2 |
| Changes within the next 18 months? | Transition from FEM TEOM to FEM BAM |
| Suitable for comparison against the NO ₂ NAAQS? | Yes |
| Design value | N/A* |

*Insufficient data.

Purpose: Seattle 10th and Weller is a micro scale, EPA-required, near-road monitoring site. It is located near the International District adjacent to Interstate 5.

Shelton, West Franklin

(ORCAA)

| | |
|--|-------------------------------------|
| Site Information | |
| Site Name | Shelton, West Franklin |
| AQS ID | 530450007 |
| GPS coordinates | LAT/LONG: 047 213' 55"/123 100' 81" |
| Location | Rooftop of fire station |
| Address | 122 West Franklin, Shelton |
| County | Mason |
| Distance to road from gaseous probe (meters) | 20 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Asphalt |
| Statistical Area | Not in an MSA |
| Monitor Information Pollutant, POC | |
| Parameter code | 88502 (POC 3) |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Radiance Research M903 |
| Method code | 771 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Olympic Region Clean Air Agency |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | Relocated 4/11 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 30 from ground 2 from roof |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | 10 |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 320 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Tygon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the PM _{2.5} NAAQS? | No |
| Design value | 5.7 Annual/15.0 24hr |

Purpose: Shelton is a neighborhood scale site. It was established in 2001 and relocated in April 2011. Shelton is impacted by smoke from home heating devices and used for curtailment calls during home heating season.

Spokane, Augusta Avenue

(SRCAA)

| | |
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| Site Information | |
| Site Name | Spokane, Augusta Avenue |
| AQS ID | 530630021 |
| GPS coordinates | LAT/LONG: 047 39' 39"/117 21' 26" |
| Location | Rooftop of SRCAA Offices |
| Address | 3104 E. Augusta Avenue, Spokane |
| County | Spokane |
| Distance to road from gaseous probe (meters) | 27 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Membrane roof, asphalt |
| Statistical Area | Spokane, WA |
| Monitor Information Pollutant, POC | |
| Parameter code | 88101 (POC 5) |
| Basic monitoring objectives(s) | NAQQS Compliance |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Met One BAM 1020 |
| Method code | 170 |
| FRM/FEM/ARM/other | FEM |
| Collecting Agency | Spokane Region Clean Air Agency |
| Analytical Lab | Ecology |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 3/09 established, 9/13 FEM, 10/15 BAM |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 3 |
| Distance from supporting structure (meters) | 1 |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Teflon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the PM _{2.5} NAAQS? | Yes |
| Design value | FEM N/A FRM N/A* |

*Insufficient data due to construction at site.

Purpose: Spokane Augusta Avenue is a neighborhood scale site. It is impacted by smoke from home heating devices and light industrial sources and used for curtailment calls during home heating season.

Spokane, Monroe Street

| | |
|--|--|
| Site Information | |
| Site Name | Spokane Monroe |
| AQS ID | 530630047 |
| GPS coordinates | LAT/LONG: 047 42' 03"/117 25' 30" |
| Location | Rooftop of Ecology Eastern Regional Office |
| Address | North 4601 Monroe Street, Spokane |
| County | Spokane |
| Distance to road from gaseous probe (meters) | 40 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Asphalt |
| Statistical Area | MSA: Spokane, WA |
| Monitor Information Pollutant, POC | |
| Parameter code | 88502 (POC 3) |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Radiance Research M903 |
| Method code | 771 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Ecology |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 1/89 established, 7/03 nephelometer |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 12 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | 40 |
| Distance to furnace or incinerator flue (meters) | 20 (natural gas) |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Teflon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the PM _{2.5} NAAQS? | No |
| Design value | N/A* |

*Insufficient data.

Purpose: Spokane, Monroe Street is a neighborhood scale site. It is impacted by smoke from home heating devices and used for curtailment calls during home heating season.

Sunnyside, South 16th

(YRCAA)

| | |
|--|---|
| Site Information | |
| Site Name | Sunnyside, South 16th |
| AQS ID | 530770005 |
| GPS coordinates | LAT/LONG: 046 35' 42"/120 30' 44" |
| Location | Rooftop (Harrison Middle School) |
| Address | 810 S. 16th Street, Sunnyside |
| County | Yakima |
| Distance to road from gaseous probe (meters) | 70 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Asphalt roof, grass & asphalt on the ground |
| Statistical Area | Yakima, WA |
| Monitor Information Pollutant, POC | |
| Parameter code | 88101 |
| Basic monitoring objectives(s) | NAQQS Compliance |
| Site type(s) | Population Exposure |
| Monitor type(s) | SPMS |
| Instrument manufacturer and model | Radiance Research M903 |
| Method code | 771 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Yakima Region Clean Air Agency |
| Analytical Lab | Ecology |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 9/15 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 2 rooftop, 12 from ground |
| Distance from supporting structure (meters) | 1 |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Teflon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the PM _{2.5} NAAQS? | No |
| Design value | N/A* |

*Insufficient data.

Purpose: Sunnyside is a neighborhood scale site. It is impacted by smoke from home heating, burning sources and used for curtailment calls during home heating season.

Tacoma, S. 36th

| | |
|--|--|
| Site Information | |
| Site Name | Tacoma S. 36th |
| AQS ID | 530530024 |
| GPS coordinates | LAT/LONG Est.: 047 22' 63"/122 46' 25" |
| Location | Jenny Reed Elementary School |
| Address | 1802 S. 36 th , Tacoma |
| County | Pierce |
| Distance to road from gaseous probe (meters) | 30 |
| Traffic count (AADT, year) | 134,000 (I-5 2015 WSDOT) |
| Groundcover | Asphalt, grass |
| Statistical Area | Seattle-Bellevue-Everett, WA |

Monitor Information Pollutant, POC

| | |
|--|----------------------|
| Parameter code | 88101 POC 5 |
| Basic monitoring objectives(s) | NAQQS Compliance |
| Site type(s) | Population Exposure |
| Monitor type(s) | SPMS |
| Instrument manufacturer and model | Met One BAM 1020 FEM |
| Method code | 170 |
| FRM/FEM/ARM/other | FEM |
| Collecting Agency | Ecology |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Micro |
| Monitoring start date | 1/16 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 4 |
| Distance from supporting structure (meters) | 1 |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Teflon |
| Residence time for reactive gases (seconds) | 3.2 |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the NO ₂ NAAQS? | Yes |
| Design Value | N/A* |

*Insufficient data.

Purpose: Tacoma S. 36th is an EPA-required, near-road monitoring site at Jenny Reed Elementary School, adjacent to Interstate 5 in Tacoma. Although not EPA required, Ecology is operating a PM_{2.5} Met One BAM 1020 FEM at this site.

Tacoma, Alexander Avenue

(PSCAA)

| | |
|--|-------------------------------------|
| Site Information | |
| Site Name | Tacoma, Alexander Avenue |
| AQS ID | 530530031 |
| GPS coordinates | LAT/LONG: 047 15' 56"/122 23' 09" |
| Location | Shelter |
| Address | 2301 Alexander Avenue, Tacoma |
| County | Pierce |
| Distance to road from gaseous probe (meters) | 20 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Grass, gravel |
| Statistical Area | Seattle-Bellevue-Everett, WA |
| Monitor Information Pollutant, POC | |
| Parameter code | 88502 (POC 3) |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Radiance Research M903 |
| Method code | 771 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Puget Sound Clean Air Agency |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 1/87 established, 1/03 nephelometer |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 2 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Teflon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the PM _{2.5} NAAQS? | No |
| Design value | 6.9 Annual/19.0 24hr |

Purpose: Tacoma, Alexander Avenue is a neighborhood scale site. It is impacted by smoke from home heating devices and industrial point sources on the Tacoma Tide flats. The site is representative of the NE Tacoma/Fife area.

Tacoma, South L Street

(PSCAA)

| | |
|--|---------------------------------------|
| Site Information | |
| Site Name | Tacoma, L Street |
| AQS ID | 530530029 |
| GPS coordinates | LAT/LONG: 047 11' 11"/122 27' 06" |
| Location | Shelter |
| Address | 7802 South L Street, Tacoma |
| County | Pierce |
| Distance to road from gaseous probe (meters) | 100 |
| Traffic count (AADT, year) | N/Adf |
| Groundcover | Asphalt, grass |
| Statistical Area | Seattle-Bellevue-Everett, WA |
| Monitor Information Pollutant, POC | |
| Parameter code | 88101 (POC 3 & 1) |
| Basic monitoring objectives(s) | NAQQS Compliance |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Thermo 1405-F FEM & Thermo 2025 FRM |
| Method code | 581 & 118 |
| FRM/FEM/ARM/other | FEM & FRM |
| Collecting Agency | Puget Sound Clean Air Agency |
| Analytical Lab | Ecology |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 10/99 established, 1/10 FEM, 4/12 FRM |
| Current sampling frequency | Continuous & 1/1 |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 3 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | 60 |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | 2 |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Teflon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the PM _{2.5} NAAQS? | Yes |
| Design value | 7.0 FEM Annual/28.0 24hr FEM |

Purpose: Tacoma, L Street is a neighborhood scale site. It is impacted by smoke from home heating devices and used for curtailment calls during home heating season.

Vancouver, NE 84th Avenue

(SWCAA)

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|--|---|
| Site Information | |
| Site Name | Vancouver, NE 84th Avenue |
| AQS ID | 530110024 |
| GPS coordinates | LAT/LONG: 45.64' 33"/122 58' 73" |
| Location | Water Station #15 |
| Address | 2722 NE 84th Ave, Vancouver |
| County | Clark |
| Distance to road from gaseous probe (meters) | 170 meters |
| Traffic count (AADT, year) | 8471 (2011) |
| Groundcover | grass |
| Statistical Area | Portland-Vancouver, OR-WA |
| Monitor Information Pollutant, POC | |
| Parameter code | 88101, POC 5 |
| Basic monitoring objectives(s) | NAAQS Compliance |
| Site type(s) | Population exposure/highest conc. |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Met One BAM 1020 FEM |
| Method code | 170 |
| FRM/FEM/ARM/other | FEM |
| Collecting Agency | Southwest Clean Air Agency |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | December 29, 2014, 7/2015 BAM FEM |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 3 |
| Distance from supporting structure (meters) | 0.5 |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | 25 |
| Distance from trees (meters) | 31 |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Anodized aluminum |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the PM _{2.5} NAAQS? | Yes |
| Design value | 7.6 Annual/28.0 24hr (Combined locations) |

Purpose: Vancouver, NE 84th Avenue is a neighborhood scale site. It is impacted by smoke from home heating and used for curtailment calls during home heating season.

Walla Walla, 12th Street

| | |
|--|--------------------------------------|
| Site Information | |
| Site Name | Walla Walla, 12th Street |
| AQS ID | 530710005 |
| GPS coordinates | LAT/LONG: 046 03' 32"/118 21' 06" |
| Location | Rooftop |
| Address | 200 South 12th, Walla Walla |
| County | Walla Walla |
| Distance to road from gaseous probe (meters) | 25 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Asphalt |
| Statistical Area | Not in an urban area |
| Monitor Information Pollutant, POC | |
| Parameter code | 88502 (POC 3) |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Radiance Research M903 |
| Method code | 771 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Ecology |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 5/89 established, 10/02 nephelometer |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 2 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Teflon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the PM _{2.5} NAAQS? | No |
| Design value | 5.4 Annual/16.0 24hr |

Purpose: Walla Walla is a neighborhood scale small-community site. It is impacted by smoke from burning activities in the area and used for curtailment calls during home heating season.

Wenatchee, 5th Street

| | |
|--|-----------------------------------|
| Site Information | |
| Site Name | Wenatchee 5th Street |
| AQS ID | 530070011 |
| GPS coordinates | LAT/LONG: 047 43' 06"/120 34' 19" |
| Location | Wenatchee Valley College |
| Address | 1300 5th Street |
| County | Chelan |
| Distance to road from gaseous probe (meters) | 33 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Gravel, grass |
| Statistical Area | Not in an urban area |
| Monitor Information Pollutant, POC | |
| Parameter code | 88101 (POC 3) |
| Basic monitoring objectives(s) | NAQQS Compliance |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Radiance Research M903 |
| Method code | 771 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Wenatchee |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 12/12 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 3 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | 70 |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Teflon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the PM _{2.5} NAAQS? | Yes |
| Design value | 5.6 Annual/21.0 24hr |

Purpose: Wenatchee 5th is a neighborhood scale site. It is impacted by smoke from home heating, occasional wildfires and used for curtailment calls during home heating season.

Yacolt, Yacolt Road

(SWCAA)

| | |
|--|-----------------------------------|
| Site Information | |
| Site Name | Yacolt, Yacolt Road |
| AQS ID | 530110022 |
| GPS coordinates | LAT/LONG: 045 86' 63"/122 40' 88" |
| Location | Yacolt Primary School |
| Address | 406 West Yacolt Road, Yacolt |
| County | Clark |
| Distance to road from gaseous probe (meters) | 112 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Asphalt, grass |
| Statistical Area | Vancouver, WA |
| Monitor Information Pollutant, POC | |
| Parameter code | 88502 (POC 3) |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Radiance Research M903 |
| Method code | 771 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Southwest Clean Air Agency |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 6/07 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 15 roof |
| Distance from supporting structure (meters) | 0.5 |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Teflon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the PM _{2.5} NAAQS? | No |
| Design value | N/A* |

*Insufficient data.

Purpose: Yacolt is a neighborhood scale site. It is impacted by smoke from home heating devices and used for curtailment calls during home heating season.

Yakima, South 4th Avenue

(YRCAA)

| | |
|--|--|
| Site Information | |
| Site Name | Yakima, South 4th Avenue |
| AQS ID | 530770009 |
| GPS coordinates | LAT/LONG: 046 35' 42"/120 30' 44" |
| Location | Rooftop (Yakima Comprehensive MH) |
| Address | 402 South 4th Avenue, Yakima |
| County | Yakima |
| Distance to road from gaseous probe (meters) | 14 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Asphalt roof, grass & cement on the ground |
| Statistical Area | Yakima, WA |
| Monitor Information Pollutant, POC | |
| Parameter code | 88101 (POC 5 & 1) |
| Basic monitoring objectives(s) | NAQQS Compliance |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Met One BAM 1020 FEM & Thermo 2025 |
| Method code | 170 & 118 |
| FRM/FEM/ARM/other | FEM & FRM |
| Collecting Agency | Yakima Region Clean Air Agency |
| Analytical Lab | Ecology |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 5/00 established, 10/11, 9/15 BAM FEM |
| Current sampling frequency | Continuous & 1/3 |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 3 rooftop, 13 from ground |
| Distance from supporting structure (meters) | 1 |
| Distance from obstructions on roof (meters) | 7 |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | 34 |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Teflon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the PM _{2.5} NAAQS? | Yes |
| Design value | 8.8 FEM Annual/31 24hr |

Purpose: Yakima is a neighborhood scale site. It is impacted by smoke from home heating and burning sources in the area and used for curtailment calls during home heating season.

Exceedances: Yakima exceeded the PM_{2.5} NAAQS twice in 2016.

Other – contracted local clean air agencies

Table 10. Other - Contracted Local Clean Air Agencies

| AQS# | Site Name | Est. | Type | Scale | Sampling Type | Action for 2017 |
|-----------|-------------|-------|-------------|----------|---------------|-----------------|
| 530570011 | Anacortes | 10/11 | SLAMS | Urban | Continuous | Continue |
| 530090013 | Cheeka Peak | 5/06 | Rural NCore | Regional | Continuous | Continue |

Additional Monitors: None.

Note: Ecology provides technical support for Anacortes and Cheeka Peak. Technical support can include repair and calibration, quality assurance, telemetry, and data management.

Anacortes, O Avenue

(NWCAA)

Site Information

Site Name
AQS ID
GPS coordinates
Location
Address
County
Distance to road from gaseous probe (meters)
Traffic count (AADT, year)
Groundcover
Statistical Area

Anacortes, O Street
530570011
LAT/LONG: 048 52' 05"/122 61' 42"
Trailer
202 O Avenue, Anacortes
Skagit
15
N/A
Asphalt, gravel
MSA: Not an Urban area

Monitor Information Pollutant, POC

Parameter code
Basic monitoring objectives(s)
Site type(s)
Monitor type(s)
Instrument manufacturers and model

44201, 42401, 88101
NAQQS Compliance
Population Exposure
SLAMS
Teledyne-API 400, Teledyne-API
T100EU & Met One Bam 1020

Method code
FRM/FEM/ARM/other
Collecting Agency
Analytical Lab
Reporting Agency
Spatial scale
Monitoring start date
Current sampling frequency
Calculated sampling frequency
Sampling season

087, 600, 170
FEM
NWCAA
N/A
Ecology
Neighborhood
10/11
Continuous
N/A
Ozone seasonal (May-September), Year-round SO₂ and PM_{2.5}

Probe height (meters)
Distance from supporting structure (meters)
Distance from obstructions on roof (meters)
Distance from obstructions not on roof (meters)
Distance from trees (meters)
Distance to furnace or incinerator flue (meters)
Distance between collocated monitors (meters)
Unrestricted airflow (degrees)
Spacing from minor sources
Probe material for reactive gases
Residence time for reactive gases (seconds)
Changes within the next 18 months?
Suitable for comparison against the NAAQS?
Design Value

3
N/A
N/A
N/A
N/A
N/A
N/A
360
No minor sources
Teflon
9.5 residence time needed
None anticipated
Yes. 0.042 Ozone/6.0 PM_{2.5} FEM
Annual/13.0 24hr FEM

*Insufficient data.

Purpose: The NWCAA uses this site to collect ozone, SO₂, and PM_{2.5} information in its jurisdiction. This site is suitable for comparison to the NAAQS.

Cheeka Peak

(ORCAA)

| | |
|---|---|
| Site Information | |
| Site Name | Cheeka Peak |
| AQS ID | 530090013 |
| GPS coordinates | LAT/LONG: 048 17'12"/ 124 37' 13" |
| Location | Cheeka Peak (tree farm) |
| Address | Cheeka Peak |
| County | Clallam |
| Distance to road from gaseous probe (meters) | 7 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Shrubs, grass and gravel/dirt |
| Statistical Area | MSA: Not in an MSA |
| Monitor Information Pollutant, POC | |
| Parameter code | 42101, 42401, 42600+, 88502, |
| Basic monitoring objectives(s) | Research |
| Site type(s) | Background/Regional Transport |
| Monitor type(s) | NCore |
| Instrument manufacturer and model | Teledyne-API 400, RR M903, |
| Method code | 087, 054, 560, 599, 771 |
| FRM/FEM/ARM/other | FEM & Other |
| Collecting Agency | Olympic Region Clean Air Agency |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Regional |
| Monitoring start date | 5/06 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 5.5 |
| Distance from supporting structure (meters) | 0.3 |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | 21 |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | 0.3 to 0.6 |
| Unrestricted airflow (degrees) | 175 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Teflon |
| Residence time for reactive gases (seconds) | See specific pollutant |
| Changes within the next 18 months? | Potential analyzer upgrades |
| Suitable for comparison against the PM _{2.5} , ozone | |
| NAAQS? | PM _{2.5} – No, Ozone – Yes, Trace gases, Yes |
| Design Value | 2.2 Annual/ 6.0 24hr |

Purpose: The Olympic Region Clean Air Agency (ORCAA) operates this Rural NCore site.

Meteorological Monitoring (Met. 61101, 61102, 62101)

Table 11. Met Monitoring, Parameter Codes 61101, 61102, 62101

| AQS# | Site Name | Est. | Type | Scale | Sampling Type | Action for 2017 |
|-----------|-----------------------|-------|------------|--------------|---------------|-----------------|
| 530090013 | Cheeka Peak | 5/06 | WS, WD, Ta | Regional | Continuous | Continue |
| 530650005 | Colville | 3/11 | WS, WD, Ta | Neighborhood | Continuous | Continue |
| 530330023 | Enumclaw Mud Mtn. | 2/04 | WS, WD, Ta | Urban | Continuous | Continue |
| 530050005 | Kennewick | 08/12 | WS, WD, Ta | Neighborhood | Continuous | Continue |
| 530330017 | North Bend | 1/00 | WS, WD, Ta | Regional | Continuous | Continue |
| 530470013 | Omak (Tribal) | 10/10 | WS, WD, Ta | Neighborhood | Continuous | Continue |
| 530330080 | Seattle Beacon Hill | 6/79 | WS, WD, Ta | Urban | Continuous | Continue |
| 530330030 | Seattle 10th & Weller | 4/14 | WS, WD, Ta | Micro | Continuous | Continue |
| 530630021 | Spokane Augusta Ave | 7/09 | WS, WD, Ta | Neighborhood | Continuous | Continue |
| 530530024 | Tacoma 36th | 2/16 | WS, WD, Ta | Micro | Continuous | Continue |
| 530531016 | Tacoma Tower | 1/91 | WS, WD, Ta | Micro | Continuous | Continue |
| 530770015 | Toppenish (Tribal) | 6/09 | WS, WD, Ta | Neighborhood | Continuous | Continue |
| 530110011 | Vancouver Blairmount | 12/07 | WS, WD, Ta | Neighborhood | Continuous | Continue |
| 530070011 | Wenatchee Fifth | 11/12 | WS, WD, Ta | Neighborhood | Continuous | Continue |
| 530770016 | White Swan (Tribal) | 11/09 | WS, WD, Ta | Neighborhood | Continuous | Continue |

Additional Monitors: A new meteorological site is anticipated at the Central Washington Comprehensive Mental Health Yakima site in 2017 pending landlord approval. The Tacoma near-road site began meteorological monitoring in February 2016.

Recommendations/Modifications: None.

Cheeka Peak

(ORCAA)

Site Information

| | |
|--|-------------------------------|
| Site Name | Cheeka Peak |
| AQS ID | 530090013 |
| GPS coordinates | 048 29' 78"/124 62' 49" |
| Location | Cheeka Peak (tree farm) |
| Address | Cheeka Peak |
| County | Clallam |
| Distance to road from gaseous probe (meters) | Not near a road |
| Traffic count (AADT, year) | N/A |
| Groundcover | Shrubs, grass and gravel/dirt |
| Statistical Area | Not in an MSA |

Monitor Information Pollutant, POC

| | |
|--|---------------------------------|
| Parameter code | 61101, 61102, 62101 |
| Basic monitoring objectives(s) | Research |
| Site type(s) | National Transport |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | RM Young 86004 |
| Method code | 050, 020, 040 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Olympic Region Clean Air Agency |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Regional |
| Monitoring start date | 5/06 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 10 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | 40+ |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Probe material for reactive gases | N/A |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the NAAQS? | No |

Purpose: Collection of wind speed, wind direction, and temperature in support of monitoring at the Rural NCore site.

Colville, E. 1st

| | |
|--|-------------------------------|
| Site Information | |
| Site Name | Colville, E. 1st |
| AQS ID | 530650005 |
| GPS coordinates | 048 54' 46"/117 90' 32" |
| Location | Rooftop of Colville Firehouse |
| Address | 261 E. 1st Street, Colville |
| County | Stevens |
| Distance to road from gaseous probe (meters) | 20 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Asphalt, cement, grass |
| Statistical Area | Not in an urban area |
| Monitor Information Pollutant, POC | |
| Parameter code | 61101, 61102, 62101 |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | RM Young 85004 |
| Method code | 050, 020, 040 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Ecology |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 5/16 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 10 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | 50+ |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Probe material for reactive gases | N/A |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the NAAQS? | No |

Purpose: Collection of wind speed, wind direction, and temperature in support of PM_{2.5} and PM₁₀ monitoring at Colville.

Enumclaw, Mud Mountain Dam

| | |
|--|--------------------------------------|
| Site Information | |
| Site Name | Enumclaw, Mud Mountain |
| AQS ID | 530330023 |
| GPS coordinates | 047 08' 28"/121 56' 09" |
| Location | Mud Mountain Dam |
| Address | 30525 SE Mud Mountain Road, Enumclaw |
| County | King |
| Distance to road from gaseous probe (meters) | N/A |
| Traffic count (AADT, year) | N/A |
| Groundcover | Gravel & weeds |
| Statistical Area | Seattle-Bellevue-Everett, WA |
| Monitor Information Pollutant, POC | |
| Parameter code | 61101, 61102, 62101 |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Regional Transport |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | RM Young 85004 |
| Method code | 050, 020, 040, 62 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Ecology |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Urban |
| Monitoring start date | 2/04 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Seasonal (May – September) |
| Probe height (meters) | 10 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Probe material for reactive gases | N/A |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the NAAQS? | No |

Purpose: Collection of wind speed, wind direction, and temperature in support of seasonal ozone monitoring at Enumclaw.

Kennewick, Metaline Avenue

(BCAA)

| | |
|--|---|
| Site Information | |
| Site Name | Kennewick, Metaline Avenue |
| AQS ID | 530050002 |
| GPS coordinates | 046 13' 06"/119 12' 03" |
| Location | Rooftop of Kennewick Skills Center |
| Address | 5929 West Metaline, Kennewick |
| County | Benton |
| Distance to road from gaseous probe (meters) | N/A |
| Traffic count (AADT, year) | N/A |
| Groundcover | Rooftop-asphalt, ground-grass & asphalt |
| Statistical Area | Richland, Kennewick and Pasco, WA |
| Monitor Information Pollutant, POC | |
| Parameter code | 61101, 61102, 62101 |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | RM Young 85004 |
| Method code | 050, 020, 040 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Ecology |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 8/12 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 10 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | 18 |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | 66 |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Probe material for reactive gases | N/A |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the NAAQS? | No |

Purpose: Collection of wind speed, wind direction, and temperature in support of PM_{2.5}, PM₁₀ and seasonal ozone monitoring in the Kennewick/TriCities area.

North Bend, North Bend Way

| | |
|--|-------------------------------------|
| Site Information | |
| Site Name | North Bend, North Bend Way |
| AQS ID | 530330017 |
| GPS coordinates | 047 29' 23"/121 46' 24" |
| Location | USDA Forest Service Offices |
| Address | 42404 SE North Bend Way, North Bend |
| County | King |
| Distance to road from gaseous probe (meters) | N/A |
| Traffic count (AADT, year) | N/A |
| Groundcover | Grass |
| Statistical Area | Seattle-Bellevue-Everett, WA |

| | |
|--|---------------------|
| Monitor Information Pollutant, POC | |
| Parameter code | 61101, 61102, 62101 |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | RM Young 85004 |
| Method code | 050, 020, 040, 62 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Ecology |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Regional |
| Monitoring start date | 1/00 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 10 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | 20 |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Probe material for reactive gases | N/A |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the NAAQS? | No |

Purpose: Collection of wind speed, wind direction, and temperature in support of PM_{2.5} and seasonal ozone monitoring at North Bend.

Omak

(Colville Tribe)

Site Information

| | |
|--|-----------------------------------|
| Site Name | Omak (Colville Nation) |
| AQS ID | 530470013 |
| GPS coordinates | 048. 39' 99"/119 518' 96" |
| Location | Shelter |
| Address | 8th Avenue and Omak/Okanogan Road |
| County | Okanogan |
| Distance to road from gaseous probe (meters) | N/A |
| Traffic count (AADT, year) | N/A |
| Groundcover | Grass, dirt |
| Statistical Area | Not in an MSA |

Monitor Information Pollutant, POC

| | |
|--|---------------------|
| Parameter code | 61101, 61102, 62101 |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | RM Young 85004 |
| Method code | 050, 020, 040 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Ecology |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 10/10 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 10 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Probe material for reactive gases | N/A |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the NAAQS? | No |

Purpose: Collection of wind speed, wind direction, and temperature in support of PM_{2.5} monitoring at Omak.

Seattle, Beacon Hill

| | |
|--|-----------------------------------|
| Site Information | |
| Site Name | Seattle, Beacon Hill |
| AQS ID | 530330080 |
| GPS coordinates | 047 34' 58"/122 18' 30" |
| Location | Jefferson Park/reservoir |
| Address | 4103 Beacon Avenue South, Seattle |
| County | King |
| Distance to road from gaseous probe (meters) | N/A |
| Traffic count (AADT, year) | N/A |
| Groundcover | Gravel, grass |
| Statistical Area | Seattle-Bellevue-Everett, WA |
| Monitor Information Pollutant, POC | |
| Parameter code | 61101, 61102, 62101 |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | NCore |
| Instrument manufacturer and model | RM Young 85004 |
| Method code | 050, 020, 040, 062 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Ecology |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Urban |
| Monitoring start date | 6/79 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 10 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Probe material for reactive gases | N/A |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the NAAQS? | No |

Purpose: Collection of wind speed, wind direction, and temperature in support of PM_{2.5}, ozone, NCore, toxics and speciation monitoring at Seattle Beacon Hill.

Seattle, 10th and Weller

| | |
|--|-----------------------------------|
| Site Information | |
| Site Name | Omak (Colville Nation) |
| AQS ID | 530470013 |
| GPS coordinates | 048. 39' 99"/119 518' 96" |
| Location | Shelter |
| Address | 8th Avenue and Omak/Okanogan Road |
| County | Okanogan |
| Distance to road from gaseous probe (meters) | N/A |
| Traffic count (AADT, year) | N/A |
| Groundcover | Grass, dirt |
| Statistical Area | Not in an MSA |

| | |
|--|---------------------|
| Monitor Information Pollutant, POC | |
| Parameter code | 61101, 61102, 62101 |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | RM Young 85004 |
| Method code | 050, 020, 040, 062 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Ecology |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Micro |
| Monitoring start date | 4/14 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 10 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Probe material for reactive gases | N/A |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the NAAQS? | No |

Purpose: Collection of wind speed, wind direction, and temperature in support of NO₂, CO, and PM_{2.5} near-road monitoring at Seattle 10th and Weller.

Spokane, Augusta Avenue

(SRCAA)

| | |
|--|-----------------------------------|
| Site Information | |
| Site Name | Omak (Colville Nation) |
| AQS ID | 530470013 |
| GPS coordinates | 048. 39' 99"/119 518' 96" |
| Location | Shelter |
| Address | 8th Avenue and Omak/Okanogan Road |
| County | Okanogan |
| Distance to road from gaseous probe (meters) | N/A |
| Traffic count (AADT, year) | N/A |
| Groundcover | Grass, dirt |
| Statistical Area | Not in an MSA |

| | |
|--|---------------------------------|
| Monitor Information Pollutant, POC | |
| Parameter code | 61101, 61102, 62101 |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | RM Young 85004 |
| Method code | 050, 020, 040 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Spokane Region Clean Air Agency |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 3/09 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 10 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Probe material for reactive gases | N/A |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the NAAQS? | No |

Purpose: Collection of wind speed, wind direction and temperature in support of PM_{2.5}, and PM₁₀ monitoring at Spokane Augusta.

Tacoma, 36th

| | |
|--|--|
| Site Information | |
| Site Name | Tacoma, 36th |
| AQS ID | 530530024 |
| GPS coordinates | LAT/LONG Est.: 047 22' 63"/122 46' 25" |
| Location | Jenny Reed Elementary School |
| Address | 1802 S. 36th |
| County | Pierce |
| Distance to road from gaseous probe (meters) | N/A |
| Traffic count (AADT, year) | 160,000 est. (2104 WSDOT) |
| Groundcover | Cement, grass |
| Statistical Area | Seattle-Bellevue-Everett, WA |
| Monitor Information Pollutant, POC | |
| Parameter code | 61101, 61102, 62101 |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | RM Young 85004 |
| Method code | 050, 020, 040, 062 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Ecology |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Micro |
| Monitoring start date | 2/16 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 10 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Probe material for reactive gases | N/A |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the NAAQS? | No |

Purpose: Optional collection of wind speed, wind direction, and temperature in support of NO₂, and PM_{2.5} monitoring at the Tacoma 36th near-road site.

Tacoma, Tower Drive

| | |
|--|-----------------------------------|
| Site Information | |
| Site Name | Omak (Colville Nation) |
| AQS ID | 530470013 |
| GPS coordinates | 048. 39' 99"/119 518' 96" |
| Location | Shelter |
| Address | 8th Avenue and Omak/Okanogan Road |
| County | Okanogan |
| Distance to road from gaseous probe (meters) | N/A |
| Traffic count (AADT, year) | N/A |
| Groundcover | Grass, dirt |
| Statistical Area | Not in an MSA |

| | |
|--|---------------------|
| Monitor Information Pollutant, POC | |
| Parameter code | 61101, 61102, 62101 |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | RM Young 85004 |
| Method code | 050, 020, 040 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Ecology |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Micro |
| Monitoring start date | 1/99 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 10 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Probe material for reactive gases | N/A |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the NAAQS? | No |

Purpose: Collection of wind speed, wind direction, and temperature in support of modeling in the Puget Sound.

Toppenish, Ward Road

(Yakama Nation)

Site Information

| | |
|--|-----------------------------------|
| Site Name | Omak (Colville Nation) |
| AQS ID | 530470013 |
| GPS coordinates | 048. 39' 99"/119 518' 96" |
| Location | Shelter |
| Address | 8th Avenue and Omak/Okanogan Road |
| County | Okanogan |
| Distance to road from gaseous probe (meters) | N/A |
| Traffic count (AADT, year) | N/A |
| Groundcover | Grass, dirt |
| Statistical Area | Not in an MSA |

Monitor Information Pollutant, POC

| | |
|--|---------------------|
| Parameter code | 61101, 61102, 62101 |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | RM Young 85004 |
| Method code | 050, 020, 040 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Ecology |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 8/08 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 10 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Probe material for reactive gases | N/A |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the NAAQS? | No |

Purpose: Collection of wind speed, wind direction, and temperature in support of PM_{2.5} monitoring at Toppenish.

Vancouver, Blairmont

| | |
|--|-----------------------------------|
| Site Information | |
| Site Name | Omak (Colville Nation) |
| AQS ID | 530470013 |
| GPS coordinates | 048. 39' 99"/119 518' 96" |
| Location | Shelter |
| Address | 8th Avenue and Omak/Okanogan Road |
| County | Okanogan |
| Distance to road from gaseous probe (meters) | N/A |
| Traffic count (AADT, year) | N/A |
| Groundcover | Grass, dirt |
| Statistical Area | Not in an MSA |

| | |
|--|---------------------|
| Monitor Information Pollutant, POC | |
| Parameter code | 61101, 61102, 62101 |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | RM Young 85004 |
| Method code | 050, 020, 040 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Ecology |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 12/07 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 10 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Probe material for reactive gases | N/A |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the NAAQS? | No |

Purpose: Collection of wind speed, wind direction, and temperature in support of seasonal ozone monitoring at Vancouver Mountain View High School.

Wenatchee, 5th Street

| | |
|--|-----------------------------------|
| Site Information | |
| Site Name | Omak (Colville Nation) |
| AQS ID | 530470013 |
| GPS coordinates | 048. 39' 99"/119 518' 96" |
| Location | Shelter |
| Address | 8th Avenue and Omak/Okanogan Road |
| County | Okanogan |
| Distance to road from gaseous probe (meters) | N/A |
| Traffic count (AADT, year) | N/A |
| Groundcover | Grass, dirt |
| Statistical Area | Not in an MSA |

| | |
|--|---------------------|
| Monitor Information Pollutant, POC | |
| Parameter code | 61101, 61102, 62101 |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | RM Young 85004 |
| Method code | 050,020,040 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Ecology |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 11/12 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 10 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Probe material for reactive gases | N/A |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the NAAQS? | No |

Purpose: Collection of wind speed, wind direction, and temperature in support of PM_{2.5} monitoring at Wenatchee.

White Swan

(Yakama Nation)

Site Information

| | |
|--|-----------------------------------|
| Site Name | Omak (Colville Nation) |
| AQS ID | 530470013 |
| GPS coordinates | 048. 39' 99"/119 518' 96" |
| Location | Shelter |
| Address | 8th Avenue and Omak/Okanogan Road |
| County | Okanogan |
| Distance to road from gaseous probe (meters) | N/A |
| Traffic count (AADT, year) | N/A |
| Groundcover | Grass, dirt |
| Statistical Area | Not in an MSA |

Monitor Information Pollutant, POC

| | |
|--|---------------------|
| Parameter code | 61101, 61102, 62101 |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | RM Young 85004 |
| Method code | 050,020, 040 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Ecology |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 11/09 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 10 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Probe material for reactive gases | N/A |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the NAAQS? | No |

Purpose: Collection of wind speed, wind direction, and temperature in support of PM_{2.5} monitoring at White Swan.

Table 12. Other Contracted Sites USDAFS

| AQS# | Site Name | Est. | Type | Scale | Sampling Type | Action for 2017 |
|-------------|------------------|-------------|-------------|--------------|----------------------|------------------------|
| 530070007 | Chelan | 12/02 | SLAMS | Neighborhood | Continuous | Continue |
| 530070010 | Leavenworth | 2/05 | SLAMS | Neighborhood | Continuous | Continue |
| 530470009 | Twisp | 11/03 | SLAMS | Neighborhood | Continuous | Continue |
| 530470010 | Winthrop | 11/03 | SLAMS | Neighborhood | Continuous | Continue |

Additional Monitors: At the USDAFS request, the Chelan monitor was restarted.

Recommendations/Modifications: None.

Comment: *Nephelometers are not EPA equivalent method, nor compliance instruments, and design values are estimates.

Chelan, Woodin Avenue

(USDAFS)

| | |
|--|--|
| Site Information | |
| Site Name | Omak (Colville Nation) |
| AQS ID | 530470013 |
| GPS coordinates | 048. 39' 99"/119 518' 96" |
| Location | Shelter |
| Address | 8th Avenue and Omak/Okanogan Road |
| County | Okanogan |
| Distance to road from gaseous probe (meters) | N/A |
| Traffic count (AADT, year) | N/A |
| Groundcover | Grass, dirt |
| Statistical Area | Not in an MSA |
| Monitor Information Pollutant, POC | |
| Parameter code | 11203 |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Radiance Research Nephelometer |
| Method code | 771 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | USDA Forest Service |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 9/02 Restarted 9/16 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 7 |
| Distance from supporting structure (meters) | 1 |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | 10 |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Teflon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | Correlation with an FRM/FEM is planned but not scheduled |
| Suitable for comparison against the PM _{2.5} NAAQS? | No |
| Design value | N/A |

Purpose: This site's primary purpose is for prescribed burning decision-making by USDAFS.

Leavenworth, Evans Street

(USDAFS)

| | |
|--|-----------------------------------|
| Site Information | |
| Site Name | Omak (Colville Nation) |
| AQS ID | 530470013 |
| GPS coordinates | 048. 39' 99"/119 518' 96" |
| Location | Shelter |
| Address | 8th Avenue and Omak/Okanogan Road |
| County | Okanogan |
| Distance to road from gaseous probe (meters) | N/A |
| Traffic count (AADT, year) | N/A |
| Groundcover | Grass, dirt |
| Statistical Area | Not in an MSA |
| Monitor Information Pollutant, POC | |
| Parameter code | 88502 (POC3) |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Radiance Research M903 |
| Method code | 771 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | USDA Forest Service |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 2/05 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 12 (rooftop) |
| Distance from supporting structure (meters) | 1 |
| Distance from obstructions on roof (meters) | 5 |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | 25 |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Teflon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the PM _{2.5} NAAQS? | No |
| Design value | 7.5 Annual/25.0 24hr |

Purpose: Leavenworth is a neighborhood scale site. Its primary purpose is for prescribed burning decision-making by USDAFS. This site is not suitable for comparison to the PM_{2.5} NAAQS.

Twisp, Glover Street

(USDAFS)

| | |
|--|-----------------------------------|
| Site Information | |
| Site Name | Omak (Colville Nation) |
| AQS ID | 530470013 |
| GPS coordinates | 048. 39' 99"/119 518' 96" |
| Location | Shelter |
| Address | 8th Avenue and Omak/Okanogan Road |
| County | Okanogan |
| Distance to road from gaseous probe (meters) | N/A |
| Traffic count (AADT, year) | N/A |
| Groundcover | Grass, dirt |
| Statistical Area | Not in an MSA |
| Monitor Information Pollutant, POC | |
| Parameter code | 88502 (POC 3) |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Radiance Research M903 |
| Method code | 771 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | USDA Forest Service |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 11/03 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 2 |
| Distance from supporting structure (meters) | 1 |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | 25 |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Teflon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the PM _{2.5} NAAQS? | No |
| Design value | 7.5 Annual/25.0 24hr |

Purpose: Twisp is a neighborhood scale site. Its primary purpose is for prescribed burning decision-making by USDAFS. This site is not suitable for comparison to the PM_{2.5} NAAQS.

Winthrop, West Chewuch Road

(USDAFS)

Site Information

| | |
|--|-----------------------------------|
| Site Name | Omak (Colville Nation) |
| AQS ID | 530470013 |
| GPS coordinates | 048. 39' 99"/119 518' 96" |
| Location | Shelter |
| Address | 8th Avenue and Omak/Okanogan Road |
| County | Okanogan |
| Distance to road from gaseous probe (meters) | N/A |
| Traffic count (AADT, year) | N/A |
| Groundcover | Grass, dirt |
| Statistical Area | Not in an MSA |

Monitor Information Pollutant, POC

| | |
|--|------------------------|
| Parameter code | 88502 (POC 3) |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Radiance Research M903 |
| Method code | 771 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | USDA Forest Service |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 11/03 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 5 |
| Distance from supporting structure (meters) | 1 |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | 1 |
| Distance from trees (meters) | 7 |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Teflon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the PM _{2.5} NAAQS? | No |
| Design value | N/A* |

*Insufficient data

Purpose: Winthrop is a neighborhood scale site. Its primary purpose is for prescribed burning decision-making by USDAFS. This site is not suitable for comparison to the PM_{2.5} NAAQS.

Other – contracted sites Tribal/EPA

Table 13. Other - Contracted Sites Tribal/EPA

| AQS# | Site Name (Tribe) | Est. | Type | Scale | Sampling Type | Action for 2017 |
|-----------|---------------------|-------|-------|--------------|---------------|-----------------|
| 530090014 | Neah Bay (Makah) | 2/10 | SLAMS | Neighborhood | Continuous | Continue |
| 530470013 | Omak (Colville) | 10/10 | SLAMS | Neighborhood | Continuous | Continue |
| 530270011 | Taholah (Quinault) | 8/15 | SLAMS | Neighborhood | Continuous | Continue |
| 530770015 | Toppenish (Yakama) | 8/08 | SLAMS | Neighborhood | Continuous | Continue |
| 530650002 | Wellpinit (Spokane) | 10/08 | SLAMS | Neighborhood | Continuous | Continue |
| 530770016 | White Swan (Yakama) | 1/09 | SLAMS | Neighborhood | Continuous | Continue |

Additional Monitors: None.

Recommendations/Modifications: None.

Comment: Nephelometers are not EPA equivalent method, nor compliance instruments, and design values are estimates.

Neah Bay

(Makah Nation)

| | |
|--|-----------------------------------|
| Site Information | |
| Site Name | Omak (Colville Nation) |
| AQS ID | 530470013 |
| GPS coordinates | 048. 39' 99"/119 518' 96" |
| Location | Shelter |
| Address | 8th Avenue and Omak/Okanogan Road |
| County | Okanogan |
| Distance to road from gaseous probe (meters) | N/A |
| Traffic count (AADT, year) | N/A |
| Groundcover | Grass, dirt |
| Statistical Area | Not in an MSA |
| Monitor Information Pollutant, POC | |
| Parameter code | 88502 (POC 3) |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Radiance Research M903 |
| Method code | 771 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Makah Nation |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 2/10 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 9 |
| Distance from supporting structure (meters) | 1 |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 270 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Teflon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the PM _{2.5} NAAQS? | No |
| Design value | N/A* |

*Insufficient data.

Purpose: Neah Bay is a neighborhood scale site. It is used by the Makah Tribe for air quality information on the reservation. This information is also used by EPA Region 10 to determine burning curtailment calls in support of the Federal Rules for Reservations (FARR).

Omak

(Colville Tribe)

| | |
|--|-----------------------------------|
| Site Information | |
| Site Name | Omak (Colville Nation) |
| AQS ID | 530470013 |
| GPS coordinates | 048. 39' 99"/119 518' 96" |
| Location | Shelter |
| Address | 8th Avenue and Omak/Okanogan Road |
| County | Okanogan |
| Distance to road from gaseous probe (meters) | N/A |
| Traffic count (AADT, year) | N/A |
| Groundcover | Grass, dirt |
| Statistical Area | Not in an MSA |
| Monitor Information Pollutant, POC | |
| Parameter code | 88502 (POC 3) |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Met One BAM 1020 |
| Method code | 170 |
| FRM/FEM/ARM/other | FEM |
| Collecting Agency | Colville Tribe |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 10/10 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 2 |
| Distance from supporting structure (meters) | 1 |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | 100 |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Teflon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the PM _{2.5} NAAQS? | Yes |
| Design value | N/A* |

*Insufficient data.

Purpose: Omak is a neighborhood scale site. It is used by the Colville Tribe for air quality information on the reservation. This information is also used by EPA Region 10 to determine burning curtailment calls in support of the FARR.

Taholah, Chitwin Drive

(Quinault Tribe)

| | |
|--|-----------------------------------|
| Site Information | |
| Site Name | Omak (Colville Nation) |
| AQS ID | 530470013 |
| GPS coordinates | 048. 39' 99"/119 518' 96" |
| Location | Shelter |
| Address | 8th Avenue and Omak/Okanogan Road |
| County | Okanogan |
| Distance to road from gaseous probe (meters) | N/A |
| Traffic count (AADT, year) | N/A |
| Groundcover | Grass, dirt |
| Statistical Area | Not in an MSA |
| Monitor Information Pollutant, POC | |
| Parameter code | 88502 (POC 3) |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Ecotech M90003/100G |
| Method code | 812 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Quinault Tribe |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 8/2015 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 2 |
| Distance from supporting structure (meters) | TBD |
| Distance from obstructions on roof (meters) | TBD |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | TBD |
| Distance to furnace or incinerator flue (meters) | TBD |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | TBD |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Teflon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the PM _{2.5} NAAQS? | No |
| Design value | N/A |

*Insufficient data.

Purpose: Taholah is a neighborhood scale site. It is used by the Quinault Tribe for air quality information on the reservation. This information is also used by EPA Region 10 to determine burning curtailment calls in support of the FARR.

Toppenish, Ward Road

(Yakama Nation)

| | |
|--|-----------------------------------|
| Site Information | |
| Site Name | Omak (Colville Nation) |
| AQS ID | 530470013 |
| GPS coordinates | 048. 39' 99"/119 518' 96" |
| Location | Shelter |
| Address | 8th Avenue and Omak/Okanogan Road |
| County | Okanogan |
| Distance to road from gaseous probe (meters) | N/A |
| Traffic count (AADT, year) | N/A |
| Groundcover | Grass, dirt |
| Statistical Area | Not in an MSA |
| Monitor Information Pollutant, POC | |
| Parameter code | 88502 (POC 3) |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Met One Bam 1020 |
| Method code | 170 |
| FRM/FEM/ARM/other | FEM |
| Collecting Agency | Yakama Nation |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 8/08 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 3 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Teflon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the PM _{2.5} NAAQS? | Yes |
| Design value | 10.4 Annual/38.0 24hr |

Purpose: Toppenish is a neighborhood scale site. It is used by the Yakama Tribe for air quality information on the reservation. This information is also used by EPA Region 10 to determine burning curtailment calls in support of the FARR.

Exceedances: The Toppenish site exceeded the PM_{2.5} NAAQS twice in 2016.

Wellpinit, Ford-Wellpinit Road (Spokane Tribe)

| | |
|--|-----------------------------------|
| Site Information | |
| Site Name | Omak (Colville Nation) |
| AQS ID | 530470013 |
| GPS coordinates | 048. 39' 99"/119 518' 96" |
| Location | Shelter |
| Address | 8th Avenue and Omak/Okanogan Road |
| County | Okanogan |
| Distance to road from gaseous probe (meters) | N/A |
| Traffic count (AADT, year) | N/A |
| Groundcover | Grass, dirt |
| Statistical Area | Not in an MSA |

| | |
|--|------------------------|
| Monitor Information Pollutant, POC | |
| Parameter code | 88502 (POC 3) |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Radiance Research M903 |
| Method code | 771 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Ecology |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 10/08 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 2 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Teflon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the PM _{2.5} NAAQS? | No |
| Design value | 5.3 Annual/14.0 24hr |

Purpose: Wellpinit is a neighborhood scale site. It is used by the Spokane Tribe for air quality information on the reservation. This information is also used by EPA Region 10 to determine burning curtailment calls in support of the FARR.

White Swan**(Yakama Nation)**

| | |
|--|-----------------------------------|
| Site Information | |
| Site Name | Omak (Colville Nation) |
| AQS ID | 530470013 |
| GPS coordinates | 048. 39' 99"/119 518' 96" |
| Location | Shelter |
| Address | 8th Avenue and Omak/Okanogan Road |
| County | Okanogan |
| Distance to road from gaseous probe (meters) | N/A |
| Traffic count (AADT, year) | N/A |
| Groundcover | Grass, dirt |
| Statistical Area | Not in an MSA |

| | |
|--|------------------------|
| Monitor Information Pollutant, POC | |
| Parameter code | 88502 (POC 3) |
| Basic monitoring objectives(s) | Public Information |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | Radiance Research M903 |
| Method code | 771 |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Yakama Tribe |
| Analytical Lab | N/A |
| Reporting Agency | Ecology |
| Spatial scale | Neighborhood |
| Monitoring start date | 1/09 |
| Current sampling frequency | Continuous |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 2 |
| Distance from supporting structure (meters) | 2 |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Teflon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the PM _{2.5} NAAQS? | No |
| Design value | N/A* |

*Insufficient data.

Purpose: White Swan is a neighborhood scale site. It is used by the Yakama Tribe for air quality information on the Yakama Reservation. This information is also used by EPA Region 10 to determine burning curtailment calls in support of the FARR.

Lead (Pb 14129)

Table 14. Pb, Parameter Code 85129

| AQS# | Site Name | Est. | Type | Scale | Sampling Type | Action for 2017 |
|-----------|----------------------|------|-------|-------|---------------|-----------------|
| 530330080 | Seattle, Beacon Hill | 1/13 | NCore | Urban | 1/6 | Continue |

Additional Monitors: None.

Recommendations/Modifications: None. EPA changed the monitoring rule in 2016 and is no longer requiring Pb monitoring at NCore sites. Currently there is no extra cost to Ecology to sample for Pb and we will continue to do so until further notice.

Note: Ecology has EPA Region 10 approval to use the PM₁₀ sampler, which is part of the PM Course sampling for lead monitoring. Eastern Research Group (ERG), an EPA contractor, performs the analysis and submits the data to the Air Quality System (AQS). There is an SOP in Ecology's Quality Assurance Plan for this instrument. This monitor fulfills the requirement to demonstrate compliance with the 2008 lead NAAQS.

Seattle, Beacon Hill

| | |
|--|-----------------------------------|
| Site Information | |
| Site Name | Omak (Colville Nation) |
| AQS ID | 530470013 |
| GPS coordinates | 048. 39' 99"/119 518' 96" |
| Location | Shelter |
| Address | 8th Avenue and Omak/Okanogan Road |
| County | Okanogan |
| Distance to road from gaseous probe (meters) | N/A |
| Traffic count (AADT, year) | N/A |
| Groundcover | Grass, dirt |
| Statistical Area | Not in an MSA |

| | |
|--|---------------------|
| Monitor Information Pollutant, POC | |
| Parameter code | 85129 |
| Basic monitoring objectives(s) | NAQQS Compliance |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | NCore |
| Method code | 907 |
| FRM/FEM/ARM/other | Thermo 2025 FRM |
| Collecting Agency | Ecology |
| Analytical Lab | ERG |
| Reporting Agency | ERG |
| Spatial scale | Urban |
| Monitoring start date | 1/13 |
| Current sampling frequency | 1/6 |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 2 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | N/A |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the Pb NAAQS? | Yes |

Purpose: The purpose of sampling at Seattle Beacon Hill is to meet EPA NAAQS minimum Pb requirements.

Trace gas monitoring

NCore – Precursor Gas & Multi-Pollutant Monitoring – From an emission source perspective, multiple pollutants and their precursors are released simultaneously (e.g., a combustion plume with nitrogen, carbon, hydrocarbon, mercury, sulfur gases, and particulate matter). Meteorological processes that shape pollutant movement, atmospheric transformations, and removal act on all pollutants. Numerous chemical and physical interactions underlie the dynamics of particle and ozone formation and the adherence of air toxics on surfaces of particles.

Overwhelming programmatic and scientific interactions across pollutants have demanded a movement toward integrated air quality management. Multi-pollutant air monitoring benefits health assessments and emissions strategy development. Health studies with access to multi-pollutant data will be better positioned to identify effects of different pollutants, particularly when concentration, composition, and population types are included. Air quality models and source attribution methods used for strategy development also benefit from the multi-pollutant approach. Modelers will be able to perform more robust evaluations by checking performance on several variables to ensure the model produces results for correct reasons and not through compensating errors. As emission sources are characterized by a multiplicity of pollutant releases, related source apportionment models yield more conclusive results from use of multi-pollutant measurements. Multi-pollutant measurements also streamline monitoring operations and offer increased diagnostic capabilities to improve instrument performance.

The multi-pollutant monitoring provided for these needs by starting to fill the measurement gaps that have accumulated over the years. The objective of this strategy is to provide for the following important needs:

- Improved data flow and timely reporting to the public.
- Future NAAQS compliance determinations and revisions.
- Support for development of emissions strategies.
- Assess effectiveness of air pollution control programs.
- Data for scientific and health-based studies.

Table 15. Trace Gas Monitoring CO, SO₂, NO_y

| AQS# | Site Name | Est. | Type | Scale | Sampling Type | Action for 2017 |
|-----------|---------------------|------|-------------|----------|---------------|-----------------|
| 530330080 | Seattle Beacon Hill | 3/07 | NCore | Urban | Continuous | Continue |
| 530090013 | Cheeka Peak | 5/06 | Rural NCore | Regional | Continuous | Continue |

Additional Monitors: None.

Recommendations/Modifications: None.

Note: Details of trace gas monitoring are found in CO, NO, SO₂ sections.

Table 16. NCore Parameters Seattle Beacon Hill

| Parameter | Parameter Code | Sampling/ Analysis Method | Sampling Schedule | Spatial Scale | Instrument Type | Action for 2016 |
|---------------------------------|---------------------|---------------------------|---------------------|---------------|------------------------------------|-----------------|
| Ozone | 44201 | Continuous | | Urban | API 400 E | Continue |
| SO ₂ trace | 42401 | Continuous | | Urban | APIT100U | Continue |
| CO trace | 42101 | Continuous | | Urban | API 300EU | Continue |
| NO _y trace | 42600 | Continuous | | Urban | API200EU | Continue |
| PM _{2.5} mass | 88101 | Manual | 1/3 | Urban | Thermo 2025 | Continue |
| PM _{2.5} continuous | 88502 | Continuous | | Urban | Thermo FDMS TEOM 1400a + 8500 | Continue |
| PM _{2.5} speciation | 88502 | Continuous & Manual | 1/3 | Urban | Met One SSAS & URG 3000N Carbon | Continue |
| PM _{2.5} speciation | 88502 | Manual | IMPROVE | Urban | IMPROVE | Continue |
| PM _{10-2.5} | 86101 | Manual | 1/3 | Urban | Thermo 2025 | Continue |
| PM _{10-2.5} speciation | Not sampling | Not sampling | Not sampling | Urban | None | TBD |
| Pb | | Manual | | Urban | Thermo 2025 | Continue |
| WS & WD | 61101/61102 | Continuous | | Urban | RM Young 85004 | Continue |
| Ambient temperature | 62101 | Continuous | | Urban | RM Young Platinum probe | Continue |
| Ambient pressure | 64101 | Continuous | | Urban | RM Young | Continue |
| Relative humidity | 62201 | Continuous | | Urban | Rotronics | Continue |
| Precipitation | | Continuous | | Urban | RM Young 52202 | Continue |

Purpose: Seattle Beacon Hill is an urban scale site. It monitors for trace level CO, SO₂, NO₂, PM_{2.5}, air toxics, speciation, IMPROVE and other studies. Also measured at Seattle Beacon Hill: PM_{2.5} chemical speciated particulate matter, volatile organic compounds, metals, carbonyls and semi-volatile (PAH). Operation of all parameters including IMPROVE are projected to continue until further notice.

Table 17. NCore Parameters Cheeka Peak

| Parameter | Parameter Code | Sampling/ Analysis Method | Sampling schedule | Spatial Scale | Instrument Type | Action for 2016 |
|---------------------------------|---------------------|---------------------------|---------------------|---------------|--|-----------------|
| Ozone | 44201 | Continuous | Continuous | Rural | API T400 | Continue |
| SO ₂ trace | 42401 | Continuous | Continuous | Rural | API T100U | Continue |
| CO trace | 42101 | Continuous | Continuous | Rural | API T300U | Continue |
| NO _y trace | 42600 | Continuous | Continuous | Rural | API T200U | Continue |
| PM _{2.5} mass | 88101 | Manual | IMPROVE | Rural | IMPROVE | Continue |
| PM _{2.5} continuous | 88502 | Continuous | Continuous | Rural | Radiance Research M903 Nephelometer Correlated | Continue |
| Light scatter | 11203 | Continuous | Continuous | Rural | “ “ | Continue |
| Visibility | 63101 | Continuous | Continuous | Rural | ““ | Continue |
| PM _{2.5} speciation | 88502 | Manual | IMPROVE | Rural | IMPROVE | Continue |
| PM _{10-2.5} | Not sampling | Not sampling | Not sampling | Rural | None | TBD |
| PM _{10-2.5} speciation | Not sampling | Not sampling | Not sampling | Rural | None | TBD |
| WS, WD & sigma | 61101/61102/ 61106 | Continuous | Continuous | Rural | RM Young 86004 | Continue |
| Ambient temperature | 62101 | Continuous | Continuous | Rural | RM Young Platinum probe | Continue |
| Ambient pressure | 64101 | Continuous | Continuous | Rural | RM Young | Continue |
| Relative humidity | 62201 | Continuous | Continuous | Rural | Rotronics | Continue |

Purpose: Cheeka Peak is a regional scale site. Parameters measured at Cheeka Peak are: PM_{2.5}, ozone, trace-level CO, SO₂, NO_y, PM_{2.5}, and meteorology.

Toxics

Collocated National Air Toxics Trend Site (NATTS) - In addition to the STN and NCore Precursor Gas Monitoring Programs, Beacon Hill is also a designated National Air Toxics Trend Site (NATTS). The primary objectives of Washington’s NATTS Monitoring Program include but are not limited to:

- Provide long-term air toxic monitoring data in order to establish and track trends.
- Evaluate the air toxic program’s progress by characterizing air toxics concentrations, and determining their spatial and temporal differences between cities and regions over time.
- Provide representative air toxic data to support exposure assessments (i.e., determine health risks).
- Determine where air toxics emissions come from (source apportionment).
- Provide air toxic data for evaluating modeling results that are used for exposure assessments.
- Assess the effectiveness of the air toxic program’s emission reduction and control strategies.

Table 18. Toxics

| AQS# | Site Name | Est. | Type | Scale | Sampling Type | Action for 2017 |
|-----------|---------------------|------|-------|-------|---------------|-----------------|
| 530330080 | Seattle Beacon Hill | 4/97 | NCore | Urban | Manual | Continue |

Additional Monitors: None.

Recommendations/Modifications: Continue listed site as described.

Seattle, Beacon Hill NCore

| | |
|--|--|
| Site Information | |
| Site Name | Seattle, Beacon Hill |
| AQS ID | 530330080 |
| GPS coordinates | 047 34' 58"/122 18' 30" |
| Location | Jefferson Park/reservoir |
| Address | 4103 Beacon Avenue S., Seattle |
| County | King |
| Distance to road from gaseous probe (meters) | |
| Traffic count (AADT, year) | |
| Groundcover | Grass, gravel |
| Statistical Area | Seattle-Bellevue-Everett, WA |
| Monitor Information Pollutant, POC | |
| Parameter code | Unknown |
| Basic monitoring objectives(s) | Special Studies |
| Site type(s) | |
| Monitor type(s) | SPMS |
| Instrument manufacturer and model | Xontech (Xonteck) 910PC VOCs (cans), 925 Carbonyls (tubes) |
| Method code | Unknown |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Ecology |
| Analytical Lab | ERG |
| Reporting Agency | ERG |
| Spatial scale | Urban |
| Monitoring start date | 4/97 |
| Current sampling frequency | 1/3 |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 4.65 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | 20 |
| Distance from trees (meters) | 20 |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | N/A |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the NAAQS? | No |

Purpose: Seattle Beacon Hill is a designated NATTS. Seattle Beacon Hill monitoring station was nominated by the National Air Toxics Committee and chosen by EPA headquarters to represent urban scale air toxics in the Pacific Northwest. It is currently the only designated urban scale NATTS located in the Pacific Northwest.

Speciation

Chemical Speciation Trends Network (CSN) - The PM_{2.5} Chemical Speciation Program continues to have a significant role in the new Monitoring Strategy. Washington's Speciation Trends Network (STN) site is located at Jefferson Park on Beacon Hill in Seattle. The primary goal of the PM_{2.5} speciation monitoring is to:

- Provide long-term data in order to establish and track trends.
- Determine the spatial and temporal differences of PM_{2.5} composition between cities and regions over time.
- Provide representative PM_{2.5} speciation data to support exposure assessments (i.e., determine health risks).
- Determine where PM_{2.5} emissions come from (source apportionment).
- Evaluate modeling results that are used for exposure assessments.
- Assess the effectiveness of the program's emission reduction and control strategies.

Table 19. Speciation

| AQS# | Site Name | Est. | Type | Scale | Sampling Type | Action for 2017 |
|-----------|-----------------------------------|------|-------|--------------|---------------|-----------------|
| 530330080 | Seattle Beacon Hill | 4/97 | NCore | Urban | 1/3 | Continue |
| 530330030 | Seattle 10 th & Weller | 2015 | SLAMS | Neighborhood | 1/6 | Continue |
| 530530029 | Tacoma L St | 2008 | SLAMS | Neighborhood | 1/6 | Continue |
| 530770009 | Yakima | 2002 | SLAMS | Neighborhood | 1/6 | Continue |

Additional Monitors: None.

Recommendations/Modifications: None.

Speciation Parameter codes:

| | | | | | | | |
|-------|-----------|-------|------------|-------|---------------|-------|------------------------|
| Code | Parameter | Code | Parameter | Code | Parameter | Code | Parameter |
| 88102 | Antimony | 88126 | Iron | 88167 | Zinc | 88370 | OC CSN Rev Unadjusted |
| 88103 | Arsenic | 88128 | Lead | 88168 | Strontium | 88374 | OC1 CSN Rev Unadjusted |
| 88104 | Aluminum | 88131 | Indium | 88169 | Sulfur | 88375 | OC2 CSN Rev Unadjusted |
| 88107 | Barium | 88132 | Manganese | 88176 | Rubidium | 88376 | OC3 CSN Rev Unadjusted |
| 88109 | Bromine | 88136 | Nickel | 88180 | Potassium | 88377 | OC4 CSN Rev Unadjusted |
| 88110 | Cadmium | 88140 | Magnesium | 88184 | Sodium | 88378 | OP CSN Rev Unadjusted |
| 88111 | Calcium | 88152 | Phosphorus | 88185 | Zirconium | 88380 | EC CSN Rev Unadjusted |
| 88112 | Chromium | 88154 | Selenium | 88301 | Ammonium Ion | 88383 | EC1 CSN Rev Unadjusted |
| 88113 | Cobalt | 88160 | Tin | 88302 | Sodium Ion | 88384 | EC2 CSN Rev Unadjusted |
| 88114 | Copper | 88161 | Titanium | 88303 | Potassium Ion | 88385 | EC3 CSN Rev Unadjusted |
| 88115 | Chlorine | 88164 | Vanadium | 88306 | Total Nitrate | 88388 | OP CSN Rev Unadjusted |
| | | | | | OC CSN Rev | | |
| 88117 | Cerium | 88165 | Silicon | 88355 | Unadjusted | 88403 | Sulfate |
| | | | | | EC CSN Rev | | |
| 88118 | Cesium | 88166 | Silver | 88357 | Unadjusted | 88502 | PM2.5 Speciation Mass |

Seattle, Beacon Hill NCore

| | |
|--|--------------------------------------|
| Site Information | |
| Site Name | Seattle, Beacon Hill |
| AQS ID | 530330080 |
| GPS coordinates | 047 34' 58"/122 18' 30" |
| Location | Jefferson Park/reservoir |
| Address | 4103 Beacon Avenue S., Seattle |
| County | King |
| Distance to road from gaseous probe (meters) | 10 |
| Traffic count (AADT, year) | 12,700 (2012 WSDOT) |
| Groundcover | Gravel, grass |
| Statistical Area | Seattle-Bellevue-Everett, WA |
| Monitor Information Pollutant, POC | |
| Parameter code | See list above |
| Basic monitoring objectives(s) | Special Studies |
| Site type(s) | Population Exposure |
| Monitor type(s) | NCore |
| Instrument manufacturer and model | URG 3000N, Met One SASS (Super SASS) |
| Method code | |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Ecology |
| Analytical Lab | RTI |
| Reporting Agency | Ecology |
| Spatial scale | Urban |
| Monitoring start date | 3/07 |
| Current sampling frequency | 1/3 |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 2 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | 20 |
| Distance from trees (meters) | 20 |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | N/A |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the NAAQS? | No |

Purpose: Provide long-term data to establish and track trends, determine spatial and temporal differences of PM_{2.5} composition between cities and regions over time, provide representative PM_{2.5} speciation data to support exposure assessments, and determine where PM_{2.5} emissions come from.

Supplemental Speciation Sites: In addition to the Seattle Beacon Hill speciation trends network site, Washington operates three supplemental speciation sites. Supplemental sites are located at Seattle, 10th and Weller; Tacoma, South L Street; and Yakima, S. 4th Avenue.

Seattle, 10th & Weller

| | |
|--|--|
| Site Information | |
| Site Name | Seattle, 10th & Weller |
| AQS ID | 530330030 |
| GPS coordinates | LAT/LONG: 047 59' 72"/122 31' 97" |
| Location | Adjacent to Interstate 5 in Downtown Seattle |
| Address | 10th & Weller |
| County | King |
| Distance to road from gaseous probe (meters) | 6 |
| Traffic count (AADT, year) | 146,000 I-5 (2012 WSDOT) |
| Groundcover | Concrete, Grass |
| Statistical Area | Seattle-Bellevue-Everett, WA |
| Monitor Information Pollutant, POC | |
| Parameter code | See list above |
| Basic monitoring objectives(s) | Special Studies |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | URG 3000N, Met One SASS |
| Method code | |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Ecology |
| Analytical Lab | RTI |
| Reporting Agency | RTI |
| Spatial scale | Neighborhood |
| Monitoring start date | 3/15 |
| Current sampling frequency | 1/6 |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 3 |
| Distance from supporting structure (meters) | 3 |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | Teflon |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the NAAQS? | No |

Purpose: Seattle 10th & Weller is Washington's primary near-road monitoring site. Provide long-term data to establish and track trends, determine spatial and temporal differences of PM_{2.5} composition between cities and regions over time, provide representative PM_{2.5} speciation data to support exposure assessments, and determine where PM_{2.5} emissions come from.

Tacoma, South L Street

(PSCAA)

| | |
|--|------------------------------|
| Site Information | |
| Site Name | Tacoma L Street |
| AQS ID | 530530029 |
| GPS coordinates | 047 11' 11"/122 27' 06" |
| Location | Shelter |
| Address | 7802 South L Street, Tacoma |
| County | Pierce |
| Distance to road from gaseous probe (meters) | 100 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Asphalt, grass |
| Statistical Area | Seattle-Bellevue-Everett, WA |
| Monitor Information Pollutant, POC | |
| Parameter code | See list above |
| Basic monitoring objectives(s) | Special Studies |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | URG 3000N, Met One SASS |
| Method code | |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Ecology |
| Analytical Lab | RTI |
| Reporting Agency | RTI |
| Spatial scale | Neighborhood |
| Monitoring start date | 11/06 |
| Current sampling frequency | 1/6 |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 2 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | N/A |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the NAAQS? | No |

Purpose: Provide long-term data to establish and track trends, determine spatial and temporal differences of PM_{2.5} composition between cities and regions over time, provide representative PM_{2.5} speciation data to support exposure assessments, and determine where PM_{2.5} emissions come from.

Yakima, S. 4th**(YRCAA)**

| | |
|--|--|
| Site Information | |
| Site Name | Yakima S. 4th (YRCAA) |
| AQS ID | 530770009 |
| GPS coordinates | 046 35' 42"/120 30' 44" |
| Location | Rooftop Yakima Comprehensive M H |
| Address | 402 South 4th Avenue, Yakima |
| County | Yakima |
| Distance to road from gaseous probe (meters) | 14 |
| Traffic count (AADT, year) | N/A |
| Groundcover | Asphalt roof, grass & cement on the ground |
| Statistical Area | Yakima, WA |
| Monitor Information Pollutant, POC | |
| Parameter code | See list above |
| Basic monitoring objectives(s) | Special Studies |
| Site type(s) | Population Exposure |
| Monitor type(s) | SLAMS |
| Instrument manufacturer and model | URG 3000N, Met One SASS |
| Method code | |
| FRM/FEM/ARM/other | Other |
| Collecting Agency | Yakima Region Clean Air Agency |
| Analytical Lab | RTI |
| Reporting Agency | RTI |
| Spatial scale | Neighborhood |
| Monitoring start date | 11/07 |
| Current sampling frequency | 1/6 |
| Calculated sampling frequency | N/A |
| Sampling season | Year-round |
| Probe height (meters) | 2 |
| Distance from supporting structure (meters) | N/A |
| Distance from obstructions on roof (meters) | N/A |
| Distance from obstructions not on roof (meters) | N/A |
| Distance from trees (meters) | N/A |
| Distance to furnace or incinerator flue (meters) | N/A |
| Distance between collocated monitors (meters) | N/A |
| Unrestricted airflow (degrees) | 360 |
| Spacing from minor sources | No minor sources |
| Probe material for reactive gases | N/A |
| Residence time for reactive gases (seconds) | N/A |
| Changes within the next 18 months? | None anticipated |
| Suitable for comparison against the NAAQS? | No |

Purpose: Provide long-term data to establish and track trends, determine spatial and temporal differences of PM_{2.5} composition between cities and regions over time, provide representative PM_{2.5} speciation data to support exposure assessments, and determine PM_{2.5} emissions sources.

Appendix A. EPA Appendix D Forms

| PART 58 APPENDIX D SITE EVALUATION FORM FOR CARBON MONOXIDE (CO) | | | | | |
|--|---|-----------------------|---------------|-----------------|-----|
| SITE NAME _____ All _____ | | SITE ADDRESS _____ | | | |
| AQS ID _____ | | EVALUATION DATE _____ | | EVALUATOR _____ | |
| APPLICABLE SECTION | REQUIREMENT | OBSERVED | CRITERIA MET? | | |
| | | | YES | NO | N/A |
| 4.2.1(a) | One CO monitor is required to operate collocated with one required near-road NO ₂ monitor in CBSAs having a population of 1,000,000 or more persons. If a CBSA has more than one required near-road NO ₂ monitor, only one CO monitor is required to be collocated with a near-road NO ₂ monitor within that CBSA. | | Y | | |
| 4.2.2(a) | Has the EPA Regional Administrator required additional CO monitoring stations above the minimum number of monitors required in 4.2.1? If so, note location in comment field. | | N | | |
| Comments: | | | | | |

| MSA Description ¹ | CBSA population ^{2,3} | Minimum required number of SLAMS CO sites | Present number of SLAMS CO sites in MSA |
|---|--------------------------------|---|---|
| Seattle-Tacoma-Bellevue, WA NCore & Near Road | 3,733,580 | 2 | 2 |
| Cheeka Peak (not in an MSA) NCore | | 1 | 1 |

¹see <http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmk>

²Minimum monitoring requirements apply to the Core Based statistical area (CBSA). CBSA includes both metropolitan and micropolitan statistical areas.

³Population based on latest available census figures.

| PART 58 APPENDIX D SITE EVALUATION FORM FOR PM ₁₀ | | | | |
|--|---|---------------|----|-----|
| SITE NAME _____ All _____ SITE ADDRESS _____ | | | | |
| AQS ID _____ EVALUATION DATE _____ EVALUATOR _____ | | | | |
| APPLICABLE SECTION | REQUIREMENT | CRITERIA MET? | | |
| | | YES | NO | N/A |
| 4.6(a) | Table D-4 indicates the approximate number of permanent stations required in MSAs to characterize national and regional PM ₁₀ air quality trends and geographical patterns. Use the form below and Table D-4 to verify if your PM ₁₀ network has to appropriate number of samplers. | Y | * | |
| Comments: * Seattle-Tacoma-Bellevue, WA has fewer PM ₁₀ monitors than required by CFR. The total numbers of PM ₁₀ analyzers/samplers in this area was reduced through previous Annual Network Plans and approved by EPA. | | | | |

| MSA Description ¹ | MSA population ¹ (2015) | Minimum required number of PM ₁₀ stations (from Table D-4) | Present number of PM ₁₀ stations in MSA |
|---|------------------------------------|---|--|
| Seattle-Tacoma-Bellevue, WA | 3,733,580 | 2-4 | 1 |
| Spokane, WA | 547,824 | 1-2 | 1 |
| Kennewick, WA | 279,116 | 1-2 | 1 |
| Yakima, WA | 248,830 | 1-2 | 1 |
| ¹ see http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmk ² Minimum monitoring requirements apply to the Metropolitan statistical area (MSA). CBSA includes both MSAs and micropolitan statistical areas. ³ Population based on latest available census figures. | | | |

| MSA population ^{1,2} | High concentration ² | Medium concentration ³ | Low concentration ^{4 5} |
|-------------------------------|---------------------------------|-----------------------------------|----------------------------------|
| >1 million | 6-10 | 4-8 | 2-4 |
| 500K to 1 million | 4-8 | 2-4 | 1-2 |
| 250K to 500K | 3-4 | 1-2 | 0-1 |
| 100K to 250K | 1-2 | 0-1 | 0 |

| PART 58 APPENDIX D SITE EVALUATION FORM FOR PM _{2.5} | | | | |
|--|---|---------------|----|-----|
| STATE <u>WA</u> AGENCY <u>ECOLOGY</u> AQS AGENCY CODE <u>ECOLOGY</u> | | | | |
| EVALUATION DATE _____ EVALUATOR _____ | | | | |
| APPLICABLE SECTION | REQUIREMENT | CRITERIA MET? | | |
| | | YES | NO | N/A |
| 4.7.1(a) | States, and where applicable local agencies must operate the minimum number of required PM _{2.5} SLAMS sites listed in Table D-5 of this appendix. Use the form below and Table D-5 to verify if each of your MSAs has the appropriate number of SLAMS FRM/FEM/ARM samplers. | Y | | |
| 4.7.1(b) | Each required SLAMS FRM/FEM/ARM monitoring stations or sites must be sited to represent area-wide air quality in the given MSA (typically neighborhood or urban spatial scale, though micro-or middle-scale okay if it represent many such locations throughout the MSA). | Y | | |
| 4.7.1(b)(1) | At least one SLAMS FRM/FEM/ARM monitoring station is to be sited at neighborhood or larger scale in an area of expected maximum concentration for each MSA where monitoring is required by 4.7.1(a). | Y | | |
| 4.7.1(b)(2) | For CBSAs with a population of 1,000,000 or more persons, at least one FRM/FEM/ARM PM _{2.5} monitor is to be collocated at a near-road NO ₂ station. | Y* | | |
| 4.7.1(b)(3) | For MSAs with additional required SLAMS sites, a FRM/FEM/ARM monitoring station is to be sited in an area of poor air quality. | Y | | |
| 4.7.2 | Each State must operate continuous PM _{2.5} analyzers equal to at least one-half (round up) the minimum required sites listed in Table D-5 of this appendix. At least one required continuous analyzer in each MSA must be collocated with one of the required FRM/FEM/ARM monitors, unless at least one of the required FRM/FEM/ARM monitors is itself a continuous FEM or ARM monitor, in which case no collocation requirement applies. | Y | | |
| 4.7.3 | Each State shall install and operate at least one PM _{2.5} site to monitor for regional background and at least one PM _{2.5} site to monitor regional transport (note locations in comment field). Non-reference PM _{2.5} monitors such as IMPROVE can be used to meet this requirement. | Y** | | |
| 4.7.4 | Each State shall continue to conduct chemical speciation monitoring and analyses at sites designated to be part of the PM _{2.5} Speciation Trends Network (STN). | Y*** | | |
| Comments: * A PM _{2.5} FEM is located at the Seattle 10 th & Weller near-road site. ** Regional background site: Seattle Beacon Hill. Regional Transport site: North Bend. ***STN site: Seattle Beacon Hill | | | | |

| MSA Description ¹ | MSA population ^{2,3} | Design Value for years 2013-2015 | Minimum required number of PM _{2.5} SLAMS FRM/FEM/ARM sites (from Table D-5) | Present number of PM _{2.5} SLAMS FRM/FEM/ARM sites in MSA | Present number of continuous PM _{2.5} FEM/ARM analyzers in MSA | Present number of continuous PM _{2.5} STN analyzers in MSA |
|------------------------------|-------------------------------|----------------------------------|---|--|---|---|
| Seattle-Tacoma-Bellevue, WA | 3,733,580 | 30.0 FEM | 3 | 5 | 5 | 1 |
| Spokane, WA | 547,824 | Insufficient data | 1 | 1 | 1 | 0 |
| Kennewick, WA | 279,116 | Insufficient data | 0 | 0 | 0 | 0 |
| Olympia-Tumwater, WA | 269,536 | 25.0 Neph | 0 | 0 | 0 | 0 |
| Bremerton-Silverdale, WA | 260,131 | 12 | 0 | 0 | 1 | 0 |
| Yakima, WA | 248,830 | 31.0 FEM | 0 | 1 | | 0 |
| Mt. Vernon-Anacortes WA | 121,846 | 11.0 Neph | 0 | 0 | 0 | 0 |

¹see <http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmk>

²Minimum monitoring requirements apply to the metropolitan statistical area (MSA). CBSA includes both MSAs and micropolitan statistical areas.

³Population based on latest available census figures.

Table D-5 of Appendix D to Part 58 –PM_{2.5} Minimum Monitoring Requirements

| MSA population ^{1, 2} | Most recent 3-year design value ≥85% of any PM _{2.5} NAAQS ³ | Most recent 3-year design value <85% of any PM _{2.5} NAAQS ^{3, 4} |
|--------------------------------|--|---|
| >1 million | 3 | 2 |
| 500K to 1 million | 2 | 1 |
| 50K to <500K ⁵ | 1 | 0 |

¹Minimum monitoring requirements apply to the Metropolitan statistical area (MSA).

²Population based on latest available census figures. <https://www.census.gov/>

³The PM_{2.5} National Ambient Air Quality Standards (NAAQS) levels and forms are defined in 40 CFR part 50.

⁴These minimum monitoring requirements apply in the absence of a design value.

⁵Metropolitan statistical areas (MSA) must contain an urbanized area of 50,000 or more population.

| PART 58 APPENDIX D SITE EVALUATION FORM FOR OZONE | | | | |
|---|---|---------------|----|-----|
| STATE <u>WA</u> AGENCY <u>ECOLOGY</u> AQS AGENCY CODE _____ | | | | |
| EVALUATION DATE _____ EVALUATOR _____ | | | | |
| APPLICABLE SECTION | REQUIREMENT | CRITERIA MET? | | |
| | | YES | NO | N/A |
| 4.1(b) | At least one O ₃ site for each MSA, or CSA if multiple MSAs are involved, must be designed to record the maximum concentration (note location in comment field). | Y | | |
| 4.1(c) | The appropriate spatial scales for O ₃ sites are neighborhood, urban, and regional (note deviations in comment field). | Y | | |
| 4.1(f) | Confirm that the monitoring agency consulted with EPA R10 when siting the maximum O ₃ concentration site. | | N | |
| 4.1(i) | O ₃ is being monitored at SLAMS monitoring sites during the "ozone season" as specified in Table D-3 of Appendix D to Part 58. | Y | | |
| Comments: | | | | |

| MSA population ^{1,2} | Most recent 3-year design value concentrations $\geq 85\%$ of any O ₃ NAAQS ³ | Most recent 3-year design value concentrations $< 85\%$ of any O ₃ NAAQS ^{3,4} |
|-------------------------------|---|--|
| >10 million | 4 | 2 |
| 4-10 million | 3 | 1 |
| 350,000-<4 million | 2 | 1 |
| 50,000-<350,000 ⁵ | 1 | 0 |

¹Minimum monitoring requirements apply to the Metropolitan statistical area (MSA). CBSA includes both MSAs and micropolitan statistical areas.
²Population based on latest available census figures.
³The ozone (O₃) National Ambient Air Quality Standards (NAAQS) levels and for ms are defined in 40 CFR part 50.
⁴These minimum monitoring requirements apply in the absence of a design value.
⁵Metropolitan statistical areas (MSA) must contain an urbanized area of 50,000 or more population.

| MSA Description ^a | MSA population ^{1,2} | Minimum required number of SLAMS O ₃ sites (from Table D-2) | Present number of SLAMS O ₃ sites in CBSA |
|------------------------------|-------------------------------|--|--|
| Seattle-Tacoma Bellevue, WA | 3,733,580 | 3 | 6 |
| Spokane, WA | 547,824 | 2 | 2 |

^asee http://www2.census.gov/econ/susb/data/msa_codes_2007_to_2011.txt

Table D-3 of Appendix D to Part 58—Ozone Monitoring Season by State

| State | Begin month | End Month |
|------------|-------------|-----------|
| Alaska | April | October |
| Idaho | May | September |
| Oregon | May | September |
| Washington | May | September |

| PART 58 APPENDIX D SITE EVALUATION FORM FOR SO ₂ | | | | |
|---|---|---------------|----|-----|
| STATE <u>WA</u> AGENCY <u>ECOLOGY</u> AQS AGENCY CODE _____ | | | | |
| EVALUATION DATE _____ EVALUATOR _____ | | | | |
| APPLICABLE SECTION | REQUIREMENT | CRITERIA MET? | | |
| | | YES | NO | N/A |
| 4.4.1 | State and, where appropriate, local agencies must operate a minimum number of required SO ₂ monitoring sites (based on PWEI calculation specified in 4.4.2 – use Table 1 and 2 below to determine minimum requirement for each CBSA) | Y | | |
| 4.4.2(a)(1) | Is the monitor sited within the boundaries of the parent CBSA and is it one of the following site types: population exposure, highest concentration, source impacts, general background, or regional transport? | Y | | |
| 4.4.3(a) | Has the EPA Regional Administrator required additional SO ₂ monitoring stations above the minimum number of monitors required in 4.4.2? If so, note location in comment field. | | N | |
| 4.4.5(a) | Is your agency counting an existing SO ₂ monitor at an NCore site in a CBSA with a minimum monitoring requirement? | Y | | |
| Comments: Three So ₂ monitors were established on January 1, 2017 as required by the Data Reporting Rule. Those sites are Ferndale (2), and Malaga, 1. | | | | |

Table 1

| CBSA Description ¹ | CBSA population ^{1,2} | total amount of SO ₂ in tons per year emitted within the CBSA (use 2014 NEI ⁴) | PWEI (population x total emissions ÷ 1,000,000) | Minimum required number of SO ₂ monitors in CBSA (see Table 2 below) | Present number of SO ₂ monitors in CBSA |
|--|--------------------------------|---|---|---|--|
| Seattle-Tacoma-Bellevue, WA NCore | 3,733,580 | 2,896 | 10,812 | 1 | 1 |
| Cheeka Peak (not in an MSA) NCore | | | | 1 | 1 |
| Ferndale | | | | 1 | 2 |
| Malaga (Wenatchee) | | | | 1 | 1 |
| ¹ see http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmk ² Minimum monitoring requirements apply to the Core Based statistical area (CBSA). CBSA includes both metropolitan and micropolitan statistical areas. ³ Population based on latest available census figures. ⁴ see http://www.epa.gov/ttn/chief/eiinformation.html | | | | | |

Appendix B. EPA Appendix E Forms

Table 2 Minimum SO₂ Monitoring Requirements (Section 4.4.2 of App D to Part 58)

| PWEI (Population weighted Emission Index) Value | Require number of SO ₂ monitors |
|---|--|
| >= 1,000,000 | 3 |
| >= 100,000 but < 1,000,000 | 2 |
| >= 5,000 but < 100,000 | 1 |

PART 58 APPENDIX E SITE EVALUATION FORM FOR CO

SITE NAME _____ All _____ SITE ADDRESS _____

AQS ID _____ EVALUATION DATE _____ EVALUATOR _____

| APPLICABLE SECTION | REQUIREMENT | OBSERVED | CRITERIA MET? | | |
|---|---|----------|---------------|----|-----|
| | | | YES | NO | N/A |
| 2. HORIZONTAL AND VERTICLE PLACEMENT | For neighborhood or larger spatial scale sites the probe must be located 2-15 meters above ground level and must be at least 1 meter vertically or horizontally away from any supporting structure, walls, <i>etc.</i> , and away from dusty or dirty areas. If located near the side of a building or wall, then locate on the windward side relative to the prevailing wind direction during the season of highest concentration potential. | | Y | | |
| 3. SPACING FROM MINOR SOURCES | (a) For neighborhood scale avoid placing the monitor probe inlet near local, minor sources. The source plume should not be allowed to inappropriately impact the air quality data collected at a site. | | Y | | |
| 4. SPACING FROM OBSTRUCTIONS | (a) To avoid scavenging, the probe inlet must have unrestricted airflow and be located away from obstacles. The separation distance must be at least twice the height that the obstacle protrudes above the probe inlet (exception is street canyon or source-oriented sites where buildings and other structures are unavoidable). | | Y | | |
| | (b) The probe inlet must have unrestricted airflow in an arc of at least 180 degrees. This arc must include the predominant wind direction for the season of greatest pollutant concentration potential. | | Y | | |
| 5. SPACING FROM TREES | (a) To reduce possible interference the probe inlet must be at least 10 meters or further from the drip line of trees. | | Y | | |
| | (c) No trees should be between source and probe inlet for microscale sites. | | Y | | |
| 6. SPACING FROM ROADWAYS | 2. (b) Microscale CO monitor probes in downtown areas or urban street canyon locations shall be located a minimum distance of 2 meters and a maximum distance of 10 meters from the edge of the nearest traffic lane. | | Y | | |
| | 2. (c) Microscale CO monitor inlet probes in downtown areas or urban street canyon locations shall be located at least 10 meters from an intersection and preferably at a midblock location. | | | | N/A |
| 9. PROBE MATERIAL & RESIDENCE TIME | (a) Sampling train material must be FEP Teflon or borosilicate glass (e.g., Pyrex) for reactive gases. | | Y | | |
| | (c) Sampling probes for reactive gas monitors at NCore must have a sample residence time less than 20 seconds. | | Y | | |
| Are there any changes that might compromise original siting criteria? If so, provide detail in comment section. | | | | N | |
| Other Comments: Please see Carbon Monoxide section for detail on individual sites. | | | | | |

| Roadway average daily traffic, vehicles per day | Minimum distance ¹ (meters) |
|--|--|
| ≤10,000 | 10 |
| 15,000 | 25 |
| 20,000 | 45 |
| 30,000 | 80 |
| 40,000 | 115 |
| 50,000 | 135 |
| ≥60,000 | 150 |

1. Distance from the edge of the nearest traffic lane. The distance for intermediate traffic counts should be interpolated from the table values based on the actual traffic count.

| PART 58 APPENDIX E SITE EVALUATION FORM FOR PM _{2.5} , PM ₁₀ , PM _{10-2.5} , and Pb | | | | | |
|---|--|----------|---------------|----|-----|
| SITE NAME _____ All _____ SITE ADDRESS _____ | | | | | |
| AQS ID _____ EVALUATION DATE _____ EVALUATOR _____ | | | | | |
| APPLICABLE SECTION | REQUIREMENT | OBSERVED | CRITERIA MET? | | |
| | | | YES | NO | N/A |
| 2. HORIZONTAL AND VERTICLE PLACEMENT | 2-15 meters above ground level for neighborhood or larger spatial scale, 2-7 meters for microscale spatial scale sites and middle spatial scale PM _{10-2.5} sties. 1 meter vertically or horizontally away from any supporting structure, walls, <i>etc.</i> , and away from dusty or dirty areas. If located near the side of a building or wall, then locate on the windward side relative to the prevailing wind direction during the season of highest concentration potential. | | Y | | |
| 3. SPACING FROM MINOR SOURCES | (a) For neighborhood or larger spatial scales avoid placing the monitor near local, minor sources. The source plume should not be allowed to inappropriately impact the air quality data collected at a site. Particulate matter sites should not be located in an unpaved area unless there is vegetative ground cover year round. | | Y | | |
| 4. SPACING FROM OBSTRUCTIONS | (a) To avoid scavenging, the inlet must have unrestricted airflow and be located away from obstacles. The separation distance must be at least twice the height that the obstacle protrudes above the probe inlet. | | Y | | |
| | (b) The inlet must have unrestricted airflow in an arc of at least 180 degrees. This arc must include the predominant wind direction for the season of greatest pollutant concentration potential. For particle sampling, a minimum of 2 meters of separation from walls, parapets, and structures is required for rooftop site placement. | | Y | | |
| 5. SPACING FROM TREES | (a) To reduce possible interference the inlet must be at least 10 meters or further from the drip line of trees. | | Y | | |
| | (c) No trees should be between source and probe inlet for microscale sites. | | Y | | |
| 6. SPACING FROM ROADWAYS | Spacing from roadways is dependent on the spatial scale and ADT count. See section 6.3(b) and figure E-1 for specific requirements. | | Y | | |
| Are there any changes that might compromise original siting criteria? | | | | N | |
| Other Comments: Please see the PM _{2.5} , PM ₁₀ , PM _{10-2.5} and Pb sections for individual detail. | | | | | |

| PART 58 APPENDIX E SITE EVALUATION FORM FOR NO, NO _x , NO ₂ , and NO _y | | | | | |
|--|--|----------|---------------|----|-----|
| SITE NAME <u>All</u> SITE ADDRESS _____ | | | | | |
| AQS ID _____ EVALUATION DATE _____ EVALUATOR _____ | | | | | |
| APPLICABLE SECTION | REQUIREMENT | OBSERVED | CRITERIA MET? | | |
| | | | YES | NO | N/A |
| 2. HORIZONTAL AND VERTICLE PLACEMENT | For neighborhood or larger spatial scale sites the probe must be located 2-15 meters above ground level and must be at least 1 meter vertically or horizontally away from any supporting structure, walls, etc., and away from dusty or dirty areas. Microscale near-road NO ₂ monitoring sites are required to have sampler inlets between 2 and 7 meters above ground level. If located near the side of a building or wall, then locate the sampler probe on the windward side relative to the prevailing wind direction during the season of highest concentration potential. | | Y | | |
| 3. SPACING FROM MINOR SOURCES | (a) For neighborhood scale and larger avoid placing the monitor probe inlet near local, minor sources. The source plume should not be allowed to inappropriately impact the air quality data collected at a site. | | Y | | |
| 4. SPACING FROM OBSTRUCTIONS | (a) To avoid scavenging, the probe inlet must have unrestricted airflow and be located away from obstacles. The separation distance must be at least twice the height that the obstacle protrudes above the probe inlet. | | Y | | |
| | (b) The probe inlet must have unrestricted airflow in an arc of at least 180 degrees. This arc must include the predominant wind direction for the season of greatest pollutant concentration potential. | | Y | | |
| | (d) For near-road NO ₂ monitoring stations, the monitor probe shall have an unobstructed air flow, where no obstacles exist at or above the height of the monitor probe, between the monitor probe and the outside nearest edge of the traffic lanes of the target road segment. | | Y | | |
| 5. SPACING FROM TREES | (a) To reduce possible interference the probe inlet must be at least 10 meters or further from the drip line of trees. | | Y | | |
| | (c) No trees should be between source and probe inlet for microscale sites. | | Y | | |
| 6. SPACING FROM ROADWAYS | See spacing requirements table below | | Y | | |
| 9. PROBE MATERIAL & RESIDENCE TIME | (a) Sampling train material must be FEP Teflon or borosilicate glass (e.g., Pyrex). | | Y | | |
| | (c) Sampling probes for reactive gas monitors at NCore and at NO ₂ sites must have a sample residence time less than 20 seconds. | | Y | | |
| Are there any changes that might compromise original siting criteria? If so, provide detail in comment section. | | | | N | |
| Other Comments: Please see the NO, NO _x , NO ₂ and NO _y section for detail on individual sites. | | | | | |

| Roadway average daily traffic, vehicles per day | Minimum distance ¹ (meters) | Minimum distance ^{1,2} (meters) |
|---|--|--|
| ≤1,000 | 10 | 10 |
| 10,000 | 10 | 20 |
| 15,000 | 20 | 30 |
| 20,000 | 30 | 40 |
| 40,000 | 50 | 60 |
| 70,000 | 100 | 100 |
| ≥110,000 | 250 | 250 |

¹Distance from the edge of the nearest traffic lane. The distance for intermediate traffic counts should be interpolated from the table values based on the actual traffic count.

²Applicable for ozone monitors whose placement has not already been approved as of December 18, 2006.

| PART 58 APPENDIX E SITE EVALUATION FORM FOR SO ₂ | | | | | |
|---|--|----------|---------------|----|-----|
| SITE NAME _____ All _____ SITE ADDRESS _____ | | | | | |
| AQS ID _____ EVALUATION DATE _____ EVALUATOR _____ | | | | | |
| APPLICABLE SECTION | REQUIREMENT | OBSERVED | CRITERIA MET? | | |
| | | | YES | NO | N/A |
| 2. HORIZONTAL AND VERTICLE PLACEMENT | 2-15 meters above ground level. 1 meter vertically or horizontally away from any supporting structure, walls, <i>etc.</i> , and away from dusty or dirty areas. If located near the side of a building or wall, then locate on the windward side relative to the prevailing wind direction during the season of highest concentration potential. | | Y | | |
| 3. SPACING FROM MINOR SOURCES | (a) For neighborhood scale avoid placing the monitor probe inlet near local, minor sources. The source plume should not be allowed to inappropriately impact the air quality data collected at a site. | | Y | | |
| 4. SPACING FROM OBSTRUCTIONS | (a) To avoid scavenging, the probe inlet must have unrestricted airflow and be located away from obstacles. The separation distance must be at least twice the height that the obstacle protrudes above the probe inlet. | | Y | | |
| | (b) The probe inlet must have unrestricted airflow in an arc of at least 180 degrees. This arc must include the predominant wind direction for the season of greatest pollutant concentration potential. | | Y | | |
| 5. SPACING FROM TREES | (a) To reduce possible interference the probe inlet must be at least 10 meters or further from the drip line of trees. | | Y | | |
| | (c) No trees should be between source and probe inlet for microscale sites. | | Y | | |
| 6. SPACING FROM ROADWAYS | There are no roadway spacing requirements for SO ₂ . | | | | ✓ |
| 9. PROBE MATERIAL & RESIDENCE TIME | (a) Sampling train material must be FEP Teflon or borosilicate glass (e.g., Pyrex). | | Y | | |
| | (c) Sampling probes for reactive gas monitors at NCore must have a sample residence time less than 20 seconds. | | Y | | |
| Are there any changes that might compromise original siting criteria? If so, provide detail in comment section. | | | | N | |
| Other Comments: Please see the SO ₂ section for detail on individual sites. | | | | | |

| PART 58 APPENDIX E SITE EVALUATION FORM FOR O ₃ | | | | | |
|---|--|----------|---------------|----|-----|
| SITE NAME <u>All</u> SITE ADDRESS _____ | | | | | |
| AQS ID _____ EVALUATION DATE _____ EVALUATOR _____ | | | | | |
| APPLICABLE SECTION | REQUIREMENT | OBSERVED | CRITERIA MET? | | |
| | | | YES | NO | N/A |
| 2. HORIZONTAL AND VERTICLE PLACEMENT | 2-15 meters above ground level. 1 meter vertically or horizontally away from any supporting structure, walls, <i>etc.</i> , and away from dusty or dirty areas. If located near the side of a building or wall, then locate on the windward side relative to the prevailing wind direction during the season of highest concentration potential. | | Y | | |
| 3. SPACING FROM MINOR SOURCES | (a) For neighborhood scale avoid placing the monitor probe inlet near local, minor sources. The source plume should not be allowed to inappropriately impact the air quality data collected at a site. | | Y | | |
| | (b) To minimize scavenging effects, the probe inlet must be away from furnace or incineration flues or other minor sources of SO ₂ or NO. | | Y | | |
| 4. SPACING FROM OBSTRUCTIONS | (a) To avoid scavenging, the probe inlet must have unrestricted airflow and be located away from obstacles. The separation distance must be at least twice the height that the obstacle protrudes above the probe inlet. | | Y | | |
| | (b) The probe inlet must have unrestricted airflow in an arc of at least 180 degrees. This arc must include the predominant wind direction for the season of greatest pollutant concentration potential. | | Y | | |
| 5. SPACING FROM TREES | (a) To reduce possible interference the probe inlet must be at least 10 meters or further from the drip line of trees. | | Y | | |
| | (c) No trees should be between source and probe inlet for microscale sites. | | Y | | |
| 6. SPACING FROM ROADWAYS | See spacing requirements table below | | Y | | |
| 9. PROBE MATERIAL & RESIDENCE TIME | (a) sampling train material must be FEP Teflon or borosilicate glass (e.g., Pyrex). | | Y | | |
| | (c) Sampling probes for reactive gas monitors at NCore must have a sample residence time less than 20 seconds. | | Y | | |
| Are there any changes that might compromise original siting criteria? If so, provide detail in comment section. | | | | N | |
| Other Comments: Please see the Ozone section for detail on individual sites. | | | | | |

Appendix C. Bellevue Site Relocation

Bellevue Site Relocation Analysis

From December 1, 2016 through spring of 2017, Ecology ran correlated nephelometers at the new Bellevue-SE 12th St site (530330031) as well as the old Bellevue-Bellevue Way site (530330037) to evaluate the agreement between the two sites. The results of this study showed Bellevue-SE 12th St to be a suitable location for a replacement site. The SE 12th St site captured both the seasonal and diurnal variation observed at Bellevue Way, though its concentrations were an average of 8.5% lower than those at Bellevue Way.

Concentrations across Bellevue are consistently low overall. During the period 12/1/2016-4/10/2017, the maximum 24-hour concentration observed on either monitor was 11.8 µg/m³ at Bellevue Way on 1/15/2017. That same day, SE 12th St recorded a concentration of 10.6 µg/m³. Though concentrations at SE 12th St were slightly lower, these results indicate that the risk of unhealthy air days is minimal at both sites, and the difference between the two is negligible.

Figure 8 shows a scatterplot of 24-hour concentrations at both sites. The two datasets are well-correlated, with a Pearson correlation coefficient of 0.91. The time-series plot in Figure 9 shows that SE 12th St largely captures the day-to-day variation observed at the Bellevue Way site.

Figure 10 shows a comparison between 1-hour concentrations across several different time intervals: hour of day and day of week (top), hour of day (bottom left) and day of week (bottom right). These results show that the difference between the two sites is most pronounced on weekdays and during the middle of the day between 9 a.m. and 3 p.m. This difference is to be expected given the different siting environments; SE 12th St is located in a residential area, while Bellevue Way is located in a commercial area with vehicle traffic and other activity throughout the weekday. The evening and weekend peaks are more comparable between the two sites.

Given that (a) concentrations are relatively low in Bellevue overall; (b) the SE 12th St concentrations were largely consistent with and comparable to those at Bellevue Way; and (c) SE 12th St better captures residential neighborhood conditions, Ecology has determined that the SE 12th St site can adequately represent neighborhood-scale concentrations in the Bellevue area.

| Roadway average daily traffic, vehicles per day | Minimum distance ¹ (meters) | Minimum distance ^{1,2} (meters) |
|---|--|--|
| ≤1,000 | 10 | 10 |
| 10,000 | 10 | 20 |
| 15,000 | 20 | 30 |
| 20,000 | 30 | 40 |
| 40,000 | 50 | 60 |
| 70,000 | 100 | 100 |
| ≥110,000 | 250 | 250 |

¹Distance from the edge of the nearest traffic lane. The distance for intermediate traffic counts should be interpolated from the table values based on the actual traffic count.

²Applicable for ozone monitors whose placement has not already been approved as of December 18, 2006.

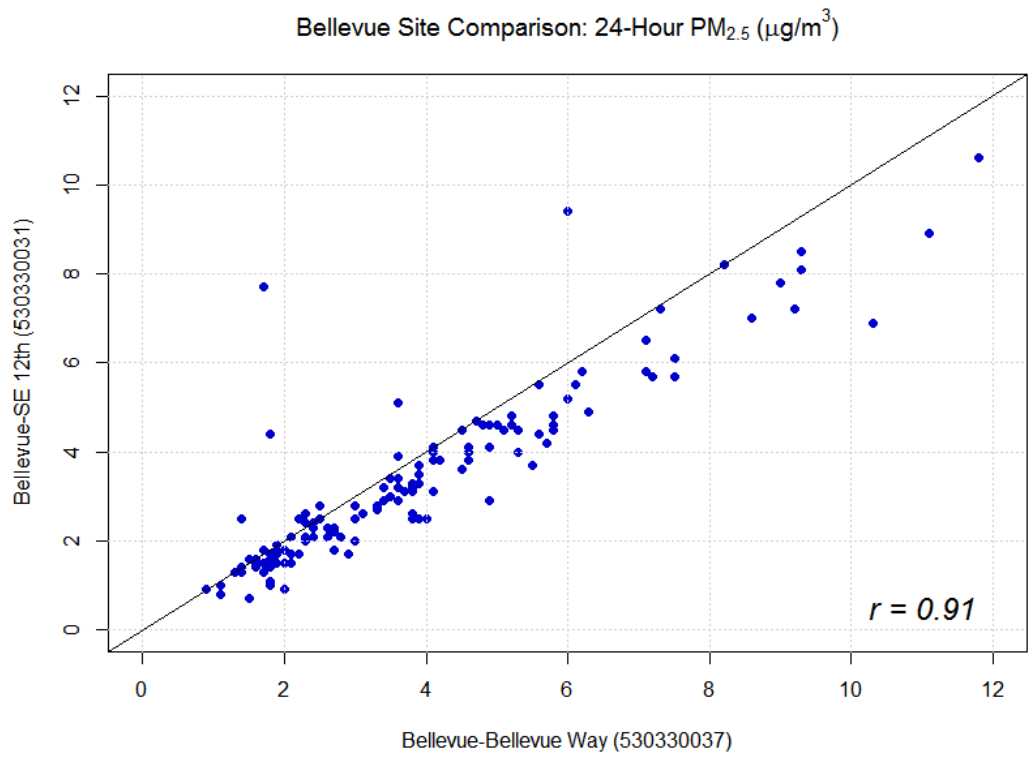


Figure 8. Scatterplot of 24-hour concentrations from both Bellevue sites.

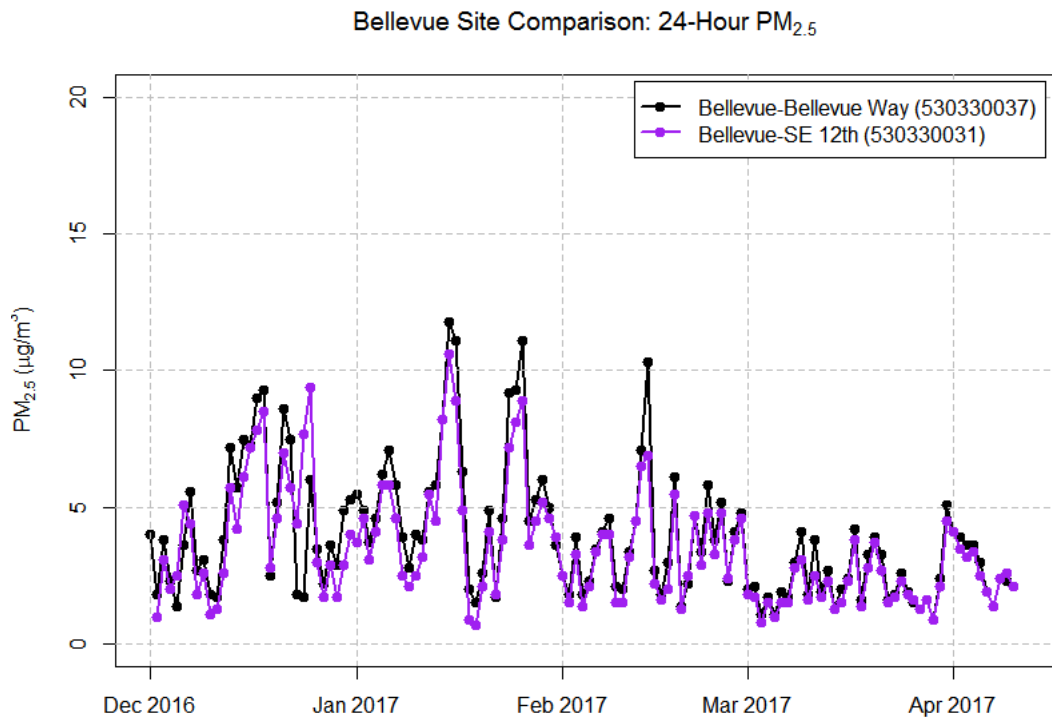


Figure 9. Time-series plot of 24-hour concentrations at both Bellevue sites.

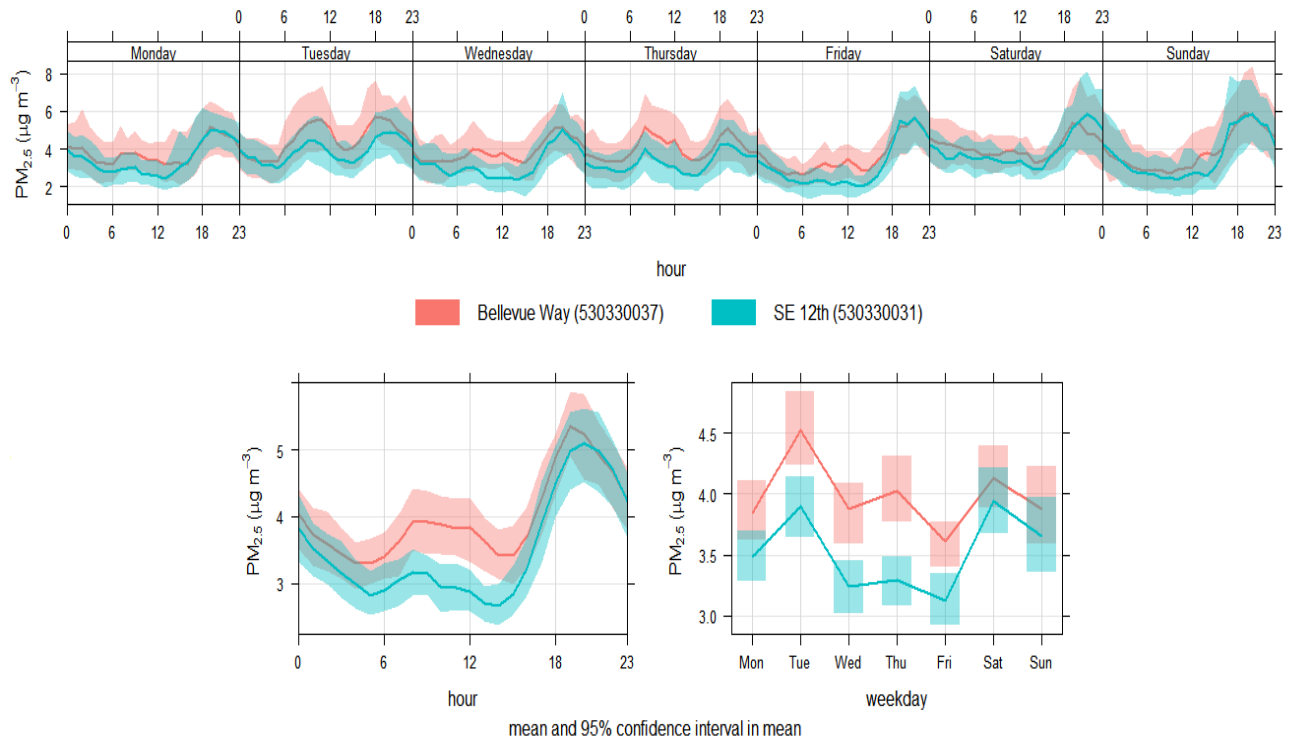


Figure 10. Plot of 1-hour concentrations across various time intervals at both Bellevue sites.

Public Comment and Response to Comment

References

1. Code of Federal Regulations, Title 40, Part 58, Appendix A, B, C, D & E.
2. Code of Federal Regulations, Title 40, Part 50.
3. Code of Federal Regulations, Title 40, Part 53.
4. Code of Federal Regulations, Title 40, Part 58.
5. U.S. EPA Revised Requirements for Designation of Reference and Equivalent Methods for PM_{2.5} and Ambient Air Quality Surveillance for Particulate Matter -Final Rule. 40 CFR Parts 53 and 58. Federal Register, 62 (138):38763-38853. July 18, 1997
6. U.S. EPA Revisions to Ambient Air Monitoring Regulations – Final Rule. 40 CFR, Parts 53 and 58. Federal Register 7: 61236. October 17, 2006
7. U.S. EPA National Ambient Air Quality Standards for Particulate Matter – Final Rule. 40 CFR Parts 50, 51, 52, 53, and 58. January 15, 2013
8. Guidance for Network Design and Optimum Site Exposure for PM_{2.5} and PM₁₀, EPA-454/R-99-022, December 15, 1997.
9. SLAMS/NAMS/PAMS Network Review Guidance, EPA-454/R-98-003, March 1998.
10. Ambient Monitoring Guidelines for Prevention of Significant Deterioration (PSD), EPA-450/4-87-007, May 1987.
11. Guideline on Ozone Monitoring Site Selection, EPA-454/R-98-002, August 1998.