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State of Washington

2017 Ambient Air Monitoring Network Report

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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
$\mu g/m^3$	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 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 future high priority monitoring requirements.

CO:	No change
PM_{10}:	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 (O_3, 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 (NO_2, 42600, 42601, 42612)

Recommendations/modifications: None.

Additional monitors: None.

Sulfur dioxide (SO_2, 42401)

Recommendations/proposed modifications: None.

Additional monitors: None.

Particulate matter 10 (PM_{10}, 81102)

Recommendations/proposed modifications: None.

Additional monitors: None.

Thurston County maintenance area (Lacey $PM_{2.5}$)

As detailed in the Second PM_{10} Maintenance Plan for Thurston County, ORCAA submitted the design value estimates for the Lacey-College Street nephelometer site (53670013). The 5-year PM_{10} design value estimate for 2012-2016 was 43 $\mu g/m^3$. The PM_{10} design value estimate for 2014-2016 was 39 $\mu g/m^3$.

Ecology provided daily 24-hour averages for that period. 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 in the PM_{10} 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 PM_{10} maintenance areas

Three- and five-year design values for the Kent, Seattle, and Tacoma PM_{10} 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 PM_{10} Limited Maintenance Plan.

A 3-year PM_{10} design value of 150 $\mu g/m^3$ or below demonstrates continued compliance with the PM_{10} NAAQS. A 5-year design value below 98 $\mu g/m^3$ 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 PM_{10} NAAQS and to confirm continued eligibility for the LMP approach. The 2016 5-year design value is 59±9 $\mu g/m^3$ and the 3-year design value is 59±12 $\mu g/m^3$.

The $PM_{2.5}$ FEM TEOM at Seattle-Duwamish (530330057) is used to assure continued compliance with the PM_{10} NAAQS and to confirm continued eligibility for the LMP approach. The 2016 5-year design value is 57±6 $\mu g/m^3$ and the 3-year design value is 58±6 $\mu g/m^3$. 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 PM_{10} SIP Development Guide.

The $PM_{2.5}$ nephelometer at Tacoma-Alexander Avenue (530530031) is used to assure continued compliance with the PM_{10} NAAQS and to confirm continued eligibility for the LMP approach. The 2016 5-year design value is 68±16 $\mu g/m^3$ and the 3-year design value is 66±23 $\mu g/m^3$.

Spokane County maintenance area (Spokane PM_{10})

The Spokane County Maintenance area design value is based on FRM and FEM 24-hour PM_{10} 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 PM_{10} design value below 98 $\mu g/m^3$ demonstrates the Spokane County Maintenance Area continues to qualify for the LMP approach. The 5-year PM_{10} design value estimate for 2012–2016 is 84 $\mu g/m^3$. The design value meets LMP qualification criteria.

The 3-year PM_{10} design value at or below 1.0 demonstrates compliance with the PM_{10} NAAQS. The design value is the number of 24-hour exceedances of 150 $\mu g/m^3$, averaged over three years. The 2016 PM_{10} 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 February 29, 2016. During the winter of 2014-2015, 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 Lake Forest Park monitor for calling burn bans in north King County. Discussions continue with other entities within Shoreline.

From December 1, 2016 through spring of 2017, Ecology ran correlated nephelometers at the new Bellevue-SE 12th Street 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 Street to be a suitable location for a replacement site. The SE 12th Street site captured both the seasonal and diurnal variation observed at Bellevue Way, although its concentrations were an average of 8.5 percent lower than those at Bellevue Way.

Concentrations across Bellevue are consistently low overall. Between December 1, 2016 through April 10, 2017, the maximum 24-hour concentration observed on either monitor was 11.8 µg/m^3 at Bellevue Way on January 15, 2017. That same day, SE 12th Street recorded a concentration of 10.6 µg/m^3. Although concentrations at SE 12th Street 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 <u>not</u> 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.

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							
	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, SO_2,

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 SO_2 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 SO_2 in the airshed. A minimum number of SO_2 SLAMS sites are required for targeted sources of SO_2 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 use 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

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)**
O_3	Middle [300m] Neighborhood Urban & Regional [1km]	3–15	>1	>10
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 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 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 that is used for monitoring; building construction; growth of trees; changes in roadways; change in neighborhood, type of use.

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 are 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 based on 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 (if the number of monitors is appropriate and if the monitors are 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.

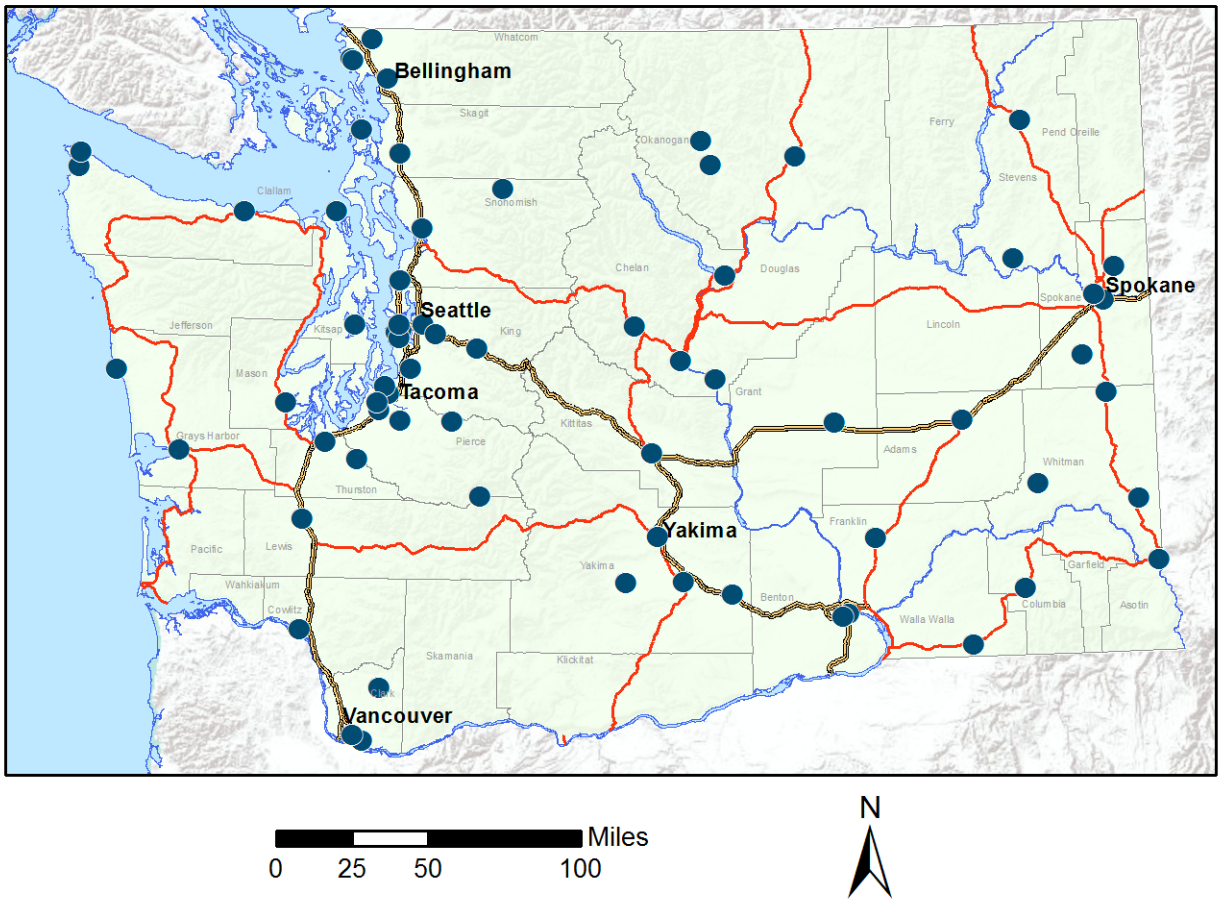

Figure 1. Map of Washington monitoring (all sites)

Table 4. Carbon Monoxide (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 and Weller	4/14	Near-road	Urban	Continuous	Continue
530090013	Cheeka Peak	5/06	Rural NCore	Regional	Continuous	Continue

Additional monitors: None.

Recommendations/modifications: As discussed in the April 2016 Limited Maintenance Plan (LMP) for the Spokane carbon monoxide area (approved by EPA on July 14, 2016, 81 FR 45417), Spokane Regional Clean Air Agency and Ecology will compare triennial emissions analysis results from future years 2017, 2020, and 2023 to the baseline 2002 carbon monoxide emissions as part of the alternate method to verify continued attainment and continued eligibility for the LMP option. Information listed below in pounds per winter day is consistent with the LMP. Currently, only 2014 emissions inventory is available. (Source: April 2016 LMP, Section 7.1).

Year	2002	2014	2017	2020	2023
On-road mobile sources	434,000	213,760	NA	NA	NA
Non-road mobile sources	76,320	37,221	NA	NA	NA
Residential wood combustion	105,800	51,462	NA	NA	NA
Total	**616,120**	**302,443**	NA	NA	NA

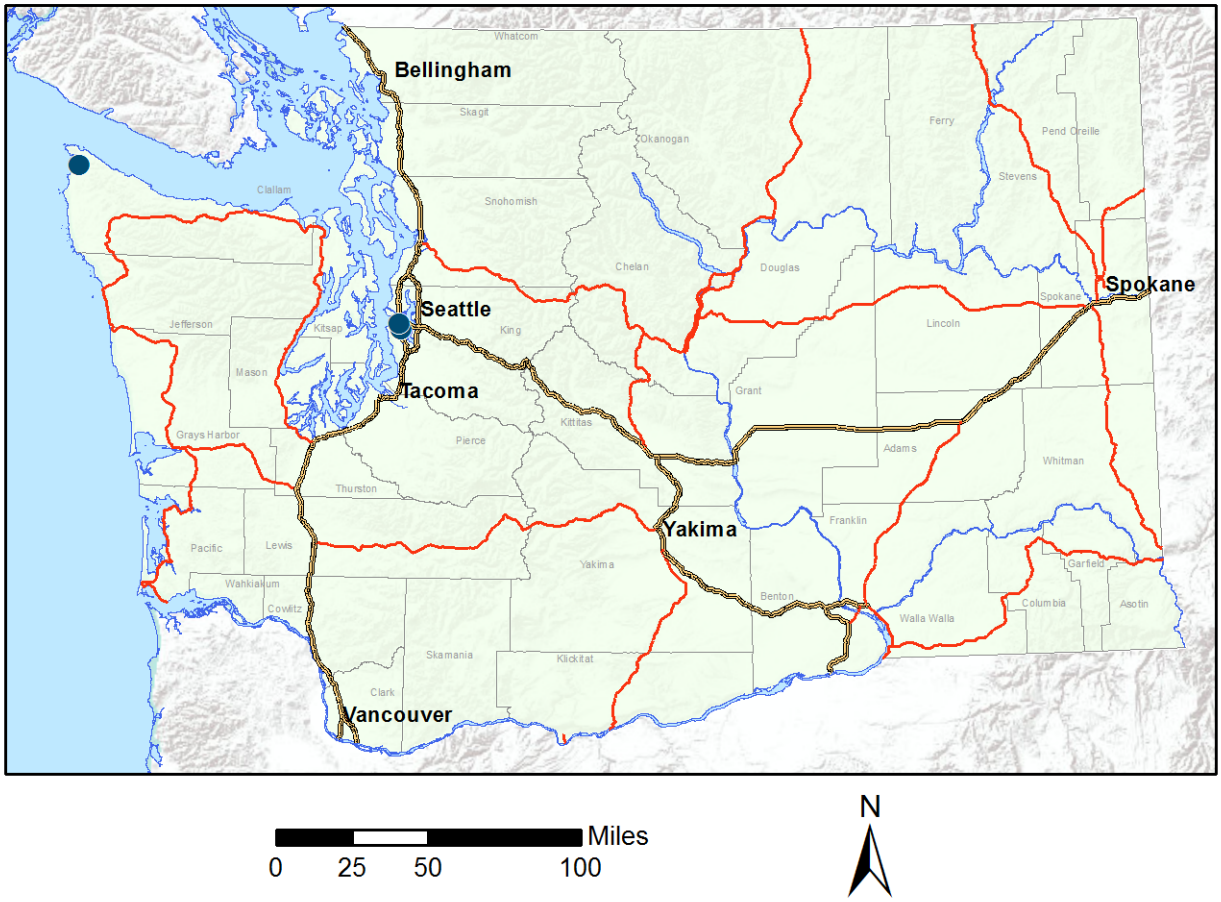

Figure 2. Map of Washington carbon monoxide sites

Seattle, Beacon Hill

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
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 SO_2, 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 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)	6
Traffic count (AADT, year)	149,000 I-5 (2015 WSDOT)
Groundcover	Concrete, Grass
Statistical Area	Seattle-Bellevue-Everett

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 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. O_3, 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.

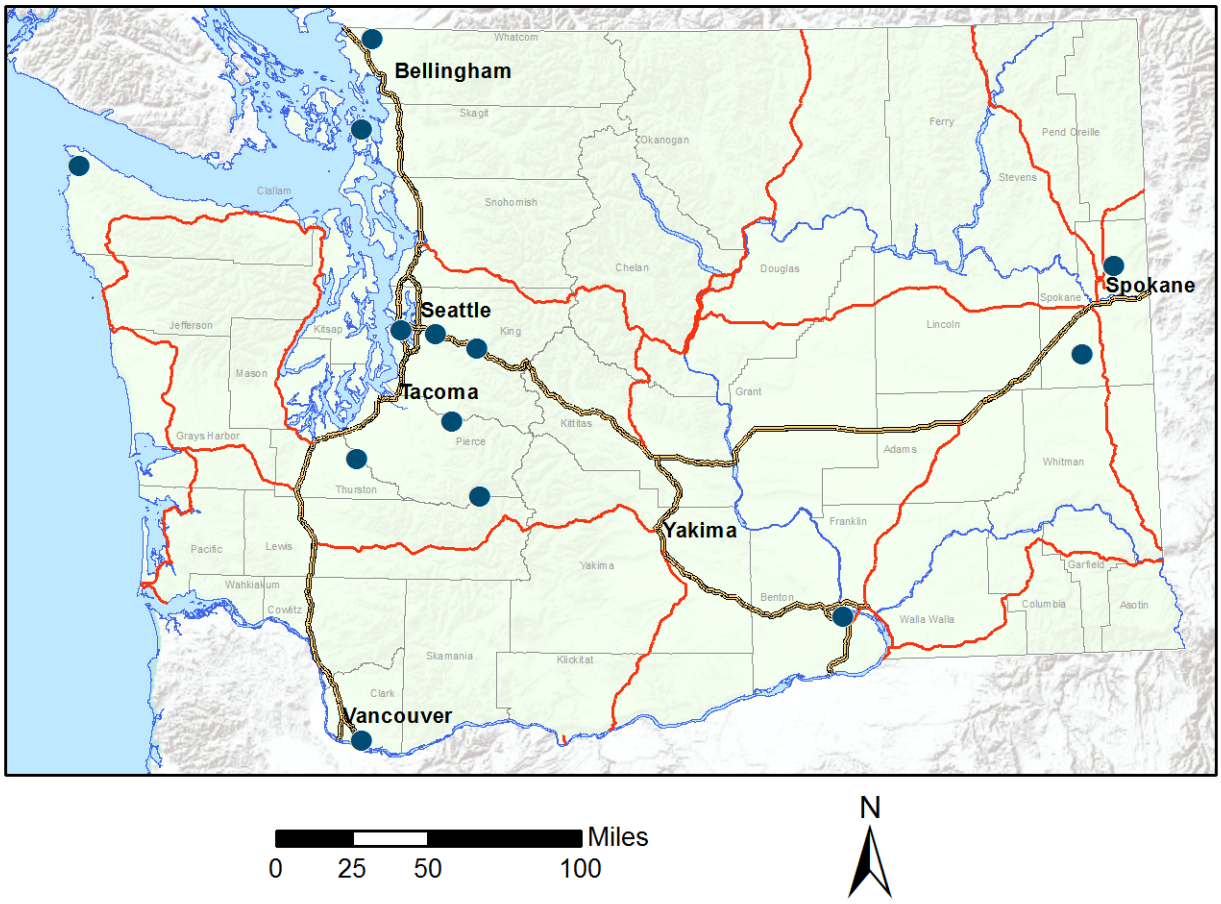

Figure 3. Map of Washington ozone sites

Cheeka Peak (ORCAA)

Site 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 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
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 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
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 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
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: twice in 2014 and three times in 2015. Exceedances will be flagged.

Issaquah, Lake Sammamish State Park

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
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 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

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 2015. It is representative of the Kennewick/Richland area.

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

Mt. Rainier, Jackson Visitor Center

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
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 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
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 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
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, SO_2, 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 Name	Spokane, Greenbluff
AQS ID	530630046
GPS coordinates	LAT/LONG: 047 49' 37"/117 16' 31"
Location	Fire Station in Chattaroy
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
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 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
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 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
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. NO_2 Parameter Codes 42600 NOy, 42601 NO, 42612 NOy-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 and Weller	4/14	SLAMS	Micro	Continuous	Continue
530530024	Tacoma South 36th	1/16	SLAMS	Micro	Continuous	Continue

Additional monitors: None.

Recommendations/proposed modifications: None

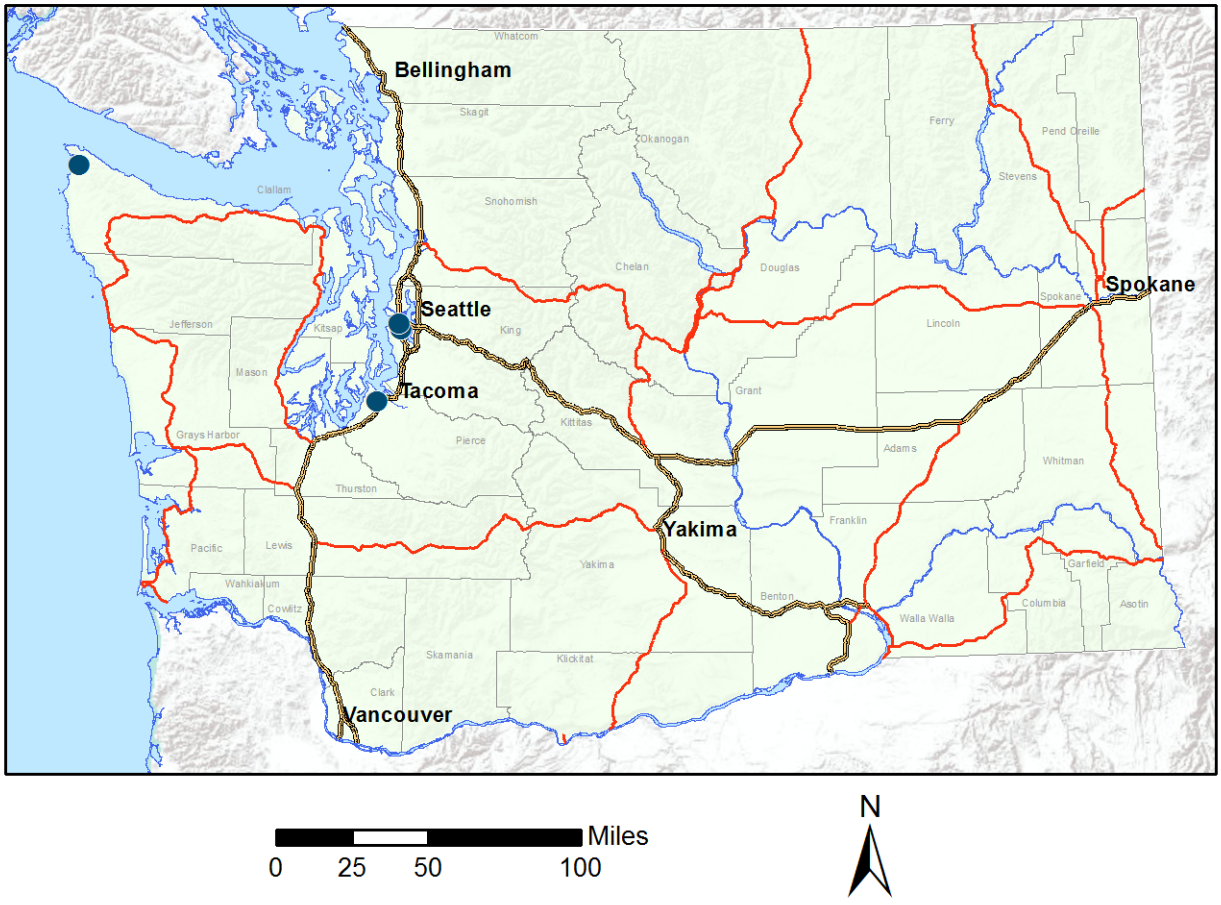

Figure 4. Map of Washington NO_2 sites

Cheeka Peak (ORCAA)

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 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
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 (NO2) /2007 (NOy)
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 (NO2) 10 (NOy)
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(NO2) 5.5 (NOy)
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 NO_2, the site is used for monitoring trace level CO, SO_2, 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 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
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 and Weller exceeded the 2010 NO_2 NAAQS once in 2015.

Tacoma, South 36th

Site Name	Tacoma South 36th
AQS ID	530530024
GPS coordinates	LAT/LONG Est.: 047 22’ 63”/122 46’ 25”
Location	Jenny Reed Elementary School
Address	1802 South 36th, 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
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 South 36th is an EPA-required, near-road monitoring site at Jenny Reed Elementary School, adjacent to I-5 in Tacoma.

Table 7. SO_2 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 SO_2 monitors at two aluminum smelters were established in 2016 and operational as of January 1, 2017.

Recommendations/proposed modifications: None.

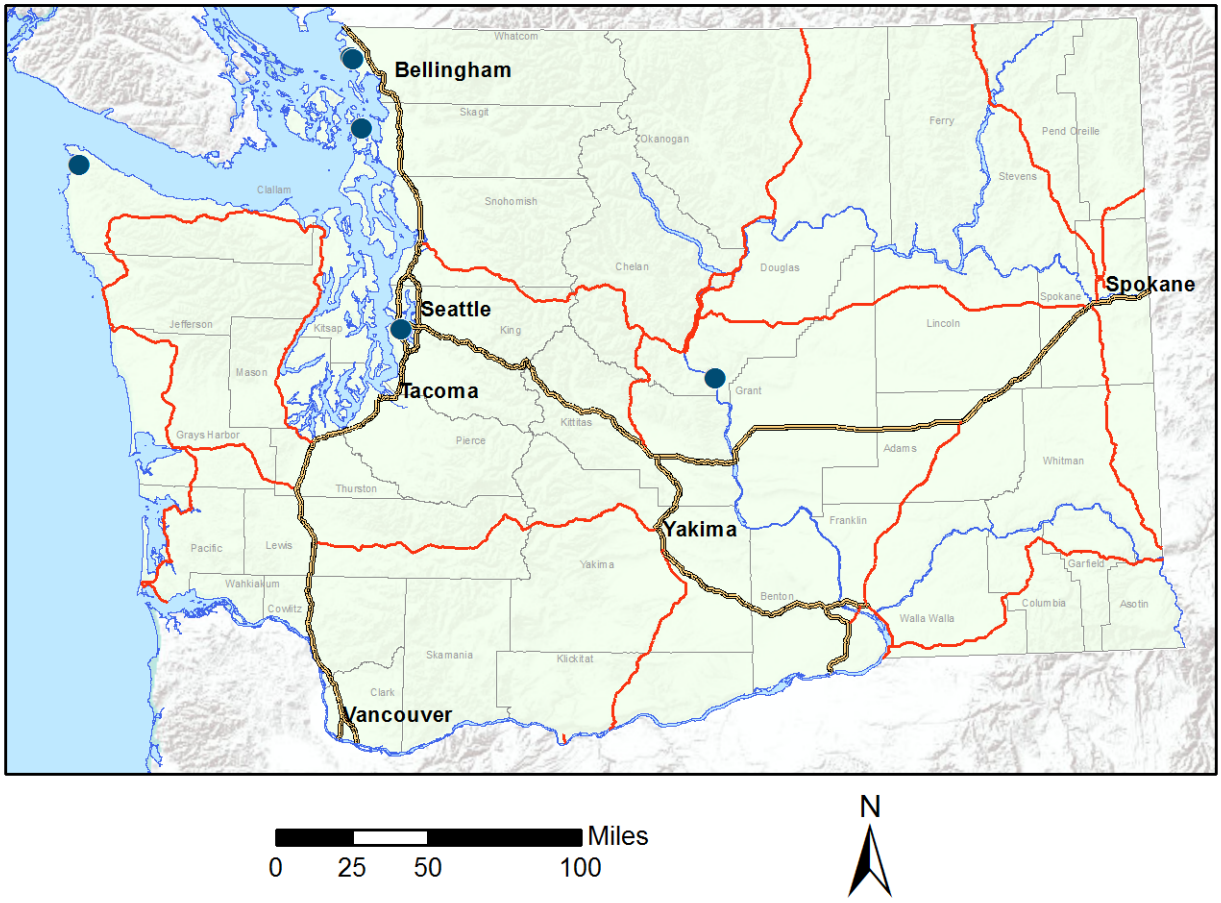

Figure 5. Map of Washington SO_2 sites

Seattle, Beacon Hill

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
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, SO_2, 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 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 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 SO_2 concentrations for determination of NAAQS attainment.

Kickerville Road, Ferndale

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 SO_2 concentrations for determination of NAAQS attainment.

Malaga-Rock Island Dam Road, Wenatchee

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 SO_2 concentrations for determination of NAAQS attainment.

Table 8. PM_{10}, 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 PM_{10} FEM. Note design value information below.

Thurston County maintenance area (Lacey $PM_{2.5}$)

As detailed in the Second PM_{10} Maintenance Plan for Thurston County Washington, ORCAA submitted the design value estimates for the Lacey-College Street nephelometer site (53670013). The 5-year PM_{10} design value estimate for 2012-2016 was 43 $\mu g/m^3$. The PM_{10} design value estimate for 2014-2016 was 39 $\mu g/m^3$.

Ecology provided daily 24-hour averages for that period. 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 in the PM_{10} 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 PM_{10} maintenance areas

Three- and five-year design values for the Kent, Seattle, and Tacoma PM_{10} 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 PM_{10} Limited Maintenance Plan.

A 3-year PM_{10} design value of 150 $\mu g/m^3$ or below demonstrates continued compliance with the PM_{10} NAAQS. A 5-year design value below 98 $\mu g/m^3$ 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 PM_{10} NAAQS and to confirm continued eligibility for the LMP approach. The 2016 5-year design value is 59±9 $\mu g/m^3$ and the 3-year design value is 59±12 $\mu g/m^3$.

The $PM_{2.5}$ FEM TEOM at Seattle-Duwamish (530330057) is used to assure continued compliance with the PM_{10} NAAQS and to confirm continued eligibility for the LMP approach. The 2016 5-year design value is 57±6 µg/m^3 and the 3-year design value is 58±6 µg/m^3. 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 PM_{10} SIP Development Guide.

The PM2.5 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 PM_{10} 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 PM_{10} 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 PM_{10} design value for Augusta Avenue is 0. This design value is in attainment with the standard.

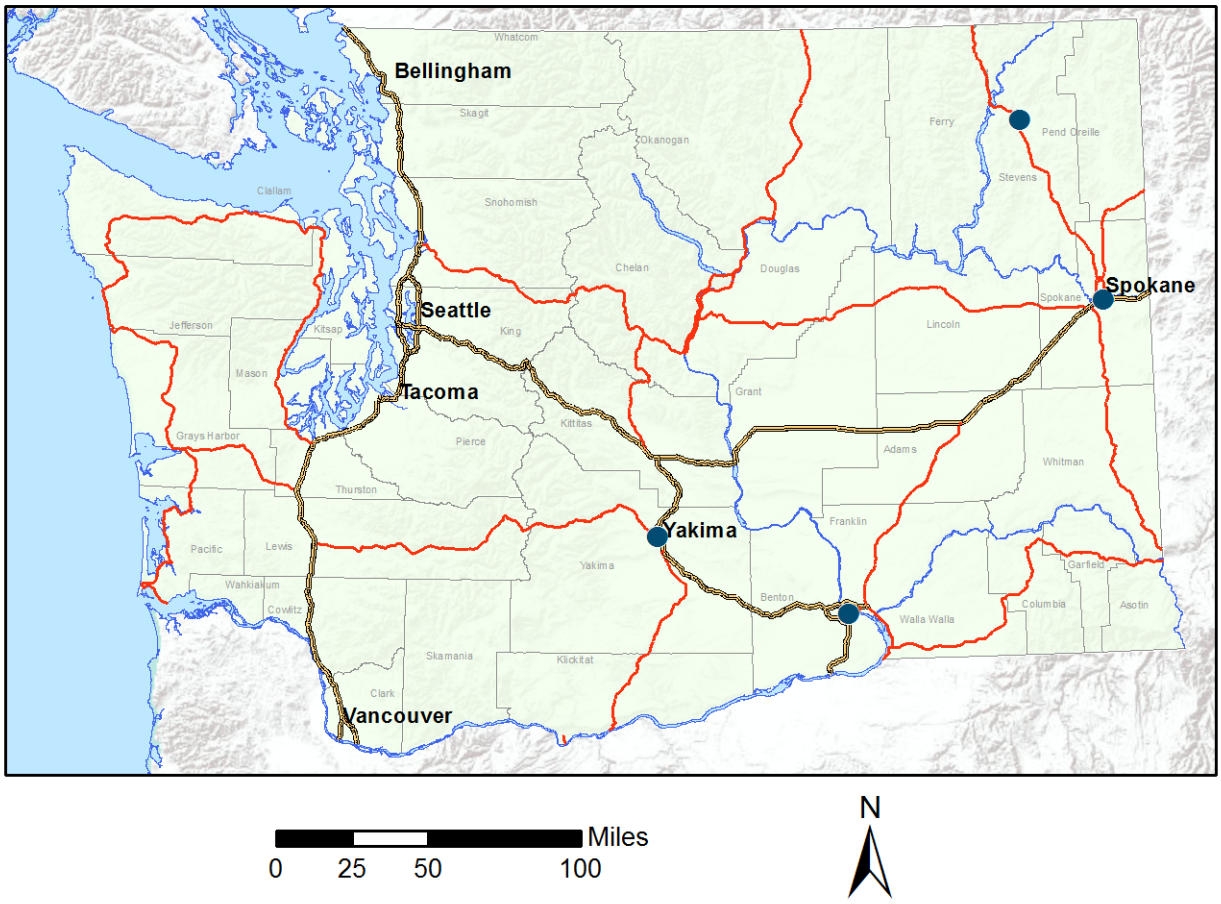

Figure 6. Map of Washington PM_{10} sites

Colville, East 1st

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 East 1st is a neighborhood scale site for PM_{10} 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 PM_{10}: once in 2014, twice in 2015, and once in 2016.

Kennewick, Metaline Avenue (BCAA)

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

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 PM_{10} established in 1994 located in the downtown Kennewick area. It is representative of the Kennewick area and subject to windblown dust.

Exceedances: There were no exceedances in 2016. This site exceeded the standard for PM_{10} three times in 2015. Ecology flagged all three 2015 exceedances and plans to submit demonstrations on one of them. There were no exceedances in 2014.

Spokane, Augusta Avenue (SRCAA)

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
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 PM_{10} located in a commercial area of Spokane. The site is representative of the Spokane area, which has been a PM_{10} nonattainment area in the past.

Exceedances: This site has not exceeded the 24-hour PM_{10} standard in the last three years.

Yakima, South 4th (YRCAA)

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
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 PM_{10} located in a commercial/residential area near downtown. The site is representative of the Yakima area, a past PM_{10} nonattainment area.

Exceedances: This site has not exceeded standard for PM_{10} in over 10 years.

Table 9. $PM_{2.5}$, Parameter Codes 88101, 88502						
AQS#	**Site Name**	**Est.**	**Type**	**Sample Type**	**Sampling Frequency**	**Action for 2017**
530272002	Aberdeen Division St.	8/02	SLAMS	Continuous	Continuous	Continue
530330037	Bellevue, Bellevue Way	4/02	SLAMS	Continuous	Continuous	*Discontinue*
530330031	Bellevue	11/16	SLAMS	Continuous	Continuous	Continue
530730015	Bellingham, Yew St.	11/12	SLAMS	Continuous	Continuous	Continue
530350007	Bremerton Spruce	5/12	SLAMS	Continuous	Continuous	Continue
530030004	Clarkston	3/07	SLAMS	Continuous	Continuous	Continue
530410004	Chehalis	12/09	SLAMS	Continuous	Continuous	Continue
530090013	Cheeka Peak	5/06	Rural NCore	Continuous	Continuous	Continue
530650005	Colville E. 1st	10/15	SLAMS	Continuous	Continuous	Continue
530610020	Darrington, Fir St.	12/10	SLAMS	Continuous	Continuous	Continue
530130002	Dayton, W. Main	2/09	SLAMS	Continuous	Continuous	Continue
530370002	Ellensburg	10/07	SLAMS	Continuous	Continuous	Continue
530050002	Kennewick, Metaline Ave.	8/04	SLAMS	Continuous	Continuous	Continue
530332004	Kent, James and Central	12/10	SLAMS	Continuous	Continuous	Continue
530670013	Lacey, College St.	1/02	SLAMS	Continuous	Continuous	Continue
530750005	LaCrosse, Hill St.	7/02	SLAMS	Continuous	Continuous	Continue
530150015	Longview, 30th Ave.	3/03	SLAMS	Continuous	Continuous	Continue
530610005	Lynnwood, 212th	1/11	SLAMS	Continuous	Continuous	Continue
530610005	Lynnwood, 212th	9/13	SLAMS	Collocated	Continuous	Continue
530611007	Marysville, 7th Ave.	2/10	SLAMS	Continuous	Continuous	Continue
530611007	Marysville, 7th Ave.	7/12	SLAMS	Collocated	Continuous	Continue
530210002	Mesa, Pepoit Way	1/03	SLAMS	Continuous	Continuous	Continue
530251002	Moses Lake, Balsam St.	1/03	SLAMS	Continuous	Continuous	Continue
530570015	Mt. Vernon, S Second St.	8/02	SLAMS	Continuous	Continuous	Continue
530330017	North Bend, North Bend Way	3/03	SLAMS	Continuous	Continuous	Continue
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 and 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

Table 9. $PM_{2.5}$, Parameter Codes 88101, 88502						
AQS#	**Site Name**	**Est.**	**Type**	**Sample Type**	**Sampling Frequency**	**Action for 2017**
530530024	Tacoma South 36th	1/16	SLAMS	Continuous	Continuous	Continue
530530031	Tacoma, Alexander Avenue	1/03	SLAMS	Continuous	Continuous	Continue
530530029	Tacoma, South L Street	1/10	SLAMS	SEQ/Cont.	1/1	Continue
530530029	Tacoma, South L Street	4/12	Co-loc	SEQ/Cont.	1/12	Continue
530110024	Vancouver NE 84th	12/14	SLAMS	FEM	Continuous	Continue
530710005	Walla Walla, 12th Street	1/02	SLAMS	Continuous	Continuous	Continue
530070011	Wenatchee Fifth Street	12/12	SLAMS	Continuous	Continuous	Continue
530110022	Yacolt, Yacolt Road	6/07	SLAMS	Continuous	Continue	Continue
530770009	Yakima, South 4th Avenue	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 February 29, 2016. During the winter of 2014-2015, 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 Lake Forest Park 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/m^3. 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.

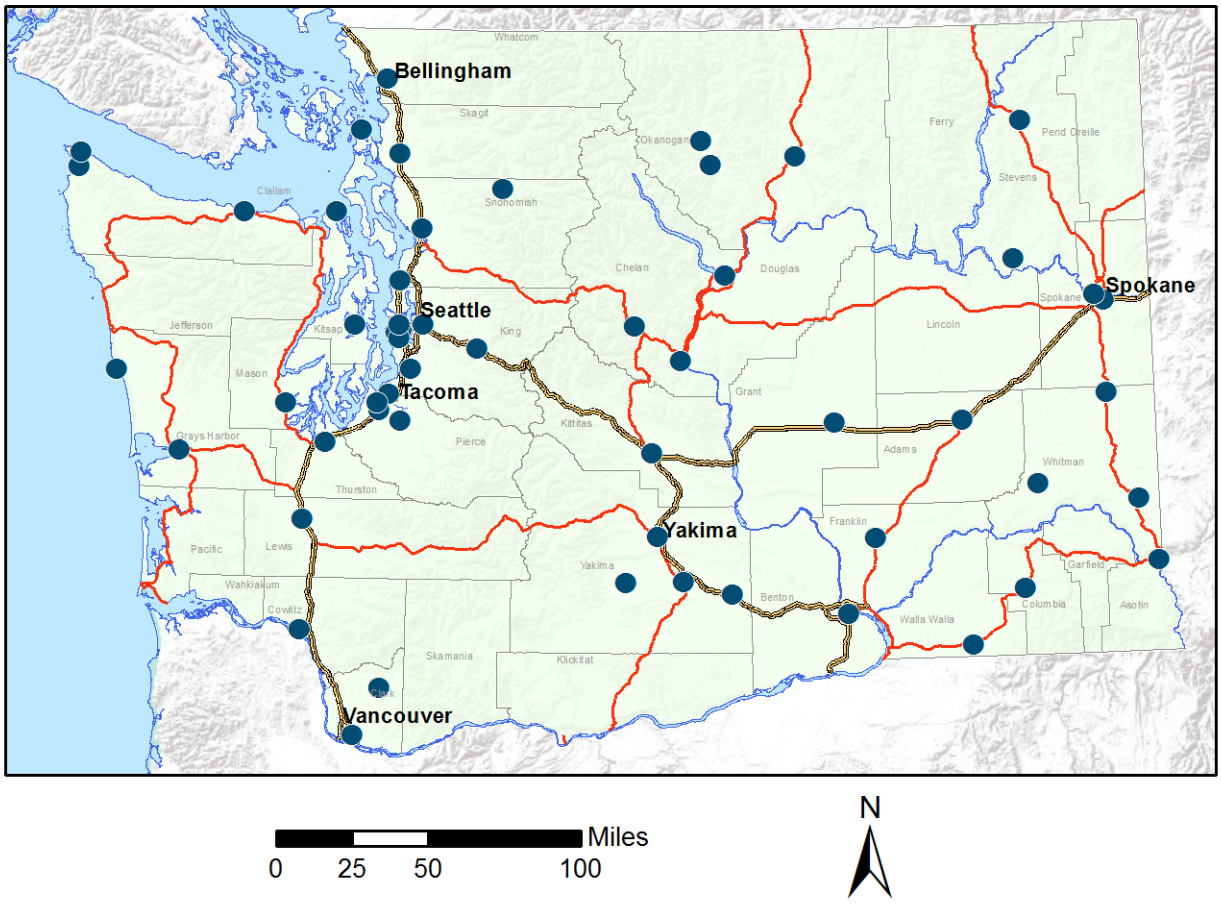

Figure 7. Map of Washington $PM_{2.5}$ sites

Aberdeen, Division Street (ORCAA) – Relocation delayed

Site 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 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
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 Name	Bellevue, SE 12th Street
AQS ID	530330031
GPS coordinates	LAT/LONG: 047 60' 86"/122 14' 83"
Location	Rooftop of Lake Hills Elementary School
Address	14310 SE 12th 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
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 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
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 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
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 Name	Cheeka Peak
AQS ID	530090013
GPS coordinates	LAT/LONG: 048 17' 12"/124 37' 13"
Location	Cheeka Peek (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 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 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 PM_{10} 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, East 1st

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. 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	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 East 1st is a neighborhood scale site for $PM_{2.5}$ originally established in 1996 as a PM_{10} site, 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 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)	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	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 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 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. It was 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 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
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 by 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 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

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 by 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 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
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 PM_{10} NAAQS as well as documenting the area continues to qualify for EPA's LMP option.

LaCrosse, Hill Street

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 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
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 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
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 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
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, Pepoit Way

Site Name	Mesa, Pepoit Way
AQS ID	530210002
GPS coordinates	LAT/LONG: 046 34' 32"/119 00' 25"
Location	Rooftop
Address	200 Pepoit 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 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 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 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
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. The site is collocated with ozone and meteorological equipment.

Port Angeles, East 5th Street (ORCAA)

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 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 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 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
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 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 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 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
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 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
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

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
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 I-5.

Shelton, West Franklin (ORCAA)

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)

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
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 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
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 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

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 and burning sources, and used for curtailment calls during home heating season.

Tacoma, South 36th

Site Name	Tacoma South 36th
AQS ID	530530024
GPS coordinates	LAT/LONG Est.: 047 22’ 63”/122 46’ 25”
Location	Jenny Reed Elementary School
Address	1802 South 36th, 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

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 South 36th is an EPA-required, near-road monitoring site at Jenny Reed Elementary School, adjacent to I-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 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
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 Tideflats. The site is representative of the NE Tacoma/Fife area.

Tacoma, South L Street (PSCAA)

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
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)

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, OR-Vancouver
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 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 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 and wildfires, and used for curtailment calls during home heating season.

Yacolt, Yacolt Road (SWCAA)

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
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 is used for curtailment calls during home heating season.

Yakima, South 4th Avenue (YRCAA)

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
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 is 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 Name	Anacortes, O Street
AQS ID	530570011
GPS coordinates	LAT/LONG: 048 52' 05"/122 61' 42"
Location	Trailer
Address	202 O Avenue, Anacortes
County	Skagit
Distance to road from gaseous probe (meters)	15
Traffic count (AADT, year)	N/A
Groundcover	Asphalt, gravel
Statistical Area	MSA: Not an Urban area
Monitor Information Pollutant, POC	
Parameter code	44201, 42401, 88101
Basic monitoring objectives(s)	NAQQS Compliance
Site type(s)	Population Exposure
Monitor type(s)	SLAMS
Instrument manufacturers and model	Teledyne-API 400, Teledyne-API T100EU & Met One Bam 1020
Method code	087, 600, 170
FRM/FEM/ARM/other	FEM
Collecting Agency	NWCAA
Analytical Lab	N/A
Reporting Agency	Ecology
Spatial scale	Neighborhood
Monitoring start date	10/11
Current sampling frequency	Continuous
Calculated sampling frequency	N/A
Sampling season	Ozone seasonal (May-September), Year-round SO_2 and $PM_{2.5}$
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)	9.5 residence time needed
Changes within the next 18 months?	None anticipated
Suitable for comparison against the NAAQS?	Yes. 0.042 Ozone/6.0 $PM_{2.5}$ FEM
Design Value	Annual/13.0 24hr FEM

*Insufficient data.

Purpose: The NWCAA uses this site to collect ozone, SO_2, and $PM_{2.5}$ information in its jurisdiction. This site is suitable for comparison to the NAAQS.

Cheeka Peak (ORCAA)

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 and Weller	4/14	WS, WD, Ta	Micro	Continuous	Continue
530630021	Spokane Augusta Ave	7/09	WS, WD, Ta	Neighborhood	Continuous	Continue
530530024	Tacoma South 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 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, East 1st

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 PM_{10} monitoring at Colville.

Enumclaw, Mud Mountain Dam

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
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 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
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 $PM_{2.5}$, PM_{10}, and seasonal ozone monitoring in the Kennewick/Tri Cities area.

North Bend, North Bend Way

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
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 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 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
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 Name	Seattle, 10th and Weller
AQS ID	530330030
GPS coordinates	047 59' 72"/122 31' 97"
Location	Adjacent to I-5
Address	10th and Weller, Seattle
County	King
Distance to road from gaseous probe (meters)	N/A
Traffic count (AADT, year)	N/A
Groundcover	Cement, grass
Statistical Area	Seattle-Bellevue-Everett
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 NO_2, CO, and $PM_{2.5}$ near-road monitoring at Seattle 10th and Weller.

Spokane, Augusta Avenue (SRCAA)

Site Name	Spokane, Augusta Avenue
AQS ID	530630021
GPS coordinates	047 39' 39"/ 17 21' 26"
Location	Rooftop of Spokane Regional Clean Air Agency
Address	3104 East Augusta Avenue, Spokane
County	Spokane
Distance to road from gaseous probe (meters)	N/A
Traffic count (AADT, year)	N/A
Groundcover	Membrane roof, asphalt
Statistical Area	Spokane
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 PM_{10} monitoring at Spokane Augusta.

Tacoma, South 36th

Site Name	Tacoma, South 36th
AQS ID	530530024
GPS coordinates	LAT/LONG Est.: 047 22’ 63”/122 46’ 25”
Location	Jenny Reed Elementary School
Address	1802 South 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
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 NO_2, and $PM_{2.5}$ monitoring at the Tacoma South 36th near-road site.

Tacoma, Tower Drive

Site Name	Tacoma, Tower Drive
AQS ID	530531016
GPS coordinates	47.30444"/122.4120
Location	At Tacoma Public Utility reservoir
Address	5225 Tower Drive, Tacoma
County	Pierce
Distance to road from gaseous probe (meters)	N/A
Traffic count (AADT, year)	N/A
Groundcover	Gravel
Statistical Area	Seattle-Bellevue, Everett
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 Name	Toppenish Ward Road
AQS ID	530770015
GPS coordinates	046 23' 07"/120 18' 49"
Location	Toppenish High School
Address	141 Ward Road, Toppenish
County	Yakima
Distance to road from gaseous probe (meters)	N/A
Traffic count (AADT, year)	N/A
Groundcover	Grass
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 Name	Vancouver, Blairmont
AQS ID	530110011
GPS coordinates	045 36' 37"/122 30' 59"
Location	Mountain View High School
Address	1500 SE Blairmount Drive, Vancouver
County	Clark
Distance to road from gaseous probe (meters)	N/A
Traffic count (AADT, year)	N/A
Groundcover	Grass, asphalt
Statistical Area	Portland, OR-Vancouver
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 Name	Wenatchee 5th
AQS ID	530070011
GPS coordinates	047 43' 06"/120 34' 19"
Location	Wenatchee Valley College
Address	1300 5th Street, Wenatchee
County	Chelan
Distance to road from gaseous probe (meters)	N/A
Traffic count (AADT, year)	N/A
Groundcover	Gravel, 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	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 Name	White Swan
AQS ID	530770016
GPS coordinates	046.37' 54"/120 72' 93"
Location	Mt. Adams School
Address	621 Signal Peak Road, White Swan
County	Yakima
Distance to road from gaseous probe (meters)	N/A
Traffic count (AADT, year)	N/A
Groundcover	Grass
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 USFS						
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 USFS 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 (USFS)

Site Name	Chelan, Woodin Avenue
AQS ID	530070007
GPS coordinates	LAT/LONG: 047 50' 18"/120 01' 23"
Location	USFS Offices
Address	428 West Woodin Avenue, Chelan
County	Chelan
Distance to road from gaseous probe (meters)	15
Traffic count (AADT, year)	N/A
Groundcover	
Statistical Area	MSA: Not in an urban area
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 USFS.

Leavenworth, Evans Street (USFS)

Site Name	Leavenworth, Evans Street
AQS ID	530070010
GPS coordinates	LAT/LONG: 047 35' 56"/120 39' 53"
Location	Cascade School District property
Address	330 Evans Street, Leavenworth
County	Chelan
Distance to road from gaseous probe (meters)	10
Traffic count (AADT, year)	N/A
Groundcover	Grass, asphalt
Statistical Area	MSA: Not in an urban area
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 USFS. This site is not suitable for comparison to the $PM_{2.5}$ NAAQS.

Twisp, Glover Street (USFS)

Site Name	Twisp, Glover Street
AQS ID	530470009
GPS coordinates	LAT/LONG: 48° 21' 51"/120 12' 40"
Location	In a building
Address	118 South Glover Street, Twisp
County	Okanogan
Distance to road from gaseous probe (meters)	2
Traffic count (AADT, year)	N/A
Groundcover	Concrete, asphalt
Statistical Area	MSA: 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	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 USFS. This site is not suitable for comparison to the $PM_{2.5}$ NAAQS.

Winthrop, West Chewuch Road (USFS)

Site Name	Winthrop, West Chewuch Road
AQS ID	530470010
GPS coordinates	LAT/LONG: 048 28' 38"/120 11' 26"
Location	Methow Valley Ranger Station
Address	24 West Chewuch Road, Winthrop
County	Okanogan
Distance to road from gaseous probe (meters)	15
Traffic count (AADT, year)	N/A
Groundcover	Grass
Statistical Area	MSA: 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	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 USFS. 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 Name	Neah Bay, Makah Nation
AQS ID	530090014
GPS coordinates	LAT/LONG: 048 22' 19"/124 35' 43"
Location	In a building
Address	159 Waada View, Neah Bay
County	Clallam
Distance to road from gaseous probe (meters)	10
Traffic count (AADT, year)	N/A
Groundcover	Cement
Statistical Area	MSA: 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 to determine burning curtailment calls in support of the Federal Rules for Reservations (FARR).

Omak (Colville Tribe)

Site Name	Omak, Colville Tribe
AQS ID	530470013
GPS coordinates	LAT/LONG: 048. 39' 99"/119 518' 96"
Location	Shelter
Address	8th Ave and Omak/Okanogan Rd East
County	Okanogan
Distance to road from gaseous probe (meters)	N/A
Traffic count (AADT, year)	N/A
Groundcover	Rock, dirt
Statistical Area	MSA: 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 to determine burning curtailment calls in support of the FARR.

Taholah, Chitwin Drive (Quinault Tribe)

Site Name	Taholah, Quinault Tribe
AQS ID	530270011
GPS coordinates	LAT/LONG: 047. 20’ 63”/124 172’ 22”
Location	Quinault Tribal Land
Address	600 Chitwin Drive
County	Grays Harbor
Distance to road from gaseous probe (meters)	3
Traffic count (AADT, year)	N/A
Groundcover	
Statistical Area	MSA: 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 to determine burning curtailment calls in support of the FARR.

Toppenish, Ward Road (Yakama Nation)

Site Name	Toppenish, Ward Road
AQS ID	530770015
GPS coordinates	LAT/LONG: 046 23' 07"/120 18' 49"
Location	Toppenish High School
Address	141 Ward Road, Toppenish
County	Yakima
Distance to road from gaseous probe (meters)	35
Traffic count (AADT, year)	N/A
Groundcover	Grass
Statistical Area	MSA: 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 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 Name	Wellpinit, Ford-Wellpinit Road
AQS ID	530650002
GPS coordinates	LAT/LONG: 047 53' 19"/117 59' 19"
Location	Rooftop
Address	5298 Ford-Wellpinit Road, Wellpinit
County	Stevens
Distance to road from gaseous probe (meters)	150
Traffic count (AADT, year)	N/A
Groundcover	Gravel, grass
Statistical Area	MSA: 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 to determine burning curtailment calls in support of the FARR.

White Swan (Yakama Nation)

Site Name	White Swan-Yakama
AQS ID	530770016
GPS coordinates	LAT/LONG: 046.37' 54"/120 72' 93"
Location	Mt. Adams School
Address	621 Signal Peak Rd, White Swan
County	Yakima
Distance to road from gaseous probe (meters)	3
Traffic count (AADT, year)	N/A
Groundcover	Grass
Statistical Area	MSA: 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 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 no longer requires 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 PM_{10} 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 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)	N/A
Traffic count (AADT, year)	N/A
Groundcover	Gravel, grass
Statistical Area	MSA: Seattle-Bellevue-Everett
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 and 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 evaluations that are more robust 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, SO_2, 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, SO_2 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
NOy 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, SO_2, NO_2, $PM_{2.5}$, 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
NOy 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
$PM_{10\text{-}2.5}$	**Not sampling**	**Not sampling**	**Not sampling**	Rural	None	TBD
$PM_{10\text{-}2.5}$ 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, SO_2, NO_y, 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 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
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 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	4/9	NCore	Urban	1/3	Continue
530330030	Seattle 10th and Weller	201	SLAMS	Neighborhood	1/6	Continue
530530029	Tacoma L St	200	SLAMS	Neighborhood	1/6	Continue
530770009	Yakima	200	SLAMS	Neighborhood	1/6	Continue

Additional monitors: None.

Recommendations/modifications: None.

Speciation parameter codes:

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
88117	Cerium	88165	Silicon	88355	OC CSN Rev Unadjusted	88403	Sulfate
88118	Cesium	88166	Silver	88357	EC CSN Rev Unadjusted	88502	$PM_{2.5}$ Speciation Mass

Seattle, Beacon Hill NCore

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
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: Seattle, 10th and Weller; Tacoma, South L Street; and Yakima, South 4th Avenue.

Seattle, 10th and Weller

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)	6
Traffic count (AADT, year)	146,000 I-5 (2012 WSDOT)
Groundcover	Concrete, Grass
Statistical Area	Seattle-Bellevue-Everett
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 and 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 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
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, South 4th (YRCAA)

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
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 NCore and Near Road	3,733,580	2	2
Cheeka Peak (not in an MSA) NCore		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.

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 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 PM10 stations in MSA
Seattle-Tacoma-Bellevue,	3,733,580	2-4	1
Spokane	547,824	1-2	1
Kennewick	279,116	1-2	1
Yakima	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.

Table D-4 of Appendix D to Part 58 – PM_{10} Minimum Monitoring Requirements			
MSA population1, 2	High concentration2	Medium concentration3	Low concentration4 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 NITROGEN DIOXIDE (NO_2)				
SITE NAME_____ All_____ SITE ADDRESS_____				
AQS ID_____ EVALUATION DATE_____ EVALUATOR_____				
APPLICABLE SECTION	REQUIREMENT	CRITERIA MET?		
		YES	NO	N/A
4.3.2(a)	Near-road NO_2 Monitors: One microscale near-road NO_2 monitoring station in each CBSA with a population of 500,000 or more persons.	Y		
4.3.2(a)	Near-road NO_2 Monitors: An additional near-road NO_2monitoring station is required for any CBSA with a population of 2,500,000 persons, or in any CBSA with a population of 500,000 or more persons that has one or more roadway segments with 250,000 or greater AADT count.	Y		
4.3.2(b)	Near-road NO_2 Monitors: Measurements at required near-road NO_2 monitor sites utilizing chemiluminescence FRMs must include at a minimum: NO, NO_2, and NO_X	Y		
4.3.3(a)	Area-wide NO_2 Monitoring: One monitoring station in each CBSA with a population of 1,000,000 or more persons to monitor a location of expected highest NO_2 concentrations representing the neighborhood or larger spatial scales.	Y		

Table 1

CBSA Description[1]	CBSA population[2, 3]	Required number of Near-road NO_2 sites	Present number of Near-road NO_2 sites	Required number of Area-wide NO_2 sites	Present number of Area-wide NO_2 sites
Seattle-Tacoma-Bellevue (see comments)	3,733,580	2	2	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.

PART 58 APPENDIX D SITE EVALUATION FORM FOR $PM_{2.5}$

STATE___WA_____ AGENCY___ECOLOGY_____ AQS AGENCY CODE_____ECOLOGY_____

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 10th and 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	3,733,580	30.0 FEM	3	5	5	1
Spokane	547,824	Insufficient data	1	1	1	0
Kennewick	279,116	Insufficient data	0	0	0	0
Olympia-Tumwater	269,536	25.0 Neph	0	0	0	0
Bremerton-Silverdale	260,131	12	0	0	1	0
Yakima	248,830	31.0 FEM	0	1		0
Mt. Vernon-Anacortes	121,846	11.0 Neph	0	0	0	0

[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.

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

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

[2] Population based on latest available census figures. https://www.census.gov/

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

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

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

PART 58 APPENDIX D SITE EVALUATION FORM FOR OZONE

STATE___WA_____ AGENCY_____ECOLOGY_____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 Region 10 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:

Table D-2 of Appendix D to Part 58 – SLAMS O_3 Monitoring Minimum Requirements

MSA population[1, 2]	Most recent 3-year design value concentrations ≥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

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

[2] Population based on latest available census figures.

[3] The ozone (O_3) National Ambient Air Quality Standards (NAAQS) levels and forms are defined in 40 CFR part 50.

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

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

Table D-2 of Appendix D to Part 58 - SLAMS O3 Monitoring Minimum Requirements

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	3,733,580	3	6
Spokane	547,824	2	2
[a] See 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___WA_____ AGENCY_____ECOLOGY_____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 Tables 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 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

Table 2. Minimum SO_2 Monitoring Requirements (Section 4.4.2 of App D to Part 58)

PWEI (Population weighted Emission Index) Value	Required number of SO_2 monitors
>= 1,000,000	3
>= 100,000 but < 1,000,000	2
>= 5,000 but < 100,000	1

Appendix B. EPA Appendix E Forms

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, etc., 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 impact inappropriately 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.				
9. PROBE MATERIAL AND 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, *etc.*, 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, NOx, NO_2, and NOy

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, *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

[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.

[2]Applicable 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, *etc.*, 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____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, *etc.*, 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.					

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

[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.

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

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 Street 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 Street to be a suitable location for a replacement site. The SE 12th Street site captured both the seasonal and diurnal variation observed at Bellevue Way, although its concentrations were an average of 8.5 percent lower than those at Bellevue Way.

Concentrations across Bellevue are consistently low overall. Between December 1, 2016 through April 10, 2017, the maximum 24-hour concentration observed on either monitor was 11.8 $\mu g/m^3$ at Bellevue Way on January 15, 2017. That same day, SE 12th Street recorded a concentration of 10.6 $\mu g/m^3$. Although concentrations at SE 12th Street 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 data sets are well-correlated, with a Pearson correlation coefficient of 0.91. The time series plot in Figure 9 shows that SE 12th Street 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 Street 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 Street concentrations were largely consistent with and comparable to those at Bellevue Way; and (c) SE 12th Street better captures residential neighborhood conditions, Ecology has determined that the SE 12th Street site can adequately represent neighborhood-scale concentrations in the Bellevue area.

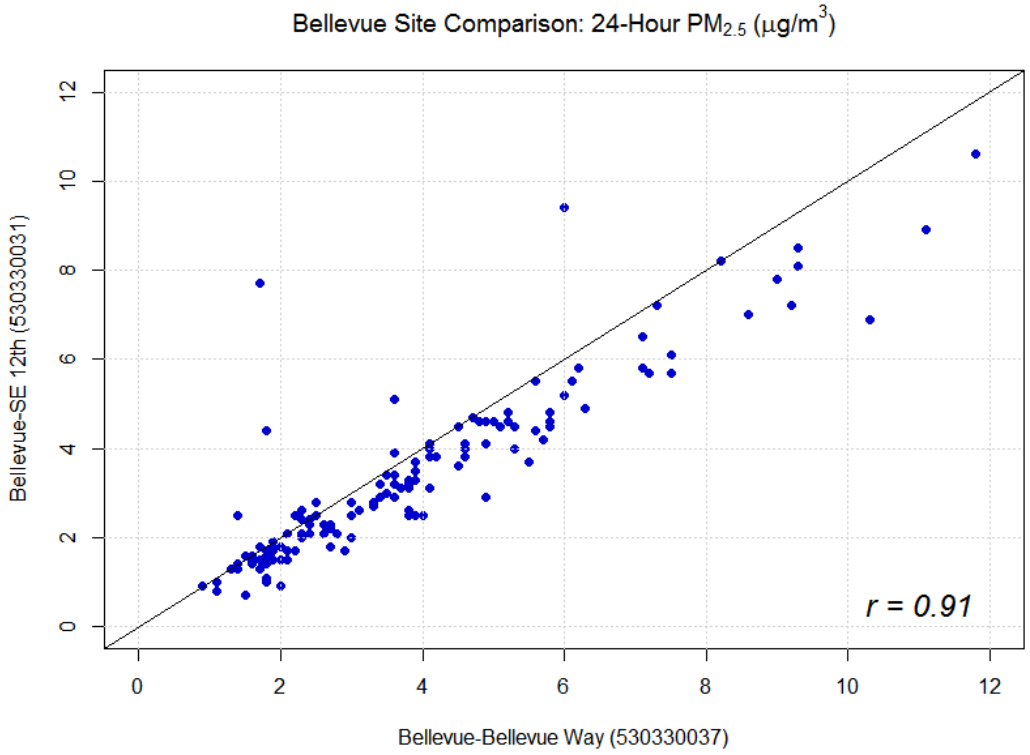

Figure 8. Scatterplot of 24-hour concentrations from both Bellevue sites

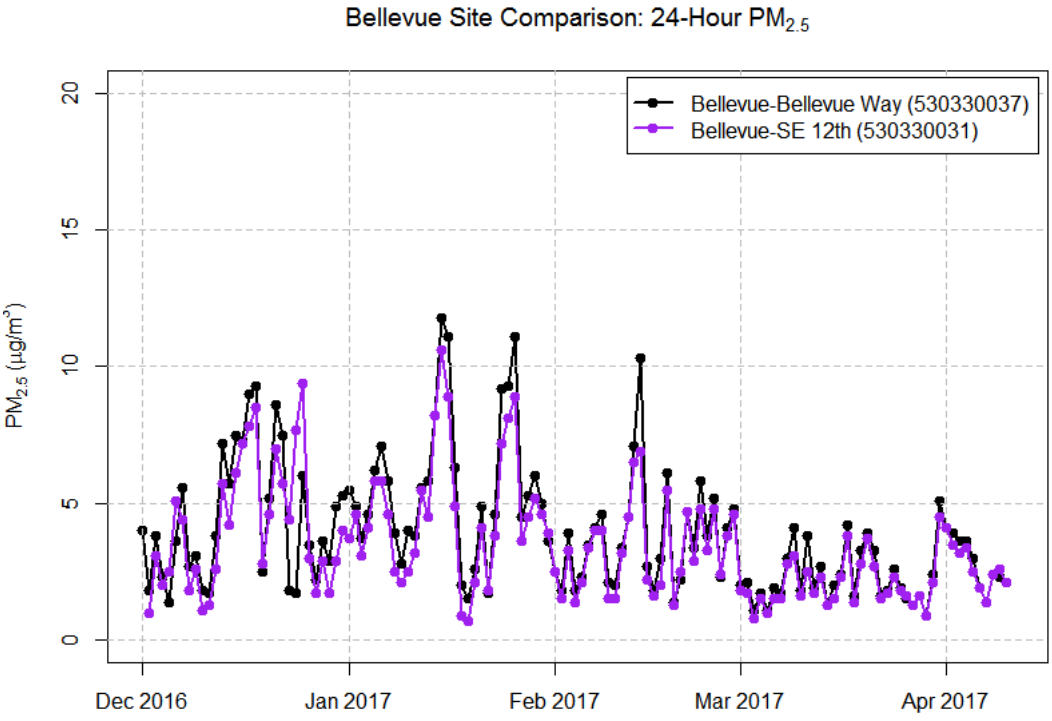

Figure 9. Time-series plot of 24-hour concentrations at both Bellevue sites.

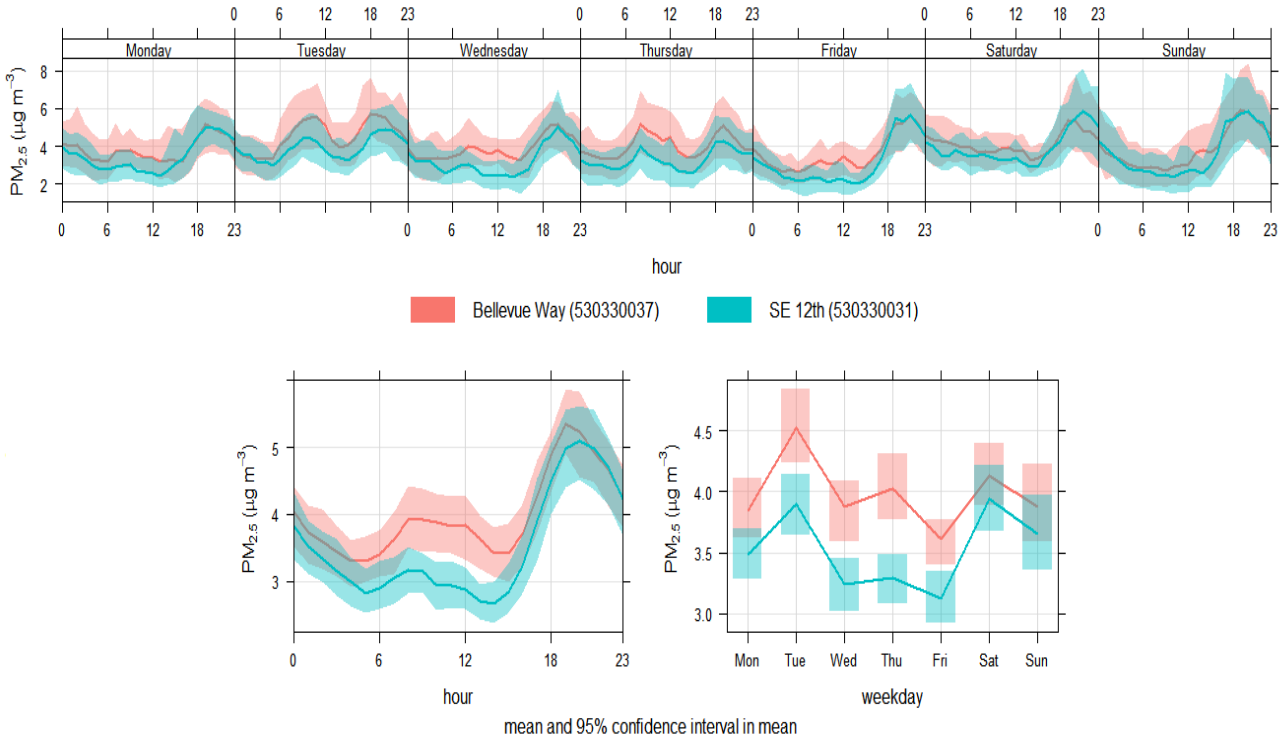

Figure 10. Plot of 1-hour concentrations across various time intervals at both Bellevue sites.

Public Comment and Response to Comment

This document was posted on Ecology's Air Quality web page from May 22, 2017 to June 26, 2017. It was also posted on Ecology's public involvement calendar. We received no comments.

References

1. 40 CFR Part 58, Appendices A, B, C, D, and E

2. 40 CFR Part 50

3. 40 CFR Part 53

4. 40 CFR Part 58

5. 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. 62 Federal Register (138) 38763-38853. July 18, 1997.

6. EPA Revisions to Ambient Air Monitoring Regulations – Final Rule. 40 CFR Parts 53 and 58. 7 Federal Register 61236. October 17, 2006.

7. 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 PM_{10}, 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.