DEPARTMENT OF
ECOLOGY
State of Washington

2015 Ambient Air Monitoring Network Report

May 2015
Publication no. 15-02-001

Publication and Contact Information

This report is available on Ecology's website at

https://fortress.wa.gov/ecy/publications/SummaryPages/1502001.html

For more information, contact:

Air Quality Program
P.O. Box 47600
Olympia, WA 98504-7600
(360) 407-6800

Washington State Department of Ecology - www.ecy.wa.gov

- Headquarters, Olympia (360) 407-6000
- Northwest Regional Office, Bellevue (425) 649-7000
- Southwest Regional Office, Olympia (360) 407-6300
- Central Regional Office, Yakima (509) 575-2490
- Eastern Regional Office, Spokane (509) 329-3400

To request ADA accommodation, call (360) 407-6800, 711 (relay service), or 877-833-6341 (TTY).

2015 Ambient Air Monitoring Network Report

Prepared by

Michael Ragan
Statewide Ambient Air Monitoring Coordinator

Air Quality Program
Washington State Department of Ecology
Olympia, Washington

This page is purposely left blank

Table of Contents

Page

List of Tables

List of Figures

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	United States 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
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

Acronyms Continued

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 2014 review. These results include:

- Identify modifications to Ecology's ambient air monitoring network since the 2014 annual network report;
- Identify proposed modifications to the network for the upcoming year;
- Document Ecology's ambient air quality monitoring needs, goals, and priorities.

Carbon Monoxide, (CO, 42101)

Recommendations/Modifications: Ecology and its monitoring partners have divested of traditional CO monitoring at all sites except Spokane 3rd and Washington.

Additional Monitors: None.

Ozone (O_3, 44201)

Recommendations/Modifications: Modeling indicated an ozone hot spot in Kennewick. A subsequent study during ozone season during 2014 confirmed higher values. Ecology will be installing ozone equipment at Kennewick (BCAA Offices) for ozone season in 2015.

Additional Monitors: None.

Nitrogen Dioxide (NO_2, 42600, 42601, 42612)

Recommendations/Modifications: Ecology monitors for the reactive nitrogen species (NOy) at NCore Seattle Beacon Hill which includes NO_2. Olympic Region Clean Air Agency (ORCAA) monitors for the reactive NOy at Rural NCore Cheeka Peak. It is assumed most, if not all, the NOy measured at Beacon Hill and Cheeka Peak is composed of NO_2.

Additional Monitors: A second near-road NO_2 monitor is being installed in Tacoma. Operation is anticipated January 1, 2016.

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 $PM_{2.5}$)

The Lacey-College Street $PM_{2.5}$ nephelometer site (530670013) is being used to assure continued compliance with the PM_{10} NAAQS as well as to confirm the Thurston County Maintenance Area (TCMA) continues to meet the qualification criteria of EPA's Limited Maintenance Plan (LMP) approach.

A 5-year NPM_{10} design value below 98µg/m^3 demonstrates the TCMA continues to qualify for the LMP approach. The Lacey-College Street nephelometer site's (53670013) 5-year PM_{10} design value estimate for 2010–2014 was 43 µg/m^3. The PM_{10} design value estimate for 2012–2014 was 45 µg/m^3. The current design value estimates demonstrate the TCMA complies with the PM_{10} standard and continues to meet EPA's LMP qualification criteria.

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 look up method and the statistical fit method outlined in the LMP guidance document.

A 3-year PM_{10} design value of 150 µg/m^3 or below demonstrates continued compliance with the PM_{10} NAAQS. A 5-year design value below 98 µg/m^3 is required to qualify for the LMP approach. Design values calculated using the table look up 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 2014 5-year design value is 49±6 µg/m^3 and the 3-year design value is 52±6 µg/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 2014 5-year design value is 58±6 µg/m^3 and the 3-year design value is 61±6 µg/m^3. Note: In 2014 Duwamish did not have a complete year of data due to site relocation. 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 2014 5-year design value is 60±13 µg/m^3 and the 3-year design value is 65±13 µg/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, Washington. The LMP Guidance directs the design value be based on the most recent five years' of data. The most recent five years' of data is from 2010–2014 using a combination of FRM and FEM data from the Augusta site.

A 5-year PM_{10} design value below 98 µg/m^3 demonstrates the Spokane County Maintenance Area continues to qualify for the LMP approach. The 5-year PM_{10} design value estimate for 2010–2014 was 80 µg/m^3. For the 3-year compliance with the PM_{10} NAAQS, the form of the standard is the number of 24-hour exceedances of 150 µg/m^3, averaged over three years. The 2014 PM_{10} design value for Augusta Avenue (530630021) is 0.4. This design value is in attainment with the standard, which is not to exceed one. The Spokane County Maintenance Area complies with the PM_{10} NAAQS and continues to meet EPA's LMP qualification criteria.

Particulate Matter 2.5 ($PM_{2.5}$, 88101, 88502)

Additional Monitors: None.

Recommendations/Modifications: Port Angeles relocation was approved in 2014 and taking place in 2015. ORCAA is planning relocation of the Aberdeen site in 2015 for safety reasons.

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)

Additional Monitors: The addition of meteorological monitoring is planned for Yakima during 2015.

Recommendations/Modifications: None.

Lead (Pb 14129)

Additional Monitors: None.

Recommendations/Modifications: None.

Trace Gas Monitoring

Additional Monitors: None.

Recommendations/Modifications: None.

NCore

Additional Monitors: None.

Recommendations/Modifications: None.

Other – Contracted Sites Tribal/EPA

Additional Monitors: None.

Recommendations/Modifications: *Monitoring was suspended at Taholah fall 2011.
EPA continues to work with the Quinault Nation to determine the future of monitoring there.
Ecology continues to work with the Quinault Tribe to site and install a monitor at Taholah.
Ecology is in discussions with EPA regarding tribal sites with low monitored values and can be represented by other nearby monitors.

Other – Contracted Sites USFS

Additional Monitors: None.

Recommendations/Modifications: None.

Other – Contracted Local Clean Air Agencies

Additional Monitors: None.

Recommendations/Modifications: None.

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

Background information

EPA ambient air quality surveillance regulations (Code of Federal Regulations, Title 40, Part 58 (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

The Code of Federal Regulations, Title 40, Part 58 (40 CFR Part 58) contains the federal 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:

- Determining compliance with the NAAQS.
- Determining the location of maximum pollutant concentrations.
- Determining the effectiveness of air pollution control programs.
- Evaluating the effects of air pollution on public health.
- Tracking the progress of SIPS.
- Supporting dispersion models.
- Developing responsible, cost-effective, control strategies.
- Developing air quality trends.
- Analyze pollution episodes.
- Assist with permitting work.

EPA Region 10 Approved Network Changes in 2014

Seattle Duwamish: Site relocation

Port Angeles: Site relocation

Puyallup 66th: Site termination

Seattle Olive Street: PM2.5 relocation to Seattle 10th and Weller/site termination

Vancouver Plaza: Site relocation

Relocation/termination details can be found in the 2014 Washington Annual Network Plan

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 (SLAMS)

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 State. Nephelometers are used for a variety of purposes, including the WAQA program, ambient air quality assessment, and special studies. Typically, nephelometer monitoring sites utilize Federal Reference Method (FRM) or Federal Equivalent Method (FEM) equipment for correlations and are operated in accordance with CFR requirements for quality assurance and quality control. Ecology also 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 sites if it is determined there is no concern for NAAQS violations in the area, typically after three years of data collection. SPMS sites may be added to Ecology's SLAMS network when a NAAQS exceedance has been recorded, or if elevated pollutant concentrations are consistently measured.

Table 3. Summary of Probe and Monitoring Path Siting Criteria

Pollutant	Scale (maximum monitoring path length (meters))	Height from Ground to Probe or 80% of Monitoring Path (meters)	Horizontal & Vertical Distance from Supporting Structures to Probe or 90% of Monitoring Path (meters)	Distance from Trees to Probe or 90% of Monitoring Path (meters)
SO_2	Middle [300m] Neighborhood Urban & Regional [1km]	3–15	>1	>10
CO	Micro, Middle [300m] Neighborhood [1km]	3±0.5; 3–15	>1	>10
O_3	Middle [300m] Neighborhood Urban & Regional [1km]	3–15	>1	>10
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 Procedure

Network Review Team and Preparation

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

Network Modifications

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

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

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

Determining Compliance with Appendix D and Special Monitoring Requirements

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

Number and Location of Monitors

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

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

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

Determining Compliance with Appendix E Requirements

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

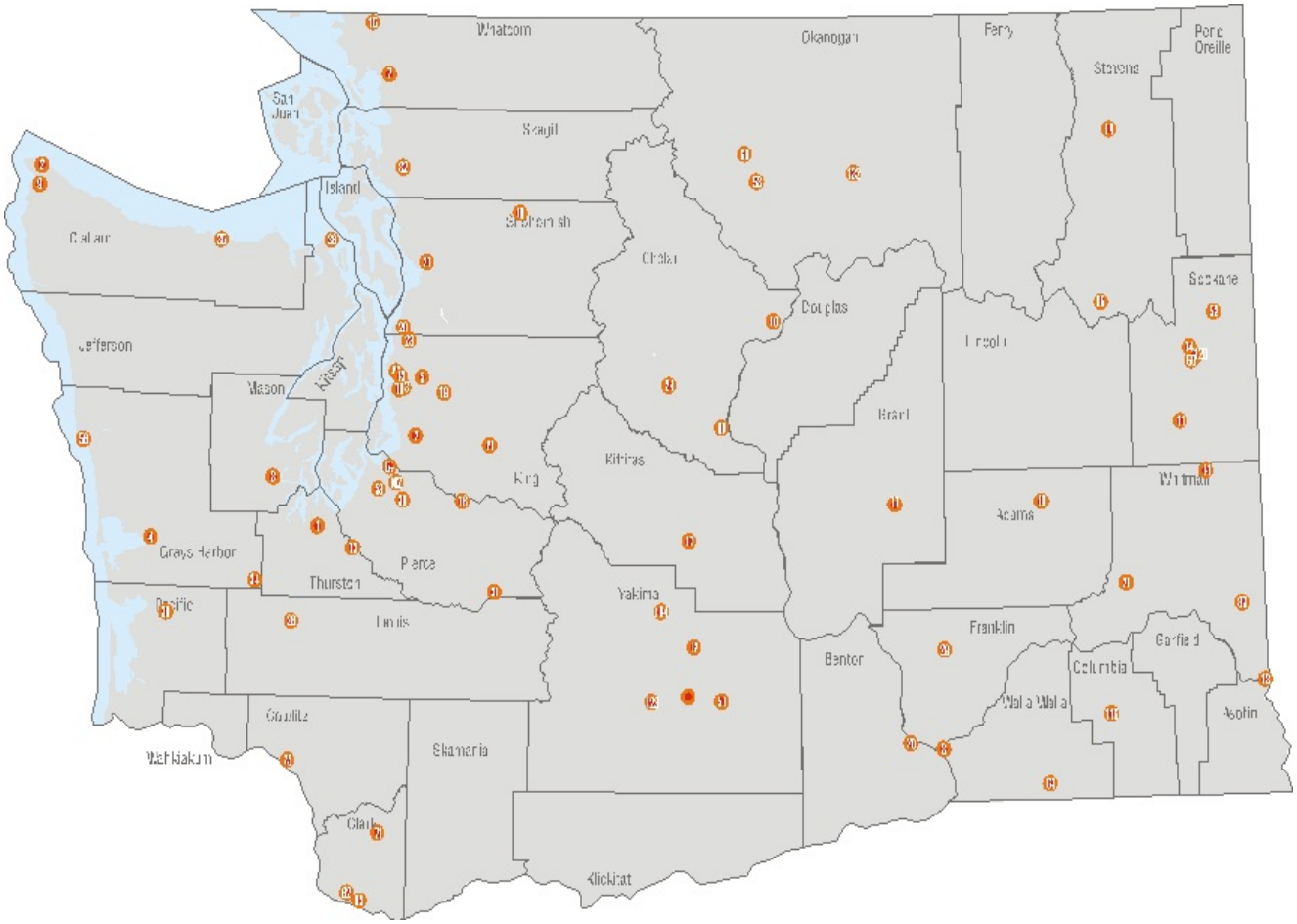

Figure 1. Map of Washington State monitoring (all sites)

Table 4. Carbon Monoxide, Parameter Code 42101						
AQS#	**Site Name**	**Est.**	**Type**	**Scale**	**Sampling Frequency**	**Action for 2015**
530630049	Spokane, 3rd & Washington	1/97	SLAMS	Micro	Continuous	Continue*
530330080	Seattle Beacon Hill	3/07	NCore	Urban	Continuous	Continue
530330030	Seattle 10th & Weller	4/14	Near-road	Urban	Continuous	Continue
530090013	Cheeka Peak	5/06	Rural NCore	Regional	Continuous	Continue

Additional Monitors: None.

***Recommendations/Modifications:** None. Ecology and its partners have divested of traditional CO monitoring with one exception, Spokane 3rd and Washington.

Figure 2. Map of Washington State CO sites

Spokane, 3rd and Washington

Site Name	Spokane, 3rd and Washington – SLAMS
AQS ID	530630049
GPS coordinates	LAT/LONG: 047 39' 13"/117 25' 07"
Location	At 3rd and Washington, Downtown Spokane
Address	3rd and Washington
County	Spokane
Distance to road from gaseous probe (meters)	1
Traffic count (AADT, year)	94,000 I-90 (2012 WSDOT)
Groundcover	Asphalt
Statistical Area	Spokane
Monitor Information Pollutant, POC	
Parameter code	42101
Basic monitoring objectives(s)	NAAQS comparison
Site type(s)	Highest Concentration
Monitor type(s)	SLAMS
Instrument manufacturer and model	Thermo 48 C
Method code	054
FRM/FEM/ARM/other	FEM
Collecting Agency	Ecology
Analytical Lab	N/A
Reporting Agency	Ecology
Spatial scale	Micro
Monitoring start date	1/97
Current sampling frequency	Continuous
Calculated sampling frequency	N/A
Sampling season	Continuous, 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)	63.50
Changes within the next 18 months?	None anticipated
Is it suitable for comparison against the annual CO NAAQS?	Yes

Purpose: 3rd and Washington is a micro scale SLAMS site established in 1997. It is located in the downtown core of Spokane in a highly-traveled commercial area. The site is currently used for CO maintenance plan compliance. Spokane is a former CO nonattainment area.

Exceedances: This site has not exceeded the daily or annual standard for CO in over 15 years.

Seattle, Beacon Hill

Site Name	Seattle Beacon Hill
AQS ID	530330080
GPS coordinates	LAT/LONG: 047 34' 58"/122 18' 30"
Location	At Jefferson Park/reservoir
Address	4103 Beacon Avenue S., Seattle
County	King
Distance to road from gaseous probe (meters)	120
Traffic count (AADT, year)	12,700 (2012 WSDOT)
Groundcover	Grass, gravel
Statistical Area	Seattle-Bellevue-Everett, WA
Monitor Information Pollutant, POC	
Parameter code	42101 (POC 2)
Basic monitoring objectives(s)	NAQQS Comparison
Site type(s)	Background
Monitor type(s)	NCore
Instrument manufacturer and model	ne-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
Is it 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 ozone, Beacon Hill 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.

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 Interstate 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, WA
Monitor Information Pollutant, POC	
Parameter code	42101 (POC 2)
Basic monitoring objectives(s)	NAQQS Comparison
Site type(s)	Population Exposure
Monitor type(s)	SLAMS
Instrument manufacturer and model	Teledyne-API T300EU
Method code	593
FRM/FEM/ARM/other	FEM
Collecting Agency	Ecology
Analytical Lab	N/A
Reporting Agency	Ecology
Spatial scale	Micro
Monitoring start date	4/14
Current sampling frequency	Continuous
Calculated sampling frequency	N/A
Sampling season	Continuous, year-round
Probe height (meters)	3
Distance from supporting structure (meters)	3
Distance from obstructions on roof (meters)	N/A
Distance from obstructions not on roof (meters)	N/A
Distance from trees (meters)	N/A
Distance to furnace or incinerator flue (meters)	N/A
Distance between collocated monitors (meters)	N/A
Unrestricted airflow (degrees)	360
Spacing from minor sources	No minor sources
Probe material for reactive gases	Teflon
Residence time for reactive gases (seconds)	1.6
Changes within the next 18 months?	None anticipated
Is it 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	At Cheeka Peak
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
Is it suitable for comparison against the annual CO NAAQS?	Yes

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

Table 5. Ozone, Parameter Code 44201						
AQS#	**Site Name**	**Est.**	**Type**	**Scale**	**Sampling Frequency**	**Action for 2015**
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
TBD	Kennewick	**6/15**	SPMS	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: Modeling indicated an ozone hot spot in Kennewick. A subsequent study during ozone season in 2014 confirmed higher values. Ecology and BCAA will be establishing an ozone site at Kennewick (BCAA Offices) for ozone season starting in June 2015.

Recommendations/Proposed Modifications: None.

Note: Ecology provides technical support for ozone monitoring performed by local clean air agencies in Mount Vernon (NWCAA) and Spokane (SRCAA). See Other Agencies.

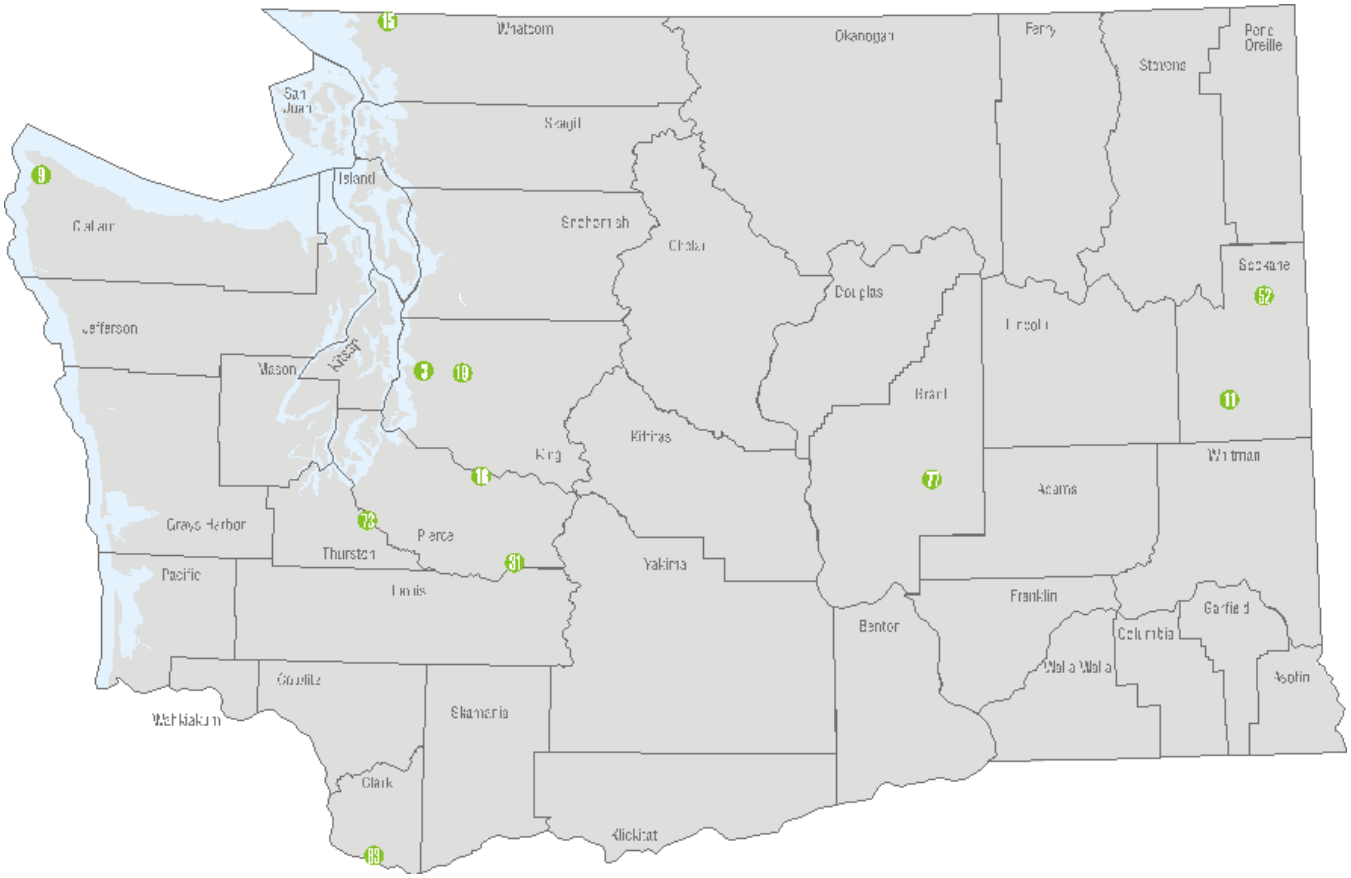

Figure 3. Map of Washington State ozone sites

Cheeka Peak (ORCAA)

Site Name	Cheeka Peak
AQS ID	530090013
GPS coordinates	LAT/LONG: 048 17’ 12”/124 37' 13”
Location	At Cheeka Peak
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
Is it 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 State. 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 Wildlife Refuge

Site Name	Cheney Turnbull
AQS ID	530630001
GPS coordinates	LAT/LONG: 047 24' 55"/117 31' 49"
Location	At the Cheney National Wildlife Refuge
Address	South 26010 Smith Road, Cheney
County	Spokane
Distance to road from gaseous probe (meters)	200
Traffic count (AADT, year)	5,200 (195 2012 WSDOT)
Groundcover	Grass
Statistical Area	Spokane, WA
Monitor Information Pollutant, POC	
Parameter code	44201
Basic monitoring objectives(s)	NAQQS Comparison
Site type(s)	Population Exposure
Monitor type(s)	SLAMS
Instrument manufacturer and model	Teledyne-API 400
Method code	087
FRM/FEM/ARM/other	FEM
Collecting Agency	Ecology
Analytical Lab	N/A
Reporting Agency	Ecology
Spatial scale	Urban
Monitoring start date	5/99
Current sampling frequency	Continuous
Calculated sampling frequency	N/A
Sampling season	Seasonal (May-September)
Probe height (meters)	3
Distance from supporting structure (meters)	1
Distance from obstructions on roof (meters)	N/A
Distance from obstructions not on roof (meters)	70
Distance from trees (meters)	100+
Distance to furnace or incinerator flue (meters)	N/A
Distance between collocated monitors (meters)	N/A
Unrestricted airflow (degrees)	360
Spacing from minor sources	No minor sources
Probe material for reactive gases	Teflon
Residence time for reactive gases (seconds)	3.8
Changes within the next 18 months?	None anticipated
Is it suitable for comparison against the ozone NAAQS?	Yes
Design value	0.061

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	A shelter
Address	1330 Loomis Trail Road, Custer
County	Whatcom
Distance to road from gaseous probe (meters)	67
Traffic count (AADT, year)	21,000 (I-5 2012 WSDOT)
Groundcover	Grass
Statistical Area	Bellingham, WA
Monitor Information Pollutant, POC	
Parameter code	44201
Basic monitoring objectives(s)	NAQQS Comparison
Site type(s)	Population Exposure
Monitor type(s)	SLAMS
Instrument manufacturer and model	Teledyne-API 400
Method code	087
FRM/FEM/ARM/other	FEM
Collecting Agency	Northwest Clean Air Agency
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
Is it suitable for comparison against the ozone NAAQS?	Yes
Design value	0.045

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	At Mud Mountain Dam (Army Corp of Engineers)
Address	30525 SE Mud Mountain Road, Enumclaw
County	King
Distance to road from gaseous probe (meters)	N/A
Traffic count (AADT, year)	14,000 (410 2012 WSDOT)
Groundcover	Gravel and weeds
Statistical Area	Seattle-Bellevue-Everett, WA
Monitor Information Pollutant, POC	
Parameter code	44201
Basic monitoring objectives(s)	NAQQS Comparison
Site type(s)	Population Exposure
Monitor type(s)	SLAMS
Instrument manufacturer and model	Teledyne-API 400
Method code	087
FRM/FEM/ARM/other	FEM
Collecting Agency	Ecology
Analytical Lab	N/A
Reporting Agency	Ecology
Spatial scale	Urban
Monitoring start date	7/98
Current sampling frequency	Continuous
Calculated sampling frequency	N/A
Sampling season	Seasonal (May-September)
Probe height (meters)	4.3
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
Is it suitable for comparison against the ozone NAAQS?	Yes
Design value	0.065

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 8-hour standard in the past three years (2012).

Issaquah, Lake Sammamish State Park

Site Name	Issaquah, Lake Sammamish
AQS ID	530330010
GPS coordinates	LAT/LONG: 047 33' 07"/122 02' 40"
Location	At Lake Sammamish State Park
Address	20050 SE 56th (Lake Sammamish State Park), Issaquah
County	King
Distance to road from gaseous probe (meters)	440
Traffic count (AADT, year)	121,000 (I-90 2012 WSDOT)
Groundcover	Gravel, grass
Statistical Area	Seattle-Bellevue-Everett, WA
Monitor Information Pollutant, POC	
Parameter code	44201
Basic monitoring objectives(s)	NAQQS Comparison
Site type(s)	Population Exposure
Monitor type(s)	SLAMS
Instrument manufacturer and model	Teledyne-API 400
Method code	087
FRM/FEM/ARM/other	FEM
Collecting Agency	Ecology
Analytical Lab	N/A
Reporting Agency	Ecology
Spatial scale	Urban
Monitoring start date	12/75
Current sampling frequency	Continuous
Calculated sampling frequency	N/A
Sampling season	Seasonal (May-September)
Probe height (meters)	3.5
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
Is it suitable for comparison against the ozone NAAQS?	Yes
Design value	0.053

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, (BCAA)

Site Name	Kennewick South Clodfelter Road
AQS ID	**TBD**
GPS coordinates	LAT/LONG: 046 20' 45"/119 23' 45"
Location	At BCAA Offices
Address	526 South Clodfelter Road, Kennewick
County	Benton
Distance to road from gaseous probe (meters)	40
Traffic count (AADT, year)	N/A
Groundcover	Ground-grass and asphalt
Statistical Area	Richland-Kennewick-Pasco, WA

Kennewick, S. Clodfelter Road Monitor Information Pollutant, POC	
Parameter code	44201
Basic monitoring objectives(s)	NAQQS Compliance
Site type(s)	Population Exposure
Monitor type(s)	SPMS
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)	
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)	N/A
Changes within the next 18 months?	None anticipated
Is it suitable for comparison against the ozone NAAQS?	Yes
Design value	N/A

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

Exceedances: N/A. New site.

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	At Jackson Visitor Center
County	King
Distance to road from gaseous probe (meters)	12
Traffic count (AADT, year)	506 (706, 2012 WSDOT)
Groundcover	Asphalt, rock, snow
Statistical Area	Seattle-Bellevue-Everett, WA
Monitor Information Pollutant, POC	
Parameter code	44201
Basic monitoring objectives(s)	NAQQS Comparison
Site type(s)	General Background
Monitor type(s)	SLAMS
Instrument manufacturer and model	Teledyne-API 400
Method code	087
FRM/FEM/ARM/other	FEM
Collecting Agency	Ecology
Analytical Lab	N/A
Reporting Agency	Ecology
Spatial scale	Regional
Monitoring start date	7/98
Current sampling frequency	Continuous
Calculated sampling frequency	N/A
Sampling season	Seasonal (May-September)
Probe height (meters)	6
Distance from supporting structure (meters)	1
Distance from obstructions on roof (meters)	N/A
Distance from obstructions not on roof (meters)	1 Supporting structure
Distance from trees (meters)	35
Distance to furnace or incinerator flue (meters)	N/A
Distance between collocated monitors (meters)	N/A
Unrestricted airflow (degrees)	180
Spacing from minor sources	No minor sources
Probe material for reactive gases	Teflon
Residence time for reactive gases (seconds)	4
Changes within the next 18 months?	None anticipated
Is it suitable for comparison against the ozone NAAQS?	Yes
Design value	0.060

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

Seattle, Beacon Hill

Site Name	Seattle Beacon Hill
AQS ID	530330080
GPS coordinates	LAT/LONG: 047 34' 58"/122 18' 30"
Location	At Jefferson Park/reservoir
Address	4103 Beacon Avenue S., Seattle
County	King
Distance to road from gaseous probe (meters)	120
Traffic count (AADT, year)	12,700 (2012 SDOT)
Groundcover	Grass, gravel
Statistical Area	Seattle-Bellevue-Everett, WA
Monitor Information Pollutant, POC	
Parameter code	44201
Basic monitoring objectives(s)	NAQQS Comparison
Site type(s)	General Background/Population Exposure
Monitor type(s)	SLAMS
Instrument manufacturer and model	Teledyne-API 400E
Method code	087
FRM/FEM/ARM/other	FEM
Collecting Agency	Ecology
Analytical Lab	N/A
Reporting Agency	Ecology
Spatial scale	Urban
Monitoring start date	4/97
Current sampling frequency	Continuous
Calculated sampling frequency	N/A
Sampling season	Year-round
Probe height (meters)	4.65
Distance from supporting structure (meters)	1
Distance from obstructions on roof (meters)	N/A
Distance from obstructions not on roof (meters)	20
Distance from trees (meters)	20
Distance to furnace or incinerator flue (meters)	N/A
Distance between collocated monitors (meters)	N/A
Unrestricted airflow (degrees)	360
Probe material for reactive gases	Pyrex
Spacing from minor sources	No minor sources
Residence time for reactive gases (seconds)	15
Changes within the next 18 months?	None anticipated
Is it suitable for comparison against the ozone NAAQS?	Yes
Design value	0.044

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	At the fire station in Chatteroy, WA
Address	E. 9814 Greenbluff Road, Chattaroy
County	Spokane
Distance to road from gaseous probe (meters)	50
Traffic count (AADT, year)	20,000 (2, 2012 WSDOT)
Groundcover	Grass, gravel
Statistical Area	Spokane, WA
Monitor Information Pollutant, POC	
Parameter code	44201
Basic monitoring objectives(s)	NAQQS Comparison
Site type(s)	Population Exposure
Monitor type(s)	SLAMS
Instrument manufacturer and model	Teledyne-API 400
Method code	087
FRM/FEM/ARM/other	FEM
Collecting Agency	Ecology
Analytical Lab	N/A
Reporting Agency	Ecology
Spatial scale	Urban
Monitoring start date	4/90
Current sampling frequency	Continuous
Calculated sampling frequency	N/A
Sampling season	Seasonal, (May – September)
Probe height (meters)	3
Distance from supporting structure (meters)	1
Distance from obstructions on roof (meters)	N/A
Distance from obstructions not on roof (meters)	N/A
Distance from trees (meters)	N/A
Distance to furnace or incinerator flue (meters)	N/A
Distance between collocated monitors (meters)	N/A
Unrestricted airflow (degrees)	360
Spacing from minor sources	No minor sources
Probe material for reactive gases	Teflon
Residence time for reactive gases (seconds)	5. 7
Changes within the next 18 months?	None anticipated
Is it suitable for comparison against the ozone NAAQS?	Yes
Design value	0.061

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 not exceeded the 8-hour ozone standard in the past three years.

Vancouver, Blairmont HS

Site Name	Vancouver, Blairmont
AQS ID	530110011
GPS coordinates	LAT/LONG: 045 36' 37"/122 30' 59"
Location	At Blairmont High School in Vancouver
Address	1500 SE Blairmont Drive, Vancouver
County	Clark
Distance to road from gaseous probe (meters)	200
Traffic count (AADT, year)	72,000 (014, 2012 WSDOT)
Groundcover	Grass, asphalt
Statistical Area	Portland, OR – Vancouver, WA

Monitor Information Pollutant, POC	
Parameter code	44201
Basic monitoring objectives(s)	NAQQS Comparison
Site type(s)	Population Exposure
Monitor type(s)	SLAMS
Instrument manufacturer and model	Teledyne-API 400
Method code	087
FRM/FEM/ARM/other	FEM
Collecting Agency	Ecology
Analytical Lab	N/A
Reporting Agency	Ecology
Spatial scale	Urban
Monitoring start date	5/88
Current sampling frequency	Continuous
Calculated sampling frequency	N/A
Sampling season	Seasonal, (May – September)
Probe height (meters)	10
Distance from supporting structure (meters)	0.5
Distance from obstructions on roof (meters)	N/A
Distance from obstructions not on roof (meters)	N/A
Distance from trees (meters)	5 to small (5m fruit trees), 12 to tall (12 m conifers)
Distance to furnace or incinerator flue (meters)	N/A
Distance between collocated monitors (meters)	N/A
Unrestricted airflow (degrees)	360
Spacing from minor sources	No minor sources
Probe material for reactive gases	Teflon
Residence time for reactive gases (seconds)	15
Changes within the next 18 months?	None anticipated
Is it suitable for comparison against the ozone NAAQS?	Yes
Design value	0.056

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

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

Yelm, Northern Pacific

Site Name	Yelm – North Pacific
AQS ID	530670005
GPS coordinates	931 Northern Pacific Road, Yelm
Location	In a Trailer
Address	LAT/LONG: 046 57' 03"/122 35' 43"
County	Thurston
Distance to road from gaseous probe (meters)	230
Traffic count (AADT, year)	17,000 (507 2012 WSDOT)
Groundcover	Gravel, grass
Statistical Area	Olympia, WA
Monitor Information Pollutant, POC	
Parameter code	44201
Basic monitoring objectives(s)	NAQQS Comparison
Site type(s)	Population Exposure
Monitor type(s)	SLAMS
Instrument manufacturer and model	Teledyne-API 400
Method code	087
FRM/FEM/ARM/other	FEM
Collecting Agency	Ecology
Analytical Lab	N/A
Reporting Agency	Ecology
Spatial scale	Urban
Monitoring start date	5/06
Current sampling frequency	Continuous
Calculated sampling frequency	N/A
Sampling season	Seasonal, (May – September)
Probe height (meters)	3
Distance from supporting structure (meters)	0.7
Distance from obstructions on roof (meters)	N/A
Distance from obstructions not on roof (meters)	N/A
Distance from trees (meters)	50
Distance to furnace or incinerator flue (meters)	N/A
Distance between collocated monitors (meters)	N/A
Unrestricted airflow (degrees)	360
Spacing from minor sources	No minor sources
Probe material for reactive gases	Teflon
Residence time for reactive gases (seconds)	4.4
Changes within the next 18 months?	None anticipated
Is it suitable for comparison against the ozone NAAQS?	Yes
Design value	0.055

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 exceeded the 8-hour ozone standard in the past three years (2012).

Table 6. Nitrogen Dioxide Parameter Codes 42600 NOy, 42601 NO, 42612 NOy-NO						
AQS#	**Site Name**	**Est.**	**Type**	**Scale**	**Sampling Frequency**	**Action for 2015**
530330080	Seattle Beacon Hill	3/07	NCore	Urban	Continuous	Continue
530090013	Cheeka Peak	5/06	Rural NCore	Regional	Continuous	Continue
530330030	Seattle 10th & Weller	4/14	SLAMS	Micro	Continuous	Continue
TBD	Tacoma	**1/16**	SLAMS	Micro	Continuous	Planning/ installation

Additional Monitors: A second near-road NO_2 monitor is planned for installation in Tacoma during 2015.

Recommendations/Proposed Modifications: None

Purpose: Beacon Hill is an urban scale NCORE site located south of downtown Seattle, within City of Seattle park/reservoir. 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.

Figure 4. Map of Washington State NO_2 sites

Seattle, Beacon Hill

Site Name	Seattle Beacon Hill
AQS ID	530330080
GPS coordinates	LAT/LONG: 047 34' 58"/122 18' 30"
Location	At Jefferson Park/reservoir
Address	4103 Beacon Avenue South, Seattle
County	King
Distance to road from gaseous probe (meters)	120
Traffic count (AADT, year)	12,700 (2012 WSDOT)
Groundcover	Grass, gravel
Statistical Area	Seattle-Bellevue-Everett, WA
Monitor Information Pollutant, POC	
Parameter code	42600, 42601, 42612, 42601, 42602, 42603
Basic monitoring objectives(s)	NAQQS Compliance
Site type(s)	Background
Monitor type(s)	NCore
Instrument manufacturer and model	Teledyne-API 200EU & Thermo 42C-Y
Method code	599, 574
FRM/FEM/ARM/other	FEM
Collecting Agency	Ecology
Analytical Lab	N/A
Reporting Agency	Ecology
Spatial scale	Urban
Monitoring start date	2006 (NO) / 2013 (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
Is it suitable for comparison against the NO_2 NAAQS?	Yes

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.

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 Interstate 5 in Downtown Seattle
Address	10th and Weller
County	King
Distance to road from gaseous probe (meters)	8
Traffic count (AADT, year)	18,400 (2012 WSDOT)
Groundcover	Concrete, grass
Statistical Area	Seattle-Bellevue-Everett, WA
Monitor Information Pollutant, POC	
Parameter code	42601, 42602, 42603
Basic monitoring objectives(s)	NAQQS Compliance
Site type(s)	Population Exposure
Monitor type(s)	SLAMS
Instrument manufacturer and model	Teledyne-API 200EU
Method code	599
FRM/FEM/ARM/other	FEM
Collecting Agency	Ecology
Analytical Lab	N/A
Reporting Agency	Ecology
Spatial scale	Micro
Monitoring start date	4/14
Current sampling frequency	Continuous
Calculated sampling frequency	N/A
Sampling season	Year-round
Probe height (meters)	3
Distance from supporting structure (meters)	1
Distance from obstructions on roof (meters)	N/A
Distance from obstructions not on roof (meters)	N/A
Distance from trees (meters)	N/A
Distance to furnace or incinerator flue (meters)	N/A
Distance between collocated monitors (meters)	N/A
Unrestricted airflow (degrees)	360
Spacing from minor sources	No minor sources
Probe material for reactive gases	Teflon
Residence time for reactive gases (seconds)	3.2
Changes within the next 18 months?	None anticipated
Is it 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.

Tacoma, (TBD)

Site Name	Tacoma (TBD)
AQS ID	TBD
GPS coordinates	LAT/LONG Est.: 047 22’ 63”/122 46’ 22”
Location	Adjacent to Jenny Reed Elementary School
Address	36th I-5
County	Pierce
Distance to road from gaseous probe (meters)	30
Traffic count (AADT, year)	
Groundcover	Asphalt, grass
Statistical Area	Seattle-Bellevue-Everett, WA
Monitor Information Pollutant, POC	
Parameter code	42601, 42602, 42603
Basic monitoring objectives(s)	NAQQS Compliance
Site type(s)	Population Exposure
Monitor type(s)	SPMS
Instrument manufacturer and model	Teledyne-API 200EU
Method code	599
FRM/FEM/ARM/other	FEM
Collecting Agency	Ecology
Analytical Lab	N/A
Reporting Agency	Ecology
Spatial scale	Micro
Monitoring start date	Est. 1/16
Current sampling frequency	Continuous
Calculated sampling frequency	N/A
Sampling season	Year-round
Probe height (meters)	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
Is it suitable for comparison against the NO_2 NAAQS?	Yes

Purpose: Tacoma **(TBD)** is an EPA-required, near-road monitoring site at Jenny Reed Elementary School adjacent to Interstate 5 in Tacoma. Start-up is anticipated January 2016.

Cheeka Peak (ORCAA)

Site Name	Cheeka Peak
AQS ID	530090013
GPS coordinates	LAT/LONG: 048 17' 12"/124 37' 13"
Location	At Cheeka Peak
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
Is it suitable for comparison against the NO_2 NAAQS?	Yes

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

Table 7. Sulfur Dioxide Parameter Code 42401						
AQS#	**Site Name**	**Est.**	**Type**	**Scale**	**Sampling Frequency**	**Action for 2015**
530330080	Seattle Beacon Hill	3/07	NCore	Urban	Continuous	Continue
530090013	Cheeka Peak	5/06	Rural NCore	Regional	Continuous	Continue

Additional Monitors: None.

Recommendations/Proposed Modifications: None.

Figure 5. Map of Washington State 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	At Jefferson Park/reservoir
Address	4103 Beacon Avenue South, Seattle
County	King
Distance to road from gaseous probe (meters)	120
Traffic count (AADT, year)	12,700 (2012 WSDOT)
Groundcover	Grass, gravel
Statistical Area	Seattle-Bellevue-Everett, WA
Monitor Information Pollutant, POC	
Parameter code	42401
Basic monitoring objectives(s)	NAQQS Compliance
Site type(s)	Population Exposure
Monitor type(s)	NCore
Instrument manufacturer and model	API T100U
Method code	560
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
Is it suitable for comparison against the SO_2 NAAQS?	Yes

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.

Cheeka Peak (ORCAA)

Site Name	Cheeka Peak
AQS ID	530090013
GPS coordinates	LAT/LONG: 048 17’ 12”/124 37' 13”
Location	At Cheeka Peak
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
Is it suitable for comparison against the SO_2 NAAQS?	Yes

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

Table 8. Particulate Matter 10, Parameter Code 81102						
AQS#	Site Name	Est.	Type	Scale	Sampling Type	Action for 2015
530650004	Colville, S. Oak	11/96	SLAMS	Neighborhood	Continuous	Continue
530050002	Kennewick, Metaline Ave.	10/94	SLAMS	Neighborhood	Continuous	Continue
530630021	Spokane, Augusta Ave.	3/09	SLAMS	Middle	1/6	Continue
530630021	Spokane, Augusta Ave.	3/09	Collocated	Middle	1/12	Continue
530770009	Yakima, S. 4th	4/00	SLAMS	Neighborhood	1/6	Continue

Additional Monitors: None.

Recommendations/Proposed Modifications: None. Note design value information below.

Thurston County Maintenance Area (Lacey $PM_{2.5}$)

The Lacey College Street $PM_{2.5}$ nephelometer site (530670013) is being used to assure continued compliance with the PM_{10} NAAQS as well as to confirm the Thurston County Maintenance Area (TCMA) continues to meet the qualification criteria of EPA's LMP approach.

A 5-year NPM_{10} design value below 98µg/m^3 demonstrates the TCMA continues to qualify for the LMP approach. The Lacey-College Street nephelometer site's (53670013) 5-year PM_{10} design value estimate for 2010–2014 was 43 µg/m^3. The PM_{10} design value estimate for 2012–2014 was 45 µg/m^3. The current design value estimates demonstrate the TCMA complies with the PM_{10} standard and continues to meet EPA's LMP qualification criteria.

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 look up method and the statistical fit method outlined in the LMP guidance document.

A 3-year PM_{10} design value of 150 µg/m^3 or below demonstrates continued compliance with the PM_{10} NAAQS. A 5-year design value below 98 µg/m^3 is required to qualify for the LMP approach. Design values calculated using the table look up 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 2014 5-year design value is 49±6 µg/m^3 and the 3-year design value is 52±6 µg/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 LMPlan approach. The 2014 5-year design value is 58±6 µg/m^3 and the 3-year design value is 61±7 µg/m^3. Note: In 2014, there was not a complete year of data due to site relocation. 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 2014 5-year design value is 60±13 µg/m^3 and the 3-year design value is 65±13 µg/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 LMP Guidance directs the design value be based on the most recent five years' of data. The most recent five years of data is from 2010–2014 using a combination of FRM and FEM data from the Augusta site.

A 5-year PM_{10} design value below 98 µg/m^3 demonstrates the Spokane County Maintenance Area continues to qualify for the LMP approach. The 5-year PM_{10} design value estimate for 2010–2014 was 80 µg/m^3. For the 3-year compliance with the PM_{10} NAAQS, the form of the standard is the number of 24-hour exceedances of 150 µg/m^3, averaged over three years. The 2014 PM_{10} design value for Augusta Avenue (530630021) is 0.4. This design value is in attainment with the standard, which is not to exceed one. The Spokane County Maintenance Area complies with the PM_{10} NAAQS and continues to meet EPA's LMP qualification criteria.

Figure 6. Map of Washington State PM_{10} sites

Colville, South Oak

Site Name	Colville, South Oak
AQS ID	530650004
GPS coordinates	LAT/LONG: 048 32' 41"/117 54' 13"
Location	Rooftop of Stevens County Courthouse
Address	215 South Oak, 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
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)	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)	N/A
Changes within the next 18 months?	None anticipated
Is it suitable for comparison against the PM_{10} NAAQS?	Yes
Design value	0.34

Purpose: Colville S. Oak is a neighborhood scale site for PM_{10} established in 1996, located in the commercial/residential area of Colville on the roof of the courthouse.

Exceedances: This site has exceeded the standard for PM_{10} in the past three years (2014).

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 the Kennewick Skills Center
Address	5929 West Metaline, Kennewick
County	Benton
Distance to road from gaseous probe (meters)	84
Traffic count (AADT, year)	N/A
Groundcover	Rooftop- asphalt, ground-grass and asphalt
Statistical Area	Richland-Kennewick-Pasco, WA

Kennewick, Metaline Avenue Monitor Information	
Pollutant, POC	
Parameter code	81102
Basic monitoring objectives(s)	NAQQS Compliance
Site type(s)	Population Exposure
Monitor type(s)	SLAMS
Instrument manufacturer and model	Thermo TEOM
Method code	079
FRM/FEM/ARM/other	FEM
Collecting Agency	Benton County Clean Air Agency
Analytical Lab	N/A
Reporting Agency	Ecology
Spatial scale	Neighborhood
Monitoring start date	10/94
Current sampling frequency	Continuous
Calculated sampling frequency	N/A
Sampling season	Year-round
Probe height (meters)	7
Distance from supporting structure (meters)	N/A
Distance from obstructions on roof (meters)	18
Distance from obstructions not on roof (meters)	N/A
Distance from trees (meters)	66
Distance to furnace or incinerator flue (meters)	N/A
Distance between collocated monitors (meters)	6
Unrestricted airflow (degrees)	360
Probe material for reactive gases	Teflon
Residence time for reactive gases (seconds)	N/A
Changes within the next 18 months?	None anticipated
Is it suitable for comparison against the PM_{10} NAAQS?	Yes
Design value	1.6 (0.4)[1]

Purpose: Kennewick is a neighborhood scale site for PM_{10} established in 1994 and located in the downtown Kennewick area. It is representative of Kennewick and the surrounding area which is subject to windblown dust.

Exceedances: Kennewick had three exceedances of 24-hr PM_{10} standard in 2013 and Washington plans to pursue exceptional event status for them. One exceedance in January 2014. Washington will flag the value and determine the regulatory significance.

[1] Pending exceptional events demonstration for high winds on 9/15/2013, 10/28/2013, and 11/02/2013.

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, WA
Monitor Information Pollutant, POC	
Parameter code	81102
Basic monitoring objectives(s)	NAQQS Compliance
Site type(s)	Population Exposure
Monitor type(s)	SLAMS - Collocated
Instrument manufacturer and model	Thermo TEOM
Method code	079
FRM/FEM/ARM/other	FEM/FRM
Collecting Agency	Spokane Region Clean Air Agency
Analytical Lab	Ecology
Reporting Agency	Ecology
Spatial scale	Middle
Monitoring start date	3/09
Current sampling frequency	Continuous and 1/6
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
Is it 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 is a past PM_{10} nonattainment area.

Exceedances: There was one exceedance of the 24-hour PM_{10} standard at Spokane in 2013. It has been flagged, leaving open the possibility of an exceptional event demonstration submittal to EPA in the future.

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, WA
Monitor Information Pollutant, POC	
Parameter code	81102
Basic monitoring objectives(s)	NAQQS Compliance
Site type(s)	Population Exposure
Monitor type(s)	SLAMS
Instrument manufacturer and model	Grasby Anderson
Method code	063
FRM/FEM/ARM/other	FRM
Collecting Agency	Yakima Region Clean Air Agency
Analytical Lab	Ecology
Reporting Agency	Ecology
Spatial scale	Neighborhood
Monitoring start date	4/00
Current sampling frequency	1/6
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
Is it 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 Yakima. 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. Particulate Matter 2.5, Parameter Codes 88101, 88502						
AQS#	**Site Name**	**Est.**	**Type**	**Sample Type**	**Sampling Frequency**	**Action for 2015**
530272002	Aberdeen Division St.	8/02	SLAMS	Continuous	Continuous	Continue
530330037	Bellevue, Bellevue Way	4/02	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
530650004	Colville	1/02	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 & 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
530330024	Lake Forest Park, Ballinger Way	1/03	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 & Weller	6/14	SLAMS	Continuous	Continuous	Continue
530450007	Shelton, W. Franklin	4/11	SLAMS	Continuous	Continuous	Continue
530630021	Spokane, Augusta	3/13	SLAMS	SEQ/Cont.	1/6	Continue
530630047	Spokane, Monroe St.	7/03	SLAMS	Continuous	Continuous	Continue
530530031	Tacoma, Alexander Ave.	1/03	SLAMS	Continuous	Continuous	Continue
530530029	Tacoma, S. L St.	1/10	SLAMS	SEQ/Cont.	1/1	Continue

Table 9. Particulate Matter 2.5, Parameter Codes 88101, 88502						
AQS#	**Site Name**	**Est.**	**Type**	**Sample Type**	**Sampling Frequency**	**Action for 2015**
530530029	Tacoma, S. L St.	4/12	Co-loc	SEQ/Cont.	1/12	Continue
530110024	Vancouver NE 84th	12/14	SLAMS	FEM	Continuous	Continue
530710005	Walla Walla, 12th St.	1/02	SLAMS	Continuous	Continuous	Continue
530070011	Wenatchee Fifth St.	12/12	SLAMS	Continuous	Continuous	Continue
530110022	Yacolt, Yacolt Rd.	6/07	SLAMS	Continuous	Continue	Continue
530770009	Yakima, S 4th Ave.	5/00 0/11	SLAMS	SEQ/Cont.	1/3	Continue

Additional Monitors: None.

Recommendations/Modifications: Vancouver was relocated in 2014, Port Angeles in 2015. ORCAA is planning relocation of the Aberdeen site in 2015 for safety reasons.

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. WAQA reporting is more protective of human health. Ecology's goal is to keep 24-hour concentrations below 20µg/m^3. In addition, some monitors in areas of Washington are not intended to be solely NAAQS based.

Selected monitors are used for protection of human health by calling burn bans 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.

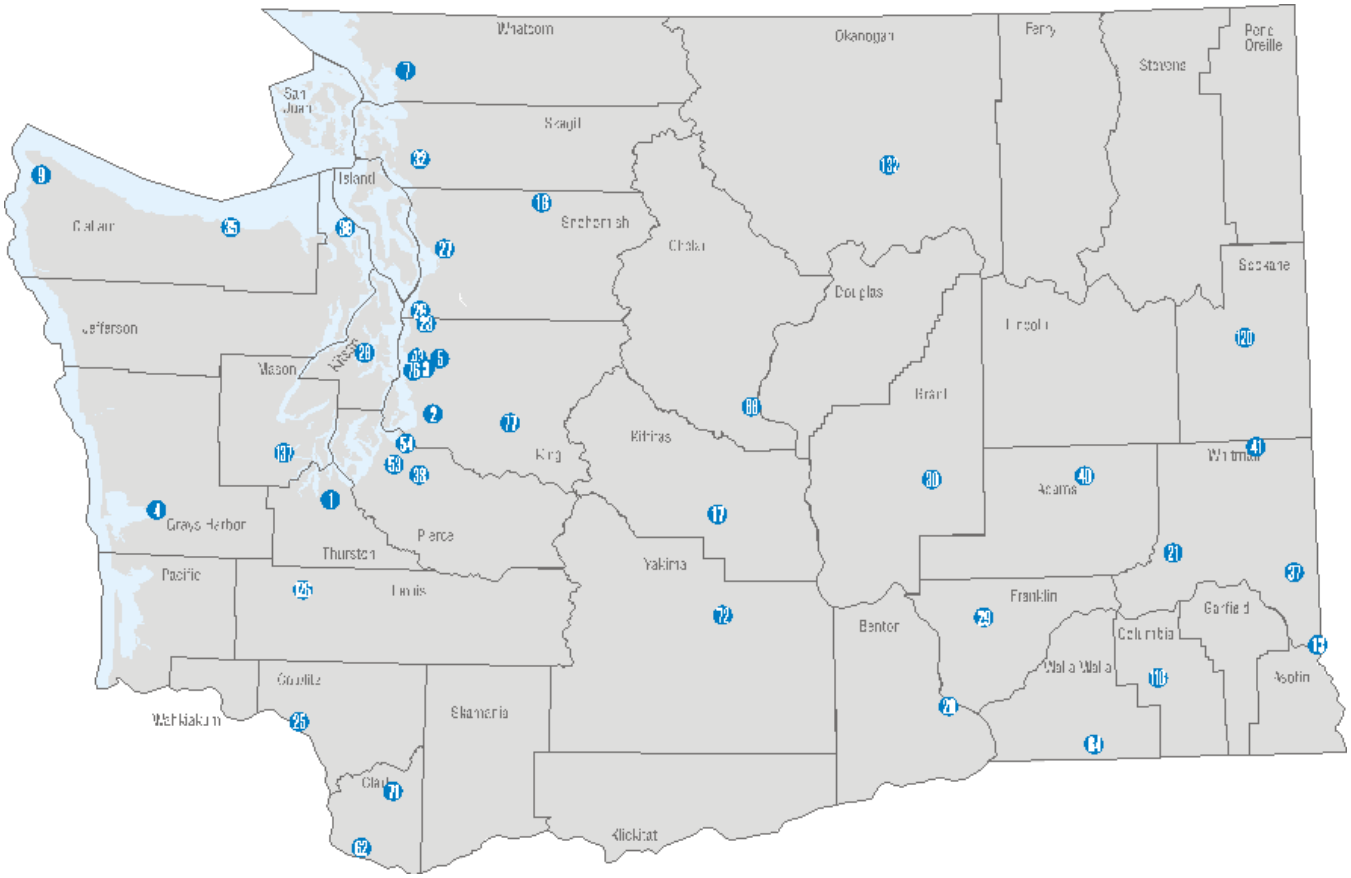

Figure 7. Map of Washington State $PM_{2.5}$ sites

Aberdeen, Division Street (ORCAA) - Scheduled for relocation in 2015

Site Name	Aberdeen Division Street
AQS ID	530272002
GPS coordinates	LAT/LONG: 046 58' 21"/123 49' 54"
Location	At 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?	None anticipated
Is it suitable for comparison against the $PM_{2.5}$ NAAQS?	No
Design value	N/A*

*Insufficient data.

Purpose: The Aberdeen site is neighborhood scale. 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. ORCAA is relocating this site during 2015 for safety concerns.

Bellevue, Bellevue Way

Site Name	Bellevue, Bellevue Way
AQS ID	530330037
GPS coordinates	LAT/LONG: 047 36' 47"/122 12' 06"
Location	Rooftop of Alvin Goldfarb Jewelers
Address	305 Bellevue Way, Bellevue
County	King
Distance to road from gaseous probe (meters)	20
Traffic count (AADT, year)	N/A
Groundcover	Paved, asphalt and concrete
Statistical Area	Seattle-Bellevue-Everett, WA
Monitor Information Pollutant, POC	
Parameter code	88502 (POC 4)
Basic monitoring objectives(s)	Public Information
Site type(s)	Population Exposure
Monitor type(s)	SLAMS
Instrument manufacturer and model	Radiance Research M903
Method code	771
FRM/FEM/ARM/other	Other
Collecting Agency	Ecology
Analytical Lab	N/A
Reporting Agency	Ecology
Spatial scale	Neighborhood
Monitoring start date	4/02
Current sampling frequency	Continuous
Calculated sampling frequency	N/A
Sampling season	Year-round
Probe height (meters)	2
Distance from supporting structure (meters)	2
Distance from obstructions on roof (meters)	N/A
Distance from obstructions not on roof (meters)	30
Distance from trees (meters)	N/A
Distance to furnace or incinerator flue (meters)	N/A
Distance between collocated monitors (meters)	N/A
Unrestricted airflow (degrees)	360
Spacing from minor sources	No minor sources
Probe material for reactive gases	Tygon
Residence time for reactive gases (seconds)	N/A
Changes within the next 18 months?	None anticipated
Is it suitable for comparison against the $PM_{2.5}$ NAAQS?	No
Design value	14

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

Bellingham, Yew Street (NWCAA)

Site Name	Bellingham, Yew Street
AQS ID	530730025
GPS coordinates	LAT/LONG: 048 45' 46"/122 26' 25"
Location	Rooftop of 7-11
Address	2412 Yew Street, Bellingham
County	Whatcom
Distance to road from gaseous probe (meters)	30
Traffic count (AADT, year)	N/A
Groundcover	Membrane roof, asphalt
Statistical Area	Bellingham, WA
Monitor Information Pollutant, POC	
Parameter code	88101 (POC 3)
Basic monitoring objectives(s)	NAQQS Compliance
Site type(s)	Population Exposure
Monitor type(s)	SLAMS
Instrument manufacturer and model	Thermo 1405F
Method code	581
FRM/FEM/ARM/other	FEM
Collecting Agency	Northwest Clean Air Agency
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)	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)	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
Is it suitable for comparison against the $PM_{2.5}$ NAAQS?	Yes
Design value	16

Purpose: Bellingham, Yew Street site is neighborhood scale. 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	A shelter
Address	3250 Spruce Avenue, Bremerton
County	Kitsap
Distance to road from gaseous probe (meters)	100
Traffic count (AADT, year)	N/A
Groundcover	Grass
Statistical Area	Bremerton, WA
Monitor Information Pollutant, POC	
Parameter code	88101 (POC 3)
Basic monitoring objectives(s)	NAQQS Compliance
Site type(s)	Population Exposure
Monitor type(s)	SLAMS
Instrument manufacturer and model	Thermo 8500C
Method code	181
FRM/FEM/ARM/other	FEM
Collecting Agency	Puget Sound Clean Air Agency
Analytical Lab	N/A
Reporting Agency	Ecology
Spatial scale	Neighborhood
Monitoring start date	5/12
Current sampling frequency	Continuous
Calculated sampling frequency	N/A
Sampling season	Year-round
Probe height (meters)	2.5
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
Is it suitable for comparison against the $PM_{2.5}$ NAAQS?	Yes
Design value	N/A*

*Insufficient data.

Purpose: Bremerton Spruce replaced Bremerton Meadowdale in 2012. Bremerton Spruce is a neighborhood scale residential site and 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	At Cheeka Peek
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
Is it suitable for comparison against the $PM_{2.5}$ NAAQS?	No
Design value	5

Purpose: Cheeka Peak is an NCore, regional scale site established in 2006 as 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
Is it suitable for comparison against the $PM_{2.5}$ NAAQS?	No
Design value	17

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	At the 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 neph 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
Is it 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, South Oak

Site Name	Colville, South Oak
AQS ID	530650004
GPS coordinates	LAT/LONG: 048 32' 41"/122 54' 13"
Location	Rooftop of the Stevens Co Courthouse
Address	215 South Oak 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 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)	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
Is it suitable for comparison against the $PM_{2.5}$ NAAQS?	No
Design value	25

Purpose: South Oak is a neighborhood scale site for $PM_{2.5}$ originally established in 1996 as a PM_{10} site and converted to $PM_{2.5}$ in 2009. It is located in the commercial/residential area of Colville.

Darrington, Fir Street (PSCAA)

Site Name	Darrington, Fir Street
AQS ID	530610020
GPS coordinates	LAT/LONG: 048 14' 49"/121 36' 11"
Location	A 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
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)	2.5
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
Is it suitable for comparison against the $PM_{2.5}$ NAAQS?	No
Design value	27

Purpose: Darrington is a neighborhood scale residential site 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 next to firehouse
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
Is it suitable for comparison against the $PM_{2.5}$ NAAQS?	No
Design value	16

Purpose: Dayton is a neighborhood scale small-community site located in Eastern Washington impacted by smoke from burning activities in the area. 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 3)
Basic monitoring objectives(s)	Public Information
Site type(s)	Population Exposure
Monitor type(s)	SLAMS
Instrument manufacturer and model	Thermo 1405F FEM
Method code	581
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)	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	Tygon
Residence time for reactive gases (seconds)	N/A
Changes within the next 18 months?	None anticipated
Is it suitable for comparison against the $PM_{2.5}$ NAAQS?	No
Design value	N/A*

*Insufficient data.

Purpose: Ellensburg is a neighborhood scale site established in 1995 as a PM_{10} site and converted to $PM_{2.5}$ in 2007. Upgraded to an FEM in November 2014. It is located in a residential area of Ellensburg impacted by smoke from home heating devices and 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, WA
Monitor Information Pollutant, POC	
Parameter code	88502 (POC 4)
Basic monitoring objectives(s)	Public Information
Site type(s)	Population Exposure
Monitor type(s)	SLAMS
Instrument manufacturer and model	Radiance Research M903
Method code	771
FRM/FEM/ARM/other	Other
Collecting Agency	Benton Clean Air Agency
Analytical Lab	N/A
Reporting Agency	Ecology
Spatial scale	Neighborhood
Monitoring start date	8/04
Current sampling frequency	Continuous
Calculated sampling frequency	N/A
Sampling season	Year-round
Probe height (meters)	7
Distance from supporting structure (meters)	N/A
Distance from obstructions on roof (meters)	18
Distance from obstructions not on roof (meters)	N/A
Distance from trees (meters)	66
Distance to furnace or incinerator flue (meters)	N/A
Distance between collocated monitors (meters)	6
Unrestricted airflow (degrees)	360
Spacing from minor sources	No minor sources
Probe material for reactive gases	Tygon
Residence time for reactive gases (seconds)	N/A
Changes within the next 18 months?	None anticipated
Is it suitable for comparison against the $PM_{2.5}$ NAAQS?	No
Design value	N/A*

*Insufficient data.

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

Kent, James, and Central (PSCAA)

Site Name	Kent, James and Central
AQS ID	530332004
GPS coordinates	LAT/LONG: 047 23' 10"/122 13' 55"
Location	A shelter
Address	614 North Railroad, Kent
County	King
Distance to road from gaseous probe (meters)	25
Traffic count (AADT, year)	N/A
Groundcover	Asphalt, landscaping
Statistical Area	Seattle-Bellevue-Everett, WA

Monitor Information Pollutant, POC	
Parameter code	88101(POC 3)
Basic monitoring objectives(s)	NAQQS Compliance
Site type(s)	Population Exposure
Monitor type(s)	SLAMS
Instrument manufacturer and model	Thermo 8500c FEM
Method code	181
FRM/FEM/ARM/other	FEM
Collecting Agency	Puget Sound Clean Air Agency
Analytical Lab	N/A
Reporting Agency	Ecology
Spatial scale	Neighborhood
Monitoring start date	7/87 established, 12/10 FEM
Current sampling frequency	Continuous
Calculated sampling frequency	N/A
Sampling season	Year-round
Probe height (meters)	2.5
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
Is it suitable for comparison against the $PM_{2.5}$ NAAQS?	Yes
Design value	23

Purpose: Kent is a neighborhood scale site in the South Puget Sound that is impacted from mobile sources, light industry, and smoke from home heating devices. The 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	At Mountain View Elementary School
Address	1900 College Street SE, Lacey
County	Thurston
Distance to road from gaseous probe (meters)	40
Traffic count (AADT, year)	N/A
Groundcover	Grass
Statistical Area	Olympia, WA
Monitor Information Pollutant, POC	
Parameter code	88502 (POC 4)
Basic monitoring objectives(s)	Public Information
Site type(s)	Population Exposure
Monitor type(s)	SLAMS
Instrument manufacturer and model	Ecotech M90003/1000G
Method code	812
FRM/FEM/ARM/other	Other
Collecting Agency	Olympic Region Clean Air Agency
Analytical Lab	N/A
Reporting Agency	Ecology
Spatial scale	Neighborhood
Monitoring start date	1/02
Current sampling frequency	Continuous
Calculated sampling frequency	N/A
Sampling season	Year-round
Probe height (meters)	10 from ground
Distance from supporting structure (meters)	2
Distance from obstructions on roof (meters)	N/A
Distance from obstructions not on roof (meters)	N/A
Distance from trees (meters)	N/A
Distance to furnace or incinerator flue (meters)	N/A
Distance between collocated monitors (meters)	N/A
Unrestricted airflow (degrees)	360
Spacing from minor sources	No minor sources
Probe material for reactive gases	Tygon
Residence time for reactive gases (seconds)	N/A
Changes within the next 18 months?	None anticipated
Is it suitable for comparison against the $PM_{2.5}$ NAAQS?	No
Design value	28

Purpose: Lacey, College Street is a neighborhood scale site 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
Is it suitable for comparison against the $PM_{2.5}$ NAAQS?	No
Design value	16

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

Lake Forest Park, Ballinger Way (PSCAA)

Site Name	Lake Forest Park, Ballinger Way
AQS ID	530330024
GPS coordinates	LAT/LONG: 047 45' 18"/122 16' 50"
Location	Rooftop at the strip mall
Address	17171 Bothell Way NE, Lake Forest Park
County	King
Distance to road from gaseous probe (meters)	200
Traffic count (AADT, year)	N/A
Groundcover	Membrane roof, asphalt
Statistical Area	Seattle-Bellevue-Everett, WA
Monitor Information Pollutant, POC	
Parameter code	88502 (POC 4)
Basic monitoring objectives(s)	Public Information
Site type(s)	Population Exposure
Monitor type(s)	SLAMS
Instrument manufacturer and model	Ecotech M9003/1000G
Method code	812
FRM/FEM/ARM/other	Other
Collecting Agency	Puget Sound Clean Air Agency
Analytical Lab	N/A
Reporting Agency	Ecology
Spatial scale	Neighborhood
Monitoring start date	3/99 established, 1/03 nephelometer installed
Current sampling frequency	Continuous
Calculated sampling frequency	N/A
Sampling season	Year-round
Probe height (meters)	2.5 rooftop 35 from ground
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
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
Is it suitable for comparison against the $PM_{2.5}$ NAAQS?	No
Design value	24

Purpose: Lake Forest Park is a neighborhood scale site impacted by smoke from home heating devices and mobile sources from two adjacent arterials. It is used for curtailment calls during home heating season.

Longview, 30th Avenue (SWCAA)

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

Purpose: Longview is a neighborhood scale site impacted by smoke from home heating. It is representative of the Longview/Kelso area and is 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	at Snohomish PUD
Address	6120 212th Street SW, Lynnwood
County	Snohomish
Distance to road from gaseous probe (meters)	40
Traffic count (AADT, year)	N/A
Groundcover	Asphalt
Statistical Area	Seattle-Bellevue-Everett, WA
Monitor Information Pollutant, POC	
Parameter code	88101 (POC 3 & 4)
Basic monitoring objectives(s)	NAQQS Compliance
Site type(s)	Population Exposure
Monitor type(s)	SLAMS
Instrument manufacturer and model	Thermo and Thermo 8500c FEM
Method code	181 and 181
FRM/FEM/ARM/other	FEM and Collocated FEM
Collecting Agency	Puget Sound Clean Air Agency
Analytical Lab	N/A
Reporting Agency	Ecology
Spatial scale	Neighborhood
Monitoring start date	1/11 FEM and 9/13 Collocated
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
Is it suitable for comparison against the $PM_{2.5}$ NAAQS?	Yes
Design value	20

Purpose: Lynnwood is a neighborhood scale site 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	at Marysville Junior High School
Address	1605 7th Avenue, Marysville
County	Snohomish
Distance to road from gaseous probe (meters)	15
Traffic count (AADT, year)	N/A
Groundcover	Grass
Statistical Area	Seattle-Bellevue-Everett, WA
Monitor Information Pollutant, POC	
Parameter code	88101 (POC 3 & 4)
Basic monitoring objectives(s)	NAQQS Compliance
Site type(s)	Population Exposure
Monitor type(s)	SLAMS
Instrument manufacturer and model	Thermo & Thermo 8500C
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
Is it suitable for comparison against the $PM_{2.5}$ NAAQS?	Yes
Design value	26

Purpose: Marysville is a neighborhood scale site 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 Pepiot Way, Mesa
County	Franklin
Distance to road from gaseous probe (meters)	300
Traffic count (AADT, year)	N/A
Groundcover	Grass, scrub
Statistical Area	Not in an urban area
Monitor Information Pollutant, POC	
Parameter code	88502 (POC 4)
Basic monitoring objectives(s)	Public Information
Site type(s)	Population Exposure
Monitor type(s)	SLAMS
Instrument manufacturer and model	Radiance Research M903
Method code	771
FRM/FEM/ARM/other	Other
Collecting Agency	Ecology
Analytical Lab	N/A
Reporting Agency	Ecology
Spatial scale	Neighborhood
Monitoring start date	1/03
Current sampling frequency	Continuous
Calculated sampling frequency	N/A
Sampling season	Year-round
Probe height (meters)	6
Distance from supporting structure (meters)	N/A
Distance from obstructions on roof (meters)	33
Distance from obstructions not on roof (meters)	N/A
Distance from trees (meters)	N/A
Distance to furnace or incinerator flue (meters)	N/A
Distance between collocated monitors (meters)	N/A
Unrestricted airflow (degrees)	360
Spacing from minor sources	No minor sources
Probe material for reactive gases	Tygon
Residence time for reactive gases (seconds)	N/A
Changes within the next 18 months?	None anticipated
Is it suitable for comparison against the $PM_{2.5}$ NAAQS?	No
Design value	18

Purpose: Mesa is a neighborhood scale small-community site in Eastern Washington impacted by agricultural sources and smoke from home heating. It is 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
Is it suitable for comparison against the $PM_{2.5}$ NAAQS?	No
Design value	20

Purpose: Moses Lake is a neighborhood scale, small community site in Eastern Washington impacted by agricultural sources and smoke from home heating sources. It is 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	A room at 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	Northwest 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)	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
Is it suitable for comparison against the $PM_{2.5}$ NAAQS?	No
Design value	10

Purpose: Mt. Vernon is a neighborhood scale, small community site 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	a shelter at USFS Offices
Address	42404 SE North Bend Way, North Bend
County	King
Distance to road from gaseous probe (meters)	180
Traffic count (AADT, year)	N/A
Groundcover	Grass
Statistical Area	Seattle-Bellevue-Everett, WA
Information Pollutant, POC	
Parameter code	88502 (POC 4)
Basic monitoring objectives(s)	Public Information
Site type(s)	Population Exposure
Monitor type(s)	SLAMS
Instrument manufacturer and model	Radiance Research M903
Method code	771
FRM/FEM/ARM/other	Other
Collecting Agency	Ecology
Analytical Lab	N/A
Reporting Agency	Ecology
Spatial scale	Neighborhood
Monitoring start date	3/03
Current sampling frequency	Continuous
Calculated sampling frequency	N/A
Sampling season	Year-round
Probe height (meters)	3
Distance from supporting structure (meters)	1
Distance from obstructions on roof (meters)	N/A
Distance from obstructions not on roof (meters)	N/A
Distance from trees (meters)	20
Distance to furnace or incinerator flue (meters)	N/A
Distance between collocated monitors (meters)	N/A
Unrestricted airflow (degrees)	360
Spacing from minor sources	No minor sources
Probe material for reactive gases	Tygon
Residence time for reactive gases (seconds)	N/A
Changes within the next 18 months?	None anticipated
Is it suitable for comparison against the $PM_{2.5}$ NAAQS?	No
Design value	16

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

Port Angeles, East 5th Street (ORCAA)

Site Name	Port Angeles, East 5th Street
AQS ID	530090016
GPS coordinates	LAT/LONG: 048 11' 50"/123 43' 64"
Location	At the 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
Is it 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 and impacted by smoke from home heating sources. Port Angeles is used for curtailment calls during home heating season. Port Angeles was relocated in 2015. This relocation was outlined and reported in the 2014 ANP.

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	At 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
Is it suitable for comparison against the $PM_{2.5}$ NAAQS?	No
Design value	14

Purpose: Port Townsend is a neighborhood scale SLAMS site 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	At 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
Is it suitable for comparison against the $PM_{2.5}$ NAAQS?	No
Design value	17

Purpose: Pullman is a neighborhood scale site in Eastern Washington 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	A shelter
Address	9616 128th Street East, Puyallup
County	Pierce
Distance to road from gaseous probe (meters)	20
Traffic count (AADT, year)	N/A
Groundcover	Gravel, grass
Statistical Area	Seattle-Bellevue-Everett, WA
Monitor Information Pollutant, POC	
Parameter code	88502 (POC 4)
Basic monitoring objectives(s)	Public Information
Site type(s)	Population Exposure
Monitor type(s)	SLAMS
Instrument manufacturer and model	Ecotech M9003/1000G
Method code	812
FRM/FEM/ARM/other	Other
Collecting Agency	Puget Sound Clean Air Agency
Analytical Lab	N/A
Reporting Agency	Ecology
Spatial scale	Neighborhood
Monitoring start date	12/91 established, 1/03 nephelometer
Current sampling frequency	Continuous
Calculated sampling frequency	N/A
Sampling season	Year-round
Probe height (meters)	2
Distance from supporting structure (meters)	N/A
Distance from obstructions on roof (meters)	N/A
Distance from obstructions not on roof (meters)	N/A
Distance from trees (meters)	80
Distance to furnace or incinerator flue (meters)	100
Distance between collocated monitors (meters)	N/A
Unrestricted airflow (degrees)	360
Spacing from minor sources	No minor sources
Probe material for reactive gases	Tygon
Residence time for reactive gases (seconds)	N/A
Changes within the next 18 months?	None anticipated
Is it suitable for comparison against the $PM_{2.5}$ NAAQS?	No
Design value	24

Purpose: Puyallup is a neighborhood scale site 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	A 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
Is it suitable for comparison against the $PM_{2.5}$ NAAQS?	No
Design value	16

Purpose: Ritzville is a neighborhood scale, small community located in Eastern Washington 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 a 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
Is it suitable for comparison against the $PM_{2.5}$ NAAQS?	No
Design value	15

Purpose: Rosalia is a neighborhood scale small-community site located in Eastern Washington 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	A shelter at Jefferson Park/reservoir
Address	4103 Beacon Avenue South, Seattle
County	King
Distance to road from gaseous probe (meters)	10
Traffic count (AADT, year)	N/A
Groundcover	Gravel, grass
Statistical Area	Seattle-Bellevue-Everett, WA
Monitor Information Pollutant, POC	
Parameter code	88101 (POC 3 & POC 1)
Basic monitoring objectives(s)	NAQQS Compliance
Site type(s)	Population Exposure
Monitor type(s)	NCore
Instrument manufacturer and model	Thermo 8500C FEM & Thermo 2025 FRM
Method code	181 & 118
FRM/FEM/ARM/other	Thermo 8500 FEM & 2025 FRM
Collecting Agency	Ecology
Analytical Lab	Ecology
Reporting Agency	Ecology
Spatial scale	Urban
Monitoring start date	6/79 established, 2/10 FEM installed
Current sampling frequency	Continuous & 1/3
Calculated sampling frequency	N/A
Sampling season	Year Round
Probe height (meters)	6 FEM 3 FRM
Distance from supporting structure (meters)	2 FRM
Distance from obstructions on roof (meters)	N/A
Distance from obstructions not on roof (meters)	N/A
Distance from trees (meters)	N/A
Distance to furnace or incinerator flue (meters)	N/A
Distance between collocated monitors (meters)	2
Unrestricted airflow (degrees)	360
Spacing from minor sources	No minor sources
Probe material for reactive gases	Pyrex
Residence time for reactive gases (seconds)	N/A
Changes within the next 18 months?	None anticipated
Is it suitable for comparison against the $PM_{2.5}$ NAAQS?	Yes
Design value	16 FEM

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

Seattle, Duwamish (PSCAA)

Site Name	Seattle, East Marginal Way
AQS ID	530330057 (same)
GPS coordinates	LAT/LONG: 047 55' 99"/122 33' 82"
Location	A shelter
Address	4700 East Marginal Way
County	King
Distance to road from gaseous probe (meters)	90
Traffic count (AADT, year)	N/A
Groundcover	Asphalt
Statistical Area	Seattle-Bellevue-Everett, WA
Monitor Information Pollutant, POC	
Parameter code	88101 (POC 3)
Basic monitoring objectives(s)	NAQQS Compliance
Site type(s)	Population Exposure
Monitor type(s)	SLAMS
Instrument manufacturer and model	Thermo 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	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?	No
Is it suitable for comparison against the $PM_{2.5}$ NAAQS?	Yes
Design value	N/A*

*Insufficient data.

Purpose: Seattle Duwamish is a neighborhood scale site located in the Duwamish River Valley impacted by mobile source diesel emissions and industrial sources. Relocated in 2014 as requested and reported in the 2014 ANP.

Seattle, 10th and Weller (PSCAA)

Site Name	Seattle, 10th and Weller
AQS ID	530330030
GPS coordinates	LAT/LONG: 047 59' 72"/122 31' 97"
Location	A shelter 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)	18,400 (2012 WSDOT)
Groundcover	Concrete, grass
Statistical Area	Seattle-Bellevue-Everett, WA
Monitor Information Pollutant, POC	
Parameter code	88101
Basic monitoring objectives(s)	NAQQS Compliance
Site type(s)	Population Exposure
Monitor type(s)	SPMS
Instrument manufacturer and model	Thermo 8500C FEM
Method code	181
FRM/FEM/ARM/other	FEM
Collecting Agency	Ecology
Analytical Lab	N/A
Reporting Agency	Ecology
Spatial scale	Micro
Monitoring start date	6/14
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
Is it suitable for comparison against the NO_2 NAAQS?	Yes
Design value	N/A*

*Insufficient data (recently established).

Purpose: Seattle 10th and Weller is an EPA-required, near-road monitoring site adjacent to Interstate 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 the 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
Is it suitable for comparison against the $PM_{2.5}$ NAAQS?	No
Design value	20

Purpose: Shelton is a neighborhood scale site 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, WA
Monitor Information Pollutant, POC	
Parameter code	88101 (POC 3 & 1)
Basic monitoring objectives(s)	NAQQS Compliance
Site type(s)	Population Exposure
Monitor type(s)	SLAMS
Instrument manufacturer and model	Thermo 8500C FEM & Thermo 2025 FRM
Method code	181/118
FRM/FEM/ARM/other	FEM & FRM
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 installed
Current sampling frequency	Continuous & 1/6
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
Is it suitable for comparison against the $PM_{2.5}$ NAAQS?	Yes
Design value	28

Purpose: Spokane Augusta Avenue is a neighborhood scale site impacted by smoke from home heating devices and light industrial sources.

Spokane, Monroe Street

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

Tacoma, Alexander Avenue (PSCAA)

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

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

Tacoma, South L Street (PSCAA)

Site Name	Tacoma, L Street
AQS ID	530530029
GPS coordinates	LAT/LONG: 047 11' 11"/122 27' 06"
Location	A shelter
Address	7802 South L Street, Tacoma
County	Pierce
Distance to road from gaseous probe (meters)	100
Traffic count (AADT, year)	N/A
Groundcover	Asphalt, grass
Statistical Area	Seattle-Bellevue-Everett, WA
Monitor Information Pollutant, POC	
Parameter code	88101 (POC 3 & 1)
Basic monitoring objectives(s)	NAQQS Compliance
Site type(s)	Population Exposure
Monitor type(s)	SLAMS
Instrument manufacturer and model	Thermo 8500C FEM & Thermo 2025 FRM
Method code	181 & 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
Is it suitable for comparison against the $PM_{2.5}$ NAAQS?	Yes
Design value	30 FEM

Purpose: Tacoma, L Street is a neighborhood scale site impacted by smoke from home heating devices.

Exceedances: This site has not exceeded the standard in the last three years.

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	at Water Station #15
Address	2795 NE 84th Ave, Vancouver
County	Clark
Distance to road from gaseous probe (meters)	170 meters
Traffic count (AADT, year)	8471 (2011)
Groundcover	grass
Statistical Area	Portland-Vancouver, OR-WA
Monitor Information Pollutant, POC	
Parameter code	88101, POC 3
Basic monitoring objectives(s)	NAAQS Compliance
Site type(s)	Population exposure/highest conc.
Monitor type(s)	SLAMS
Instrument manufacturer and model	Thermo 1405F FEM
Method code	581
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
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?	FEM was relocated on December 29, 2014
Is it suitable for comparison against the $PM_{2.5}$ NAAQS?	Yes
Design value	30 (Combined Vancouver locations)

Purpose: Vancouver, NE 84th Avenue is a population exposure/highest concentration site impacted by smoke from home heating. This site was relocated from Vancouver Van Plaza/CenterPoint Park in December 2014.

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
Is it suitable for comparison against the $PM_{2.5}$ NAAQS?	No
Design value	20

Purpose: Walla Walla is a neighborhood scale small-community site located in Eastern Washington impacted by smoke from burning activities in the area.

Wenatchee, 5thStreet

Site Name	Wenatchee 5th Street
AQS ID	530070011
GPS coordinates	LAT/LONG: 047 43' 06"/120 34' 19"
Location	A shelter at Wenatchee Valley College
Address	1300 Fifth 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	Thermo 1405F FEM
Method code	181
FRM/FEM/ARM/other	FEM
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
Is it suitable for comparison against the $PM_{2.5}$ NAAQS?	Yes
Design value	N/A*

*Insufficient data.

Purpose: Wenatchee 5th Street was established in late 2012 as a neighborhood scale site to replace Wenatchee Alaska Way. Wenatchee 5th is located in a residential area and impacted by smoke from home heating and wildfires.

Yacolt, Yacolt Road (SWCAA)

Site Name	Yacolt, Yacolt Road
AQS ID	530110022
GPS coordinates	LAT/LONG: 045 86' 63"/122 40' 88"
Location	At Yacolt Primary School
Address	406 West Yacolt Road, Yacolt
County	Clark
Distance to road from gaseous probe (meters)	112
Traffic count (AADT, year)	N/A
Groundcover	Asphalt, grass
Statistical Area	Vancouver, WA
Monitor Information Pollutant, POC	
Parameter code	88502 (POC 3)
Basic monitoring objectives(s)	Public Information
Site type(s)	Population Exposure
Monitor type(s)	SLAMS
Instrument manufacturer and model	Radiance Research M903
Method code	771
FRM/FEM/ARM/other	Other
Collecting Agency	Southwest Clean Air Agency
Analytical Lab	N/A
Reporting Agency	Ecology
Spatial scale	Neighborhood
Monitoring start date	6/07
Current sampling frequency	Continuous
Calculated sampling frequency	N/A
Sampling season	Year-round
Probe height (meters)	15 roof
Distance from supporting structure (meters)	0.5
Distance from obstructions on roof (meters)	N/A
Distance from obstructions not on roof (meters)	N/A
Distance from trees (meters)	N/A
Distance to furnace or incinerator flue (meters)	N/A
Distance between collocated monitors (meters)	N/A
Unrestricted airflow (degrees)	360
Spacing from minor sources	No minor sources
Probe material for reactive gases	Teflon
Residence time for reactive gases (seconds)	N/A
Changes within the next 18 months?	None anticipated
Is it suitable for comparison against the $PM_{2.5}$ NAAQS?	No
Design value	20

Purpose: Yacolt is a neighborhood scale site impacted by smoke from home heating devices and is representative of the area.

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 at Yakima Comprehensive MH
Address	402 South 4th Avenue, Yakima
County	Yakima
Distance to road from gaseous probe (meters)	14
Traffic count (AADT, year)	N/A
Groundcover	Asphalt roof, grass & cement on the ground
Statistical Area	Yakima, WA

Monitor Information Pollutant, POC	
Parameter code	88101 (POC 3 & 1)
Basic monitoring objectives(s)	NAQQS Compliance
Site type(s)	Population Exposure
Monitor type(s)	SLAMS
Instrument manufacturer and model	Thermo FEM & Thermo 2025
Method code	181 & 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 FEM installed
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
Is it suitable for comparison against the $PM_{2.5}$ NAAQS?	Yes
Design value	32

Purpose: Yakima is a neighborhood scale site impacted by smoke from home heating and burning sources in the area.

Other – Contracted Local Clean Air Agencies

Table 10. Other - Contracted Local Clean Air Agencies						
AQS#	**Site Name**	**Est.**	**Type**	**Scale**	**Sampling Type**	**Action for 2015**
530570011	Anacortes	10/11	SLAMS	Urban	Continuous	Continue
530090013	Cheeka Peak	5/06	Rural NCore	Regional	Continuous	Continue
530630021	Spokane Augusta	5/10	SLAMS	Urban	Continuous	Continue

Additional Monitors: None.

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

Anacortes, O Street (NWCAA)

Site Name	Anacortes, O Street
AQS ID	530570011
GPS coordinates	LAT/LONG: 048 52' 05"/122 61' 42"
Location	A trailer
Address	202 O Street, 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 (POC 3)
Basic monitoring objectives(s)	NAQQS Compliance
Site type(s)	Population Exposure
Monitor type(s)	SLAMS
Instrument manufacturers and model	Teledyne-API 400, Teledyne-API T100U & Thermo 8500
Method code	087, 560, 181
FRM/FEM/ARM/other	FEM
Collecting Agency	Northwest Clean Air Agency
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
Is it suitable for comparison against the ozone NAAQS?	Yes
Design Value	0.042 Ozone/N/A* $PM_{2.5}$ FEM

*Insufficient data

Purpose: The Northwest Clean Air Agency (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	A shelter at Cheeka Peak
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
Is it suitable for comparison against the $PM_{2.5}$, ozone, and Trace gases NAAQS?	$PM_{2.5}$ – No, Ozone – Yes, Trace gases, Yes

Purpose: The Olympic Region Clean Air Agency (ORCAA) is responsible for operation of this Rural NCore site.

Spokane, Augusta Avenue (SRCAA)

Site Name	Spokane Augusta
AQS ID	530630021
GPS coordinates	LAT/LONG: 047 39' 39"/117 21' 26"
Location	Rooftop of SRCAA Offices
Address	3104 East 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	MSA: Spokane, WA
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 400
Method code	087
FRM/FEM/ARM/other	FEM
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	Seasonal (May through September)
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)	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
Is it suitable for comparison against the ozone NAAQS?	Yes
Design value	0.061
Is it suitable for comparison against the ozone NAAQS?	

Purpose: The Spokane Region Clean Air Agency (SRCAA) collects ozone information in its jurisdiction. This site is suitable for comparison to the ozone NAAQS.

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 2015**
530090013	Cheeka Peak	5/06	WS, WD, Ta	Regional	Continuous	Continue
530650004	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
530270008	Oakville (Tribal)	10/09	WS, WD, Ta	Neighborhood	Continuous	Discontinue
530470013	Omak (Tribal)	10/10	WS, WD, Ta	Neighborhood	Continuous	Continue
530330080	Seattle Beacon Hill	6/79	WS, WD, Ta	Urban	Continuous	Continue
530330030	Seattle 10th & Weller	4/14	WS, WD, Ta	Micro	Continuous	Continue
530630021	Spokane Augusta Ave	7/09	WS, WD, Ta	Neighborhood	Continuous	Continue
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 2015.

Recommendations/Modifications: EPA has decided to discontinue the Oakville site in 2015 including meteorology.

Cheeka Peak (ORCAA)

Site Name	Cheeka Peak
AQS ID	530090013
GPS coordinates	048 29' 78"/124 62' 49"
Location	At Cheeka Peak
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 85004
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
Is it 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, South Oak

Site Name	Colville
AQS ID	530650004
GPS coordinates	048 32' 41"/122 54' 13"
Location	Rooftop of the Stevens County Courthouse
Address	215 South Oak Street
County	Stevens
Distance to road from gaseous probe (meters)	N/A
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	3/11
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
Is it 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	At Mud Mountain Dam
Address	30525 SE Mud Mountain Road, Enumclaw
County	King
Distance to road from gaseous probe (meters)	N/A
Traffic count (AADT, year)	N/A
Groundcover	Gravel & weeds
Statistical Area	Seattle-Bellevue-Everett, WA
Monitor Information Pollutant, POC	
Parameter code	61101, 61102, 62101
Basic monitoring objectives(s)	Public Information
Site type(s)	Regional Transport
Monitor type(s)	SLAMS
Instrument manufacturer and model	RM Young 85004
Method code	050, 020, 040, 62
FRM/FEM/ARM/other	Other
Collecting Agency	Ecology
Analytical Lab	N/A
Reporting Agency	Ecology
Spatial scale	Urban
Monitoring start date	2/04
Current sampling frequency	Continuous
Calculated sampling frequency	N/A
Sampling season	Seasonal (May – September)
Probe height (meters)	10
Distance from supporting structure (meters)	N/A
Distance from obstructions on roof (meters)	N/A
Distance from obstructions not on roof (meters)	N/A
Distance from trees (meters)	N/A
Distance to furnace or incinerator flue (meters)	N/A
Distance between collocated monitors (meters)	N/A
Unrestricted airflow (degrees)	360
Probe material for reactive gases	N/A
Residence time for reactive gases (seconds)	N/A
Changes within the next 18 months?	None anticipated
Is it 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, WA
Monitor Information Pollutant, POC	
Parameter code	61101, 61102, 62101
Basic monitoring objectives(s)	Public Information
Site type(s)	Population Exposure
Monitor type(s)	SLAMS
Instrument manufacturer and model	RM Young 85004
Method code	050, 020, 040
FRM/FEM/ARM/other	Other
Collecting Agency	Ecology
Analytical Lab	N/A
Reporting Agency	Ecology
Spatial scale	Neighborhood
Monitoring start date	8/12
Current sampling frequency	Continuous
Calculated sampling frequency	N/A
Sampling season	Year-round
Probe height (meters)	10
Distance from supporting structure (meters)	N/A
Distance from obstructions on roof (meters)	18
Distance from obstructions not on roof (meters)	N/A
Distance from trees (meters)	66
Distance to furnace or incinerator flue (meters)	N/A
Distance between collocated monitors (meters)	N/A
Unrestricted airflow (degrees)	360
Probe material for reactive gases	N/A
Residence time for reactive gases (seconds)	N/A
Changes within the next 18 months?	None anticipated
Is it 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 Kennewick.

North Bend, North Bend Way

Site Name	North Bend, North Bend Way
AQS ID	530330017
GPS coordinates	047 29' 23"/121 46' 24"
Location	At USDA Forest Service Offices
Address	42404 SE North Bend Way, North Bend
County	King
Distance to road from gaseous probe (meters)	N/A
Traffic count (AADT, year)	N/A
Groundcover	Grass
Statistical Area	Seattle-Bellevue-Everett, WA
Monitor Information Pollutant, POC	
Parameter code	61101, 61102, 62101
Basic monitoring objectives(s)	Public Information
Site type(s)	Population Exposure
Monitor type(s)	SLAMS
Instrument manufacturer and model	RM Young 85004
Method code	050, 020, 040, 62
FRM/FEM/ARM/other	Other
Collecting Agency	Ecology
Analytical Lab	N/A
Reporting Agency	Ecology
Spatial scale	Regional
Monitoring start date	1/00
Current sampling frequency	Continuous
Calculated sampling frequency	N/A
Sampling season	Year-round
Probe height (meters)	10
Distance from supporting structure (meters)	N/A
Distance from obstructions on roof (meters)	N/A
Distance from obstructions not on roof (meters)	N/A
Distance from trees (meters)	20
Distance to furnace or incinerator flue (meters)	N/A
Distance between collocated monitors (meters)	N/A
Unrestricted airflow (degrees)	360
Probe material for reactive gases	N/A
Residence time for reactive gases (seconds)	N/A
Changes within the next 18 months?	None anticipated
Is it 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.

Oakville, Howanut Drive (Chehalis Tribe) - To be discontinued in 2015

Site Name	Oakville, Chehalis Tribe
AQS ID	530270008
GPS coordinates	046 49' 23"/123 09' 40"
Location	A field
Address	252 Howanut Drive, Oakville
County	Grays Harbor
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	10/09
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)	3
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
Is it suitable for comparison against the NAAQS?	No

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

Omak (Colville Tribe)

Site Name	Omak (Colville Nation)
AQS ID	530470013
GPS coordinates	048. 39' 99"/119 518' 96"
Location	A mill yard
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
Is it 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	At Jefferson Park/reservoir
Address	4103 Beacon Avenue South, Seattle
County	King
Distance to road from gaseous probe (meters)	N/A
Traffic count (AADT, year)	N/A
Groundcover	Gravel, grass
Statistical Area	Seattle-Bellevue-Everett, WA
Monitor Information Pollutant, POC	
Parameter code	61101, 61102, 62101
Basic monitoring objectives(s)	Public Information
Site type(s)	Population Exposure
Monitor type(s)	NCore
Instrument manufacturer and model	RM Young 85004
Method code	050, 020, 040, 062
FRM/FEM/ARM/other	Other
Collecting Agency	Ecology
Analytical Lab	N/A
Reporting Agency	Ecology
Spatial scale	Urban
Monitoring start date	6/79
Current sampling frequency	Continuous
Calculated sampling frequency	N/A
Sampling season	Year-round
Probe height (meters)	10
Distance from supporting structure (meters)	N/A
Distance from obstructions on roof (meters)	N/A
Distance from obstructions not on roof (meters)	N/A
Distance from trees (meters)	N/A
Distance to furnace or incinerator flue (meters)	N/A
Distance between collocated monitors (meters)	N/A
Unrestricted airflow (degrees)	360
Probe material for reactive gases	N/A
Residence time for reactive gases (seconds)	N/A
Changes within the next 18 months?	None anticipated
Is it 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, WA
Monitor Information Pollutant, POC	
Parameter code	61101, 61102, 62101
Basic monitoring objectives(s)	Public Information
Site type(s)	Population Exposure
Monitor type(s)	SLAMS
Instrument manufacturer and model	RM Young 85004
Method code	050, 020, 040, 062
FRM/FEM/ARM/other	Other
Collecting Agency	Ecology
Analytical Lab	N/A
Reporting Agency	Ecology
Spatial scale	Micro
Monitoring start date	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
Is it 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, WA
Monitor Information Pollutant, POC	
Parameter code	61101, 61102, 62101
Basic monitoring objectives(s)	Public Information
Site type(s)	Population Exposure
Monitor type(s)	SLAMS
Instrument manufacturer and model	RM Young 85004
Method code	050, 020, 040
FRM/FEM/ARM/other	Other
Collecting Agency	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
Is it 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 Ozone monitoring at Spokane Augusta.

Tacoma, Tower Drive

Site Name	Tacoma, Tower Drive
AQS ID	530531016
GPS coordinates	47.30444"/122.4120
Location	At a 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, WA
Monitor Information Pollutant, POC	
Parameter code	61101, 61102, 62101
Basic monitoring objectives(s)	Public Information
Site type(s)	Population Exposure
Monitor type(s)	SLAMS
Instrument manufacturer and model	RM Young 85004
Method code	050, 020, 040
FRM/FEM/ARM/other	Other
Collecting Agency	Ecology
Analytical Lab	N/A
Reporting Agency	Ecology
Spatial scale	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
Is it 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	At 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
Is it 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	At Blairmont 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-Vancouver, OR-WA
Monitor Information Pollutant, POC	
Parameter code	61101, 61102, 62101
Basic monitoring objectives(s)	Public Information
Site type(s)	Population Exposure
Monitor type(s)	SLAMS
Instrument manufacturer and model	RM Young 85004
Method code	050, 020, 040
FRM/FEM/ARM/other	Other
Collecting Agency	Ecology
Analytical Lab	N/A
Reporting Agency	Ecology
Spatial scale	Neighborhood
Monitoring start date	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
Is it suitable for comparison against the NAAQS?	No

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

Wenatchee, 5thStreet

Site Name	Wenatchee 5th
AQS ID	530070011
GPS coordinates	047 43' 06"/120 34' 19"
Location	At 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
Is it 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	At 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
Is it suitable for comparison against the NAAQS?	No

Purpose: Collection of wind speed, wind direction, and temperature in support of contracted local clean air agencies.

Table 12. Other Contracted Sites USFS						
AQS#	**Site Name**	**Est.**	**Type**	**Scale**	**Sampling Type**	**Action for 2015**
530070007	Chelan	12/02	SPMS	Neighborhood	Continuous	Continue
530070010	Leavenworth	2/05	SPMS	Neighborhood	Continuous	Continue
530770007	Naches	8/08	SPMS	Neighborhood	Continuous	Continue
530470009	Twisp	11/03	SPMS	Neighborhood	Continuous	Continue
530470010	Winthrop	11/03	SPMS	Neighborhood	Continuous	Continue

Additional Monitors: None.

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	At USDAFS 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
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 is planned but not scheduled
Is it 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	At 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
Is it suitable for comparison against the $PM_{2.5}$ NAAQS?	No
Design value	27*

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

*Excluding exceedances during wildfire events.

Naches, Highway 12 (USFS)

Site Name	Naches, Highway 12
AQS ID	530770007
GPS coordinates	LAT/LONG: 046 43' 47"/120 42' 13"
Location	At the USFS
Address	10237 Highway 12, Naches
County	Yakima
Distance to road from gaseous probe (meters)	25
Traffic count (AADT, year)	N/A
Groundcover	Grass, asphalt
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 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	4/08
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)	6
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 is planned, not scheduled
Is it suitable for comparison against the $PM_{2.5}$ NAQAS?	No
Design value	N/A

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

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
Is it suitable for comparison against the $PM_{2.5}$ NAAQS?	No
Design value	24*

Purpose: This site's primary purpose is for prescribed burning decision-making by USFS. This site is not suitable for comparison to the $PM_{2.5}$ NAAQS.

*Excluding exceedances during wildfire events.

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	At the 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	Tefloon
Residence time for reactive gases (seconds)	N/A
Changes within the next 18 months?	None anticipated
Is it suitable for comparison against the $PM_{2.5}$ NAAQS?	No
Design value	17*

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

*Excluding exceedances during wildfire events.

Other – Contracted Sites Tribal/EPA

Table 13. Other - Contracted Sites Tribal/EPA						
AQS#	**Site Name (Tribe)**	**Est.**	**Type**	**Scale**	**Sampling Type**	**Action for 2015**
530090014	Neah Bay (Makah)	2/10	SPMS	Neighborhood	Continuous	Continue
530270008	Oakville (Chehalis)	1/06	SPMS	Neighborhood	Continuous	Discontinue
530470013	Omak (Colville)	10/10	SPMS	Neighborhood	Continuous	Continue
530270009	Taholah (Quinault)	TBD	SPMS	Neighborhood	Continuous	TBD*
530770015	Toppenish (Yakama)	8/08	SPMS	Neighborhood	Continuous	Continue
530610011	Tulalip (Tulalip)	12/11	SPMS	Neighborhood	Continuous	Discontinue
530650002	Wellpinit (Spokane)	10/08	SPMS	Neighborhood	Continuous	Continue
530770016	White Swan (Yakama)	1/09	SPMS	Neighborhood	Continuous	Continue

Additional Monitors: None.

Recommendations/Modifications: *Monitoring was suspended at Taholah the fall of 2011. Ecology continues to work with the Quinault operator to site and establish a monitor at Taholah. EPA has decided to discontinue monitoring at the Oakville and Tulalip sites in 2015.

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
Is it suitable for comparison against the $PM_{2.5}$ NAAQS?	No
Design value	N/A*

*Insufficient data

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

Oakville, Howanut Dr. (Chehalis Tribe) - To be discontinued in 2015

Site Name	Oakville, Chehalis Tribe
AQS ID	530270008
GPS coordinates	LAT/LONG: 046 49' 23"/123 09' 40"
Location	A shelter
Address	252 Howanut Drive, Oakville
County	Grays Harbor
Distance to road from gaseous probe (meters)	Not near a road
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	Chehalis Tribe
Analytical Lab	N/A
Reporting Agency	Ecology
Spatial scale	Neighborhood
Monitoring start date	1/06
Current sampling frequency	Continuous
Calculated sampling frequency	N/A
Sampling season	Year-round
Probe height (meters)	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)	160
Distance to furnace or incinerator flue (meters)	280
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
Is it suitable for comparison against the $PM_{2.5}$ NAAQS?	No
Design value	N/A*

*Insufficient data

Purpose: This site is used by the Chehalis Tribe for air quality information on the reservation. The air quality information is also used by EPA Region 10 to determine burning curtailment calls in support of the FARR.

Omak, (Colville Tribe)

Site Name	Omak, Colville Tribe
AQS ID	530470013
GPS coordinates	LAT/LONG: 048. 39' 99"/119 518' 96"
Location	A shelter
Address	8th Ave & Omak/Okanogan Rd
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	Radiance Research M903
Method code	771
FRM/FEM/ARM/other	Other
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
Is it suitable for comparison against the $PM_{2.5}$ NAAQS?	No
Design value	N/A*

*Insufficient data.

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

Taholah, TBD - (Quinault Tribe)

Site Name	Taholah, Quinault Tribe
AQS ID	TBD
GPS coordinates	TBD
Location	TBD
Address	TBD
County	Grays Harbor
Distance to road from gaseous probe (meters)	TBD
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	TBD
Current sampling frequency	Continuous
Calculated sampling frequency	N/A
Sampling season	Year-round
Probe height (meters)	TBD
Distance from supporting structure (meters)	TBD
Distance from obstructions on roof (meters)	TBD
Distance from obstructions not on roof (meters)	TBD
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?	Completion of site installation
Is it suitable for comparison against the $PM_{2.5}$ NAAQS?	No
Design value	N/A

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

Toppenish, Ward Rd. (Yakama Nation)

Site Name	Toppenish, Ward Road
AQS ID	530770015
GPS coordinates	LAT/LONG: 046 23' 07"/120 18' 49"
Location	At 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	Radiance Research M903
Method code	771
FRM/FEM/ARM/other	Other
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)	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?	Potentially. EPA is considering a $PM_{2.5}$ FEM
Is it suitable for comparison against the $PM_{2.5}$ NAAQS?	No
Design value	40*

*Excluding exceedances during wildfire events.

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

Tulalip, Reuben Shelton Dr. (Tulalip Tribe) - To be discontinued in 2015

Site Name	Tulalip, Reuben Shelton Drive - Tulalip
AQS ID	530610011
GPS coordinates	LAT/LONG: 047 06' 90"/122 27' 50"
Location	A shelter
Address	3107 Reuben Shelton Dr., Tulalip
County	Snohomish
Distance to road from gaseous probe (meters)	10
Traffic count (AADT, year)	N/A
Groundcover	Asphalt, grass
Statistical Area	MSA: Seattle-Bellevue-Everett, WA
Monitor Information Pollutant, POC	
Parameter code	88502 (POC 3)
Basic monitoring objectives(s)	Public Information
Site type(s)	Population Exposure
Monitor type(s)	SLAMS
Instrument manufacturer and model	Radiance Research M903
Method code	771
FRM/FEM/ARM/other	Other
Collecting Agency	Puget Sound Clean Air Agency
Analytical Lab	N/A
Reporting Agency	Ecology
Spatial scale	Neighborhood
Monitoring start date	12/11
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)	30
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
Is it suitable for comparison against the $PM_{2.5}$ NAAQS?	No
Design value	N/A*

*Insufficient data.

Purpose: This site is used by the Tulalip Tribe for air quality information on the reservation. The air quality information is also used by EPA Region 10 to determine burning curtailment calls in support of the FARR.

Wellpinit, Ford-Wellpinit Rd. (Spokane Tribe)

Site Name	Wellpinit, Ford-Wellpinit Road
AQS ID	530650002
GPS coordinates	LAT/LONG: 047 53' 19"/117 59' 19"
Location	Rooftop of Spokane Tribal Property
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
Is it suitable for comparison against the $PM_{2.5}$ NAAQS?	No
Design value	17

Purpose: This site is used by the Spokane Tribe for air quality information on the reservation. The air quality information is also used by EPA Region 10 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	At 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
Is it suitable for comparison against the $PM_{2.5}$ NAAQS?	No
Design value	N/A*

*Insufficient data.

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

Lead (Pb 14129)

Table 14. Pb Lead, Parameter Code 85129						
AQS#	**Site Name**	**Est.**	**Type**	**Scale**	**Sampling Type**	**Action for 2015**
530330080	Seattle, Beacon Hill	1/13	NCore	Urban	1/6	Continue

Additional Monitors: None.

Recommendations/Modifications: None.

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.

Seattle, Beacon Hill

Site Name	Seattle Beacon Hill
AQS ID	530330080
GPS coordinates	LAT/LONG: 047 34' 58"/122 18' 30"
Location	At 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, WA
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
Is it suitable for comparison against the Pb NAAQS?	Yes

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

Trace Gas Monitoring

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

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

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

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

Table 15. Trace Gas Monitoring CO, SO_2, NO_y

AQS#	Site Name	Est.	Type	Scale	Sampling Type	Action for 2015
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 2015**
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
$PM_{10-2.5}$	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 for trace level CO, SO_2, NO_2, $PM_{2.5}$, air toxics, speciation, 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). Data from this site also supports Particulate Research Center activities.

Table 17. NCore Parameters Cheeka Peak						
Parameter	**Parameter Code**	**Sampling/ Analysis Method**	**Sampling schedule**	**Spatial Scale**	**Instrument Type**	**Action for 2015**
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
$PM_{10-2.5}$	**Not sampling**	**Not sampling**	**Not sampling**	Rural	None	TBD
$PM_{10-2.5}$ speciation	**Not sampling**	**Not sampling**	**Not sampling**	Rural	None	TBD
WS, WD & sigma	61101/61102/ 61106	Continuous	Continuous	Rural	RM Young 85004	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 rural NCore site in Clallam County. Parameters measured at Cheeka Peak are: $PM_{2.5}$, ozone, trace-level CO, SO_2, NO_y, $PM_{2.5}$, and meteorology.

Toxics

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

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

Table 18. Toxics

AQS#	Site Name	Est.	Type	Scale	Sampling Type	Action for 2015
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	At Jefferson Park/reservoir
Address	4103 Beacon Avenue S., Seattle
County	King
Distance to road from gaseous probe (meters)	
Traffic count (AADT, year)	
Groundcover	Grass, gravel
Statistical Area	Seattle-Bellevue-Everett, WA
Monitor Information Pollutant, POC	
Parameter code	Unknown
Basic monitoring objectives(s)	Special Studies
Site type(s)	
Monitor type(s)	SPMS
Instrument manufacturer and model	Zontech (Zonteck) 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
Is it suitable for comparison against the NAAQS?	No

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

Speciation

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

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

Table 19. Speciation

AQS#	Site Name	Est.	Type	Scale	Sampling Type	Action for 2014
530330080	Seattle Beacon Hill	4/97	NCore	Urban	1/3	Continue
530330030	Seattle 10th & Weller	2015	SPMS	Neighborhood	1/6	Continue
530530029	Tacoma L St	2008	SPMS	Neighborhood	1/6	Continue
530770009	Yakima	2002	SPMS	Neighborhood	1/6	Continue

Additional Monitors: None.

Recommendations/Modifications: The Marysville site was relocated to Seattle 10th & Weller March 2015.

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 Unadj	88403	Sulfate
88118	Cesium	88166	Silver	88357	EC CSN Rev Unadj	88502	PM2.5 Speciation Mass

Seattle, Beacon Hill NCore

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

Seattle, 10th & Weller

Site Name	Seattle, 10th & Weller
AQS ID	530330030
GPS coordinates	LAT/LONG: 047 59' 72"/122 31' 97"
Location	Adjacent to Interstate 5 in Downtown Seattle
Address	10th & Weller
County	King
Distance to road from gaseous probe (meters)	6
Traffic count (AADT, year)	146,000 I-5 (2012 WSDOT)
Groundcover	Concrete, Grass
Statistical Area	Seattle-Bellevue-Everett, WA
Monitor Information Pollutant, POC	
Parameter code	See list above
Basic monitoring objectives(s)	Special Studies
Site type(s)	Population Exposure
Monitor type(s)	SPMS
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
Is it suitable for comparison against the NAAQS?	No

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

Tacoma, South L Street (PSCAA)

Site Name	Tacoma L Street
AQS ID	530530029
GPS coordinates	047 11' 11"/122 27' 06"
Location	A shelter
Address	7802 South L Street, Tacoma
County	Pierce
Distance to road from gaseous probe (meters)	100
Traffic count (AADT, year)	N/A
Groundcover	Asphalt, grass
Statistical Area	Seattle-Bellevue-Everett, WA
Monitor Information Pollutant, POC	
Parameter code	See list above
Basic monitoring objectives(s)	Special Studies
Site type(s)	Population Exposure
Monitor type(s)	SPMS
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
Is it suitable for comparison against the NAAQS?	No

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

Yakima, S. 4th (YRCAA)

Site Name	Yakima S. 4th (YRCAA)
AQS ID	530770009
GPS coordinates	046 35' 42"/120 30' 44"
Location	At Yakima Comprehensive M H
Address	402 South 4th Avenue, Yakima
County	Yakima
Distance to road from gaseous probe (meters)	14
Traffic count (AADT, year)	N/A
Groundcover	Asphalt roof, grass & cement on the ground
Statistical Area	Yakima, WA
Monitor Information Pollutant, POC	
Parameter code	See list above
Basic monitoring objectives(s)	Special Studies
Site type(s)	Population Exposure
Monitor type(s)	SPMS
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
Is it 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.

APPENDIX A. EPA APPENDIX D FORMS

PART 58 APPENDIX D SITE EVALUATION FORM FOR CARBON MONOXIDE (CO)					
SITE NAME_____All_____SITE ADDRESS_____					
AQS ID_____ EVALUATION DATE_____EVALUATOR_____					
APPLICABLE SECTION	REQUIREMENT	OBSERVED	CRITERIA MET?		
			YES	NO	N/A
4.2.1(a)	One CO monitor is required to operate collocated with one required near-road NO_2 monitor in CBSAs having a population of 1,000,000 or more persons. If a CBSA has more than one required near-road NO_2 monitor, only one CO monitor is required to be collocated with a near-road NO_2 monitor within that CBSA.		Y		
4.2.2(a)	Has the EPA Regional Administrator required additional CO monitoring stations above the minimum number of monitors required in 4.2.1? If so, note location in comment field.		N		
Comments:					

MSA Description[1]	CBSA population[2, 3]	Minimum required number of SLAMS CO sites	Present number of SLAMS CO sites in MSA
Seattle-Tacoma-Bellevue, WA NCore & Near Road	3,439,809	1	2
Spokane, WA	527,753	1	1
Cheeka Peak (not in an MSA) NCore		1	1

[1]see http://www2.census.gov/econ/susb/data/msa_codes_2007_to_2011.txt

[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, WA has fewer PM_{10} monitors than required by CFR. The total numbers of PM_{10} analyzers/samplers in this area was reduced through previous Annual Network Plans and approved by EPA.

MSA Description[1]	MSA population[2, 3]	Minimum required number of PM_{10} stations (from Table D-4)	Present number of PM10 stations in MSA
Seattle-Tacoma-Bellevue, WA	3,439,809	2-4	1
Spokane, WA	527,753	1-2	1
Kennewick, WA	253,340	1-2	1
Yakima, WA	243,231	1-2	1

[1]see http://www2.census.gov/econ/susb/data/msa_codes_2007_to_2011.txt

[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 population[1, 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		

Comments**: Washington's second near-road site is planned Tacoma, WA. The Tacoma location is near the intersection of Interstate 5 and 36th Street. This site will be located on Jennie Reed Elementary School property, part of the Tacoma School District. It is expected to be operational January 1, 2016.**

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, WA (see comments)	3,439,809	2	1	1	1
Cheeka Peak (not in an MSA) NCore					

[1]see http://www2.census.gov/econ/susb/data/msa_codes_2007_to_2011.txt

[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 & 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 2012-2014	Minimum required number of $PM_{2.5}$ SLAMS FRM/FEM/ARM sites (from Table D-5)	Present number of $PM_{2.5}$ SLAMS FRM/FEM/ARM sites in MSA	Present number of continuous $PM_{2.5}$ FEM/ARM analyzers in MSA	Present number of continuous $PM_{2.5}$ STN analyzers in MSA
Seattle-Tacoma-Bellevue, WA	3,439,809	30.0 FEM	3	5	5	1
Spokane, WA	527,753	28.0 FEM	1	1	1	0
Kennewick, WA	253,340	Insufficient data	0	0	0	0
Olympia-Tumwater, WA	252,264	28.0 Neph	0	0	0	0
Bremerton-Silverdale, WA	251,133	Insufficient data	0	0	1	0
Yakima, WA	243,231	32.0 FEM	0	1		0
Mt. Vernon-Anacortes WA	116,001	10.0 Neph	0	0	0	0

[1]see http://www2.census.gov/econ/susb/data/msa_codes_2007_to_2011.txt)

[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 R10 when siting the maximum O_3 concentration site.		N	
4.1(i)	O_3 is being monitored at SLAMS monitoring sites during the "ozone season" as specified in Table D-3 of Appendix D to Part 58.	Y		

Comments:

MSA population[1, 2]	Most recent 3-year design value concentrations ≥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, WA	3,439,809	3	6
Spokane, WA	527,753	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 Table 1 and 2 below to determine minimum requirement for each CBSA)	Y		
4.4.2(a)(1)	Is the monitor sited within the boundaries of the parent CBSA and is it one of the following site types: population exposure, highest concentration, source impacts, general background, or regional transport?	Y		
4.4.3(a)	Has the EPA Regional Administrator required additional SO_2 monitoring stations above the minimum number of monitors required in 4.4.2? If so, note location in comment field.		N	
4.4.5(a)	Is your agency counting an existing SO_2 monitor at an NCore site in a CBSA with a minimum monitoring requirement?	Y		
Comments:				

Table 1.

CBSA Description[1]	CBSA population[1, 2]	total amount of SO_2 in tons per year emitted within the CBSA (use 2008 NEI[4])	PWEI (population x total emissions ÷ 1,000,000)	Minimum required number of SO_2 monitors in CBSA (see Table 2 below)	Present number of SO_2 monitors in CBSA
Seattle-Tacoma-Bellevue, WA NCore	3,439,809	13,671	47,026	1	1
Cheeka Peak (not in an MSA) NCore				1	1

[1]see http://www.census.gov/population/metro/data/def.html
[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	Require 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 inappropriately impact the air quality data collected at a site.		Y		
4. SPACING FROM OBSTRUCTIONS	(a) To avoid scavenging, the probe inlet must have unrestricted airflow and be located away from obstacles. The separation distance must be at least twice the height that the obstacle protrudes above the probe inlet (exception is street canyon or source-oriented sites where buildings and other structures are unavoidable).		Y		
	(b) The probe inlet must have unrestricted airflow in an arc of at least 180 degrees. This arc must include the predominant wind direction for the season of greatest pollutant concentration potential.		Y		
5. SPACING FROM TREES	(a) To reduce possible interference the probe inlet must be at least 10 meters or further from the drip line of trees.		Y		
	(c) No trees should be between source and probe inlet for microscale sites.		Y		
6. SPACING FROM ROADWAYS	2. (b) Microscale CO monitor probes in downtown areas or urban street canyon locations shall be located a minimum distance of 2 meters and a maximum distance of 10 meters from the edge of the nearest traffic lane.		Y		
	2. (c) Microscale CO monitor inlet probes in downtown areas or urban street canyon locations shall be located at least 10 meters from an intersection and preferably at a midblock location.				N/A
9. PROBE MATERIAL & RESIDENCE TIME	(a) Sampling train material must be FEP Teflon or borosilicate glass (e.g., Pyrex) for reactive gases.		Y		
	(c) Sampling probes for reactive gas monitors at NCore must have a sample residence time less than 20 seconds.		Y		
Are there any changes that might compromise original siting criteria? If so, provide detail in comment section.				N	

Other Comments: Please see Carbon Monoxide section for detail on individual sites.

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

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

PART 58 APPENDIX E SITE EVALUATION FORM FOR $PM_{2.5}$, PM_{10}, $PM_{10-2.5}$,and Pb					
SITE NAME_____All_____ SITE ADDRESS_____					
AQS ID_____ EVALUATION DATE_____ EVALUATOR_____					
APPLICABLE SECTION	REQUIREMENT	OBSERVED	CRITERIA MET?		
			YES	NO	N/A
2. HORIZONTAL AND VERTICLE PLACEMENT	2-15 meters above ground level for neighborhood or larger spatial scale, 2-7 meters for microscale spatial scale sites and middle spatial scale $PM_{10-2.5}$ sties. 1 meter vertically or horizontally away from any supporting structure, walls, *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.

References

1. Code of Federal Regulations, Title 40, Part 58, Appendix A, B, C, D & E.

2. Code of Federal Regulations, Title 40, Part 50.

3. Code of Federal Regulations, Title 40, Part 53.

4. Code of Federal Regulations, Title 40, Part 58.

5. U.S. EPA Revised Requirements for Designation of Reference and Equivalent Methods for PM2.5 and Ambient Air Quality Surveillance for Particulate Matter -Final Rule. 40 CFR, Parts 53 and 58. Federal Register, 62 (138):38763-38853. July 18, 1997.

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

7. U.S. EPA National Ambient Air Quality Standards for Particulate Matter – Final Rule. 40 CFR Parts 50, 51, 52, 53, and 58. January 15, 2013

8. Guidance for Network Design and Optimum Site Exposure for PM2.5 and PM10, EPA-454/R-99-022, December 15, 1997.

9. SLAMS/NAMS/PAMS Network Review Guidance, EPA-454/R-98-003, March 1998.

10. Ambient Monitoring Guidelines for Prevention of Significant Deterioration (PSD), EPA-450/4-87-007, May 1987.

11. Guideline on Ozone Monitoring Site Selection, EPA-454/R-98-002, August 1998.