

2020 Oregon Annual Ambient Criteria Pollutant Air Monitoring Network Plan



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State of Oregon
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Glossary of Air Quality Terms

AQI	Air Quality Index – standardized EPA method of reporting air quality
CO	Carbon monoxide – An odorless, colorless gaseous pollutant
DV	Design Value – the pollutant concentration used to compare to the NAAQS
FEM	Federal Equivalence Method (Method approved for comparison to NAAQS)
FRM	Federal Reference Method (Method approved for comparison to NAAQS)
HAPs	Hazardous Air Pollutant as defined in Title III of the Clean Air Act
IMPROVE	EPA’s PM _{2.5} speciation visibility network
NAAQS	National Ambient Air Quality Standards – federal air quality standards
NATTS	National Air Toxics Trends network
NO	Nitrogen oxide
NO ₂	Nitrogen dioxide
NO _x	Nitrogen oxides – redish brown gaseous pollutant - mainly NO and NO ₂
NO _y	NO _x + HNO ₃ + organic nitrates + inorganic nitrates = NO _x + NO _z
O ₃	Ozone – a gaseous pollutant and a component of smog at ground level
PM _{2.5}	Particulate Matter 2.5 micrometers in diameter and smaller
PM ₁₀	Particulate Matter 10 micrometers in diameter and smaller
PM _{10-2.5}	The particle size between 10 and 2.5.
SIP	State Implementation Plan
SO ₂	Sulfur dioxide
TSP	Total Suspended Particulates
VOC	Volatile Organic Compounds
WAQR	Wildfire Air Quality Rating - wildfire smoke health internet page

Air Pollutant Concentration Units:

ppm	Parts per million
ppb	Parts per billion
µg/m ³	Microgram per cubic meter
ng/m ³	Nanograms per cubic meter

Executive Summary

This annual criteria pollutant network plan is required by EPA and discusses changes to the criteria pollutant monitoring network. DEQ also has an ambient air toxics monitoring network that includes trend sites, neighborhood assessment sites, and source assessment sites. The planning for air toxics monitoring is conducted separately from the criteria pollutant network plan and can be found on the DEQ Air Quality Monitoring web page at <http://www.oregon.gov/deq/aq/Pages/Air-Quality-Monitoring.aspx>

In 2020/2021 DEQ plans the following changes to the criteria monitoring network upon approval from EPA. While these are the planned updates, COVID 19 related state budget constraints will require prioritization of monitoring activities and may delay some of this work.

PM2.5 Federal Equivalence Monitoring (FEM)

DEQ plans to continue replacing the PM_{2.5} Federal Reference Method (FRM) monitors with Federal Equivalent Method (FEM) continuous monitors. The FRM monitors are 22 years old, are starting to fail, are expensive to operate, and only provide data every third day. The FEMs are continuous, cheaper to operate, and provide real time data. DEQ will upgrade to FEMs in Hillsboro, Portland, Tualatin, and Medford as funding allows. DEQ has installed PEMs in Oakridge, Klamath Falls, Lakeview, Burns, and Prineville. DEQ will remove the FRM from Grants Pass and use the nephelometer to estimate PM2.5. Grants Pass is well below the NAAQS when wildfire smoke data are excluded.

PM10 Monitoring

PM10 monitoring is required in the maintenance areas but the levels have been near 1/3 of the NAAQS for over a decade or more (aside from wildfire smoke impacts). Most of the PM10 is PM2.5 so PM2.5 monitoring is a viable surrogate for PM10 estimates. DEQ proposes to discontinue PM10 monitoring in La Grande, Klamath Falls, Medford, and Lakeview and use PM2.5 as a surrogate to help reduce costs [PM2.5 informational monitoring for the Air Quality Index](#)

DEQ will continue to place out the 30 new light scattering (DEQ SensOR) monitoring sites in 2020. Roughly half the monitors have been deployed so far. For more information on this read the **Location Selection and Rationale for 30 New Monitoring Sites** document on [DEQ's Air Quality Monitoring web page](#).

PM2.5 Speciation

DEQ will discontinue Burns speciation monitoring because the necessary data are collected. DEQ also recommends reducing the sampling frequency for the EPA trends monitor in Portland from every third day to every sixth day. Both these actions will help reduce costs.

Photochemical Assessment Monitoring Stations (PAMS)

DEQ is required to install PAMS at our National Core Site (NCore) in Portland by June 2021. EPA has provided a GC/MS and will provide funds through the PM2.5 grant to purchase a ceilometer and an NO2 analyzer. DEQ plans to renovate the NCore site with a new shelter to accommodate the added equipment. Budget constraints may delay DEQ's purchase of all the equipment necessary for PAMS to be fully operational by June 2021.

1. Introduction

The Oregon Department of Environmental Quality's (ODEQ) ambient air quality monitoring network is designed in response to the Environmental Protection Agency's (EPA) National Monitoring Strategy, state and local needs, the requirements of air quality maintenance plans and the State Implementation Plans (SIPs) for non-attainment areas, and Code of Federal Regulations (CFR) requirements.

40 CFR 58.10 requires the state and local air quality surveillance agencies to write an annual ambient air quality monitoring network plan. EPA requires the plan to be put out for public comment and submitted to EPA by July 1st. This report is used to determine if the network meets the monitoring objectives defined in Part 58, Appendix D and to propose modifications to the network in the following year. A more detailed air quality data summary is available annually at <http://www.deq.state.or.us/aq/forms/annrpt.htm>

2. Monitoring background

2.1 National Monitoring Strategy

The National Monitoring Strategy directs state and local agencies to operate more continuous monitors and to collect real time air quality data. The real time information is available through EPA's AIRNow and ODEQ's Air Quality Index (AQI) web pages. In particular, EPA encouraged states to use continuous PM_{2.5} monitors instead of the filter base samplers which do not provide real time information. The National Monitoring Strategy also created National Core (NCORE) sites which contain a wide array of pollutant monitoring. ODEQ's NCORE site has monitors for Carbon monoxide (CO), Nitrogen oxides (NO_x), Sulfur dioxide (SO₂), ozone (O₃), particulate matter 2.5 and 10 micrometers in diameter and smaller (PM_{2.5} and PM₁₀), PM coarse (PM₁₀-PM_{2.5}=PM_c), PM_{2.5} Speciation, visibility, and meteorology. The NCORE site is at SE Lafayette Street, Portland.

2.1.1 State and Local Support

Our monitors support state and local needs by providing data for the Air Quality Index, local wood stove management programs, Clean Air Quality Advisories, the Department of Agriculture's field burning program, and the US Forest Service and BLM's forest health program. ODEQ also operates a visibility network in the Cascades to support Regional Haze requirements protecting pristine Class 1 areas.

2.1.2 AQ Maintenance and Non-attainment support

ODEQ monitoring supports the SIPs and maintenance plans developed for many cities. ODEQ also has monitors in attainment areas with fast growing populations to support pollution prevention measures.

2.2 Non-attainment and Maintenance Areas

Maintenance areas are those geographic areas that had a history of nonattainment, but are now consistently meeting the National Ambient Air Quality Standard. Maintenance areas have been re-designated by EPA from "nonattainment" to "attainment with a maintenance plan," or designated by the Environmental Quality Commission. Legal descriptions of these areas are listed in Oregon Administrative Rules, [Chapter 340, Division 204-0010](#)..

2.2.1 Non-attainment areas awaiting maintenance plans:

- PM2.5 Klamath Falls - Moderate nonattainment of 2006 daily PM2.5 standard.
2012 State implementation Plan.
- Oakridge - Moderate nonattainment of 2006 daily PM2.5 standard.
2016 State implementation Plan.
- Oakridge Urban Growth Boundary - State Implementation Plan - 1999

2.2.2 Maintenance Areas in Oregon:

- CO: Grants Pass Central Business District – Second maintenance plan - 2015
Portland Metropolitan Service District Boundary – Second maintenance plan - 2004
Klamath Falls Urban Growth Boundary - First maintenance plan - 2000
Medford Urban Growth Boundary - Second maintenance plan - 2015
Salem-Kaiser Area Limited Maintenance plan - First maintenance plan - 2007
- PM10: Grants Pass Urban Growth Boundary - Second maintenance plan - 2015
Klamath Falls Urban Growth Boundary - First maintenance plan - 2002
Medford-Ashland Air Quality Maintenance Area - Second maintenance plan - 2015
La Grande Urban Growth Boundary - First maintenance plan - 2006
Lakeview Urban Growth Boundary – First maintenance plan - 2006
Eugene/Springfield Urban Growth Area – First maintenance plan - 2013
- Ozone (1hr): Portland/Vancouver AQMA. Second maintenance plan – 2007

3. Overview of Network Operations

3.1 Air Monitoring Network Design

Site Type and Spatial Scale

Federal regulations, specifically 40 CFR Part 58 Appendix D, require that a State and Local Air Monitoring (SLAMS) network be designed to meet a minimum of three basic monitoring objectives: Provide air pollution data to the public in a timely manner, support compliance with the National Ambient Air Quality Standards (NAAQS), and support air pollution research. A variety of site types are needed to support these basic objectives, including the six general types identified in Appendix D.

1. Sites located to determine the **highest concentrations** expected to occur in the area covered by the network.
2. Sites located to measure typical **concentrations in areas of high population** density.
3. Sites located to determine the **impact of significant sources** or source categories on air quality.
4. Sites located to determine general **background concentration** levels.
5. Sites located to determine the extent of **regional pollutant transport** among populated areas; and in support of secondary standards.
6. Sites located to measure air pollution **impacts on visibility, vegetation damage**, or other welfare-based impacts.

The physical siting of an air monitoring station must conform to 40 CFR Part 58 and its location must achieve a spatial scale of representativeness that is consistent with the monitoring objective and site type. The spatial scale results from the physical location of the site with respect to the pollutant sources and categories. It estimates the size of the area surrounding the monitoring site that experiences uniform pollutant concentrations. The categories of spatial scale are:

1. Microscale-Defines the concentrations in air volumes associated with area dimensions ranging from several meters up to about 100 meters.
2. Middle scale-Defines the concentration typical of areas up to several city blocks in size with dimensions ranging from about 100 meters to 0.5 kilometer.
3. Neighborhood scale—Defines concentrations within some extended area of the city that has relatively uniform land use with dimensions in the 0.5 to 4.0 kilometers range. The neighborhood and urban scales listed below have the potential to overlap in applications that concern secondarily formed or homogeneously distributed air pollutants.
4. Urban scale-Defines concentrations within an area of city-like dimensions, on the order of 4 to 50 kilometers. Within a city, the geographic placement of sources may result in there being no single site that can be said to represent air quality on an urban scale.
5. Regional scale-Defines usually a rural area of reasonably homogeneous geography without large sources, and extends from tens to hundreds of kilometers.
6. National and global scales-These measurement scales represent concentrations characterizing the nation and the globe as a whole.

Table 1. Relationship Between Site Type and Scale of Representativeness

Site Type	Appropriate Spatial Scale
Highest Concentration	Micro, Middle, Neighborhood (sometimes urban)
Population Exposure	Middle, Neighborhood, Urban
Source Oriented	Micro, Middle, Neighborhood
General/Background	Neighborhood, Urban, Regional
Welfare-related Impacts	Urban, Regional

3.2 Oregon Criteria Pollutant Monitoring Network

Oregon DEQ operates the ambient monitoring network for the entire state with the exception of Lane County which is operated by the Lane Regional Air Protection Authority. Tribal lands are sovereign and do not fall under DEQ's jurisdiction. Several of the tribes operate their own monitoring networks. The USFS and BLM also conduct their own monitoring in some areas.

Oregon DEQ's and LRAPA's air quality monitoring networks measure ambient concentrations of the criteria pollutants - ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, particulate matter, lead. The map below shows the Oregon monitoring network. The table below lists the networks sites.

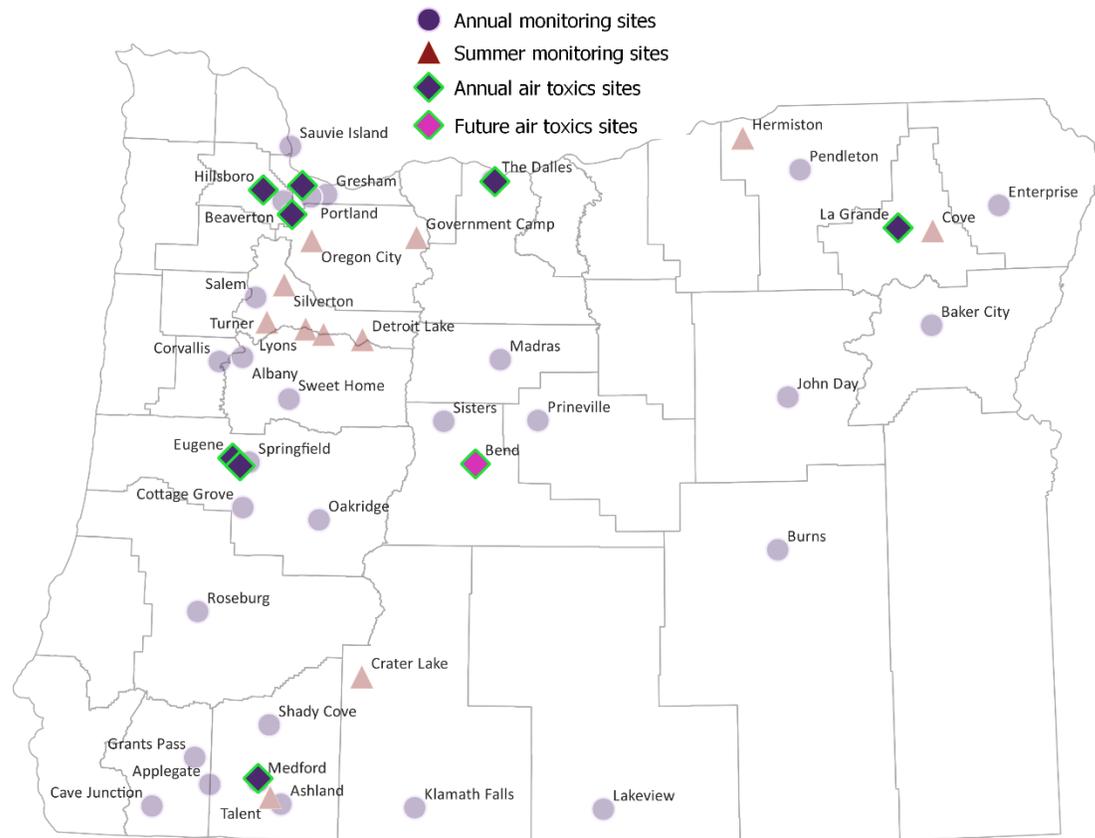


Figure 1. ODEQ and LRAPA Ambient Air Monitoring Network

Table 2. 2020 ODEQ and LRAPA Criteria Pollutant Ambient Air Monitoring Network

City	Address	Site Code	EPA#	SO2	CO	NO ₂	Ozone	PM2.5	PM2.5 Spec	PM10
Burns	Washington Street	BWS	410250003					x	x	
Cottage Grove	City Shops	CGC	410399004					x		
Eugene (Saginaw)	Pacific Hwy 99N	E99	410390059					x		x
	Amazon Park	EAP	410390060				x	x		x
	Delight Valley School Rd	SAG	410391007				x			
Grants Pass	Parkside School	GPP	410330114				x			
Hermiston	Municipal Airport	HMA	410591003				x			
Klamath Falls	Peterson School	KFP	410350004					x		x
La Grande	Hall and North Streets	LHN	410610123							x
Lakeview	Center & M Streets	LCM	410370001					x		x
Medford	Rapp Rd Talent	TAL	410290201				x			
	Welch & Jackson	MWJ	410292129					x		x
Oakridge	School St.	OAK	410392013					x		x
Portland	57 th & SE Lafayette	SEL	410510080	x	x	x	x	x	x	x
	Humboldt School	PHS	410512010							x
Tualatin	Tualatin – I-5	TBC	410670005		x	x	x	x		
Carus	Spangler Rd.	SPR	410050004				x			
Hillsboro	NE Grant St.	HHF	410670004					x		
Sauvie Island	NW SI	SIS	410090004				x			
Prineville	SE Court St.	PDP	410130100					x		
Salem (Turner)	Salem State Hosp.	SSH	410470041				x			
	Cascade Jr. High,	CJH	410470004				x			

Key:

Gasses:

SO2 = Sulfur dioxide CO = Carbon Monoxide NO2 = Nitrogen dioxide ozone

Particulates:

PM10 = Particulate Matter 10 microns in diameter or smaller

PM2.5 = Particulate Matter 2.5 microns in diameter or smaller

Spec = PM2.5 chemical speciation,

Lead = no criteria pollutant lead monitors

Meteorology monitors:

WSWD = Wind speed and direction,

Temp = Outdoor temperature at 2 meters,

DT = Delta (difference) in Temperature at 2 and 10 meters,

BP = Barometric Pressure, RH = Relative Humidity, SR = solar radiation

Other:

HAPS = Hazardous air pollutants or air toxics, includes lead. Not shown here.

3.2.1 Ozone Network

Oregon DEQ and LRAPA have 10 monitoring sites for ozone. Four in the Portland-Metro area (Southwest Clean Air Agency also has an additional one in Vancouver), two in Salem, Two in Eugene-Springfield, one in the Medford-Ashland area, and one in Hermiston. Maps of the network are shown below.

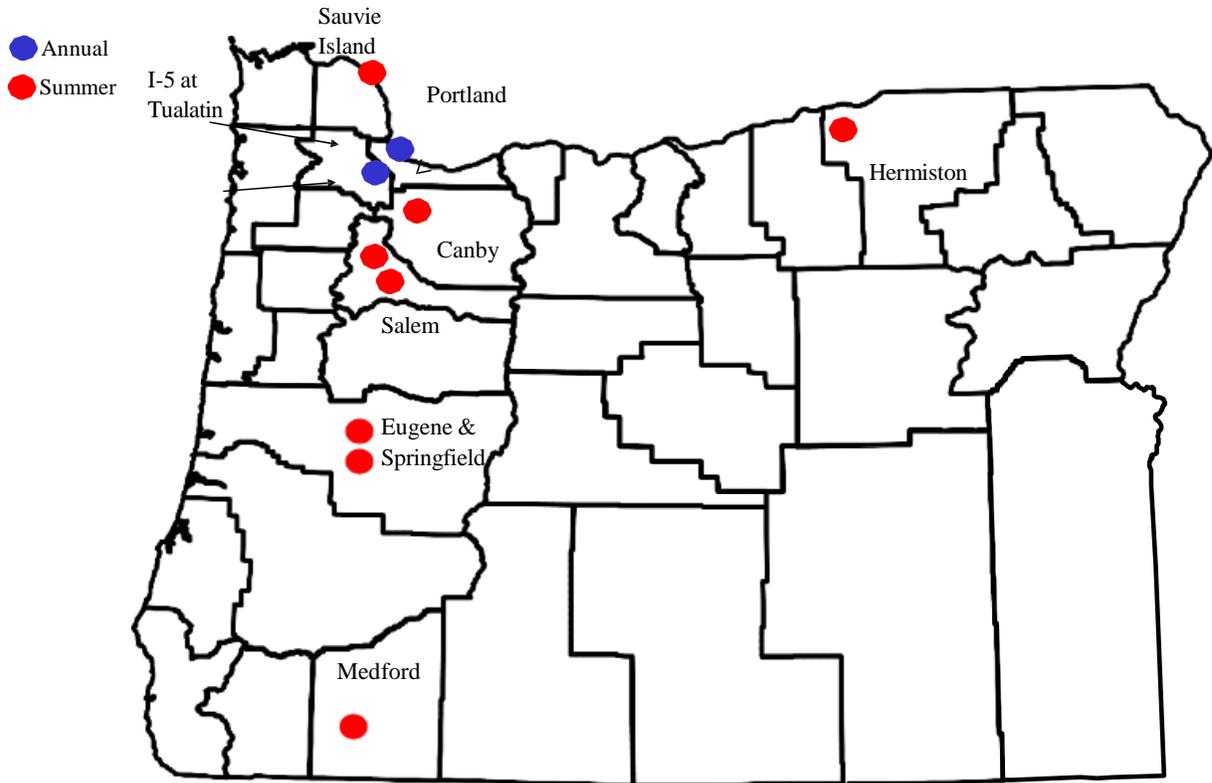


Figure 2. Ozone Monitoring Network

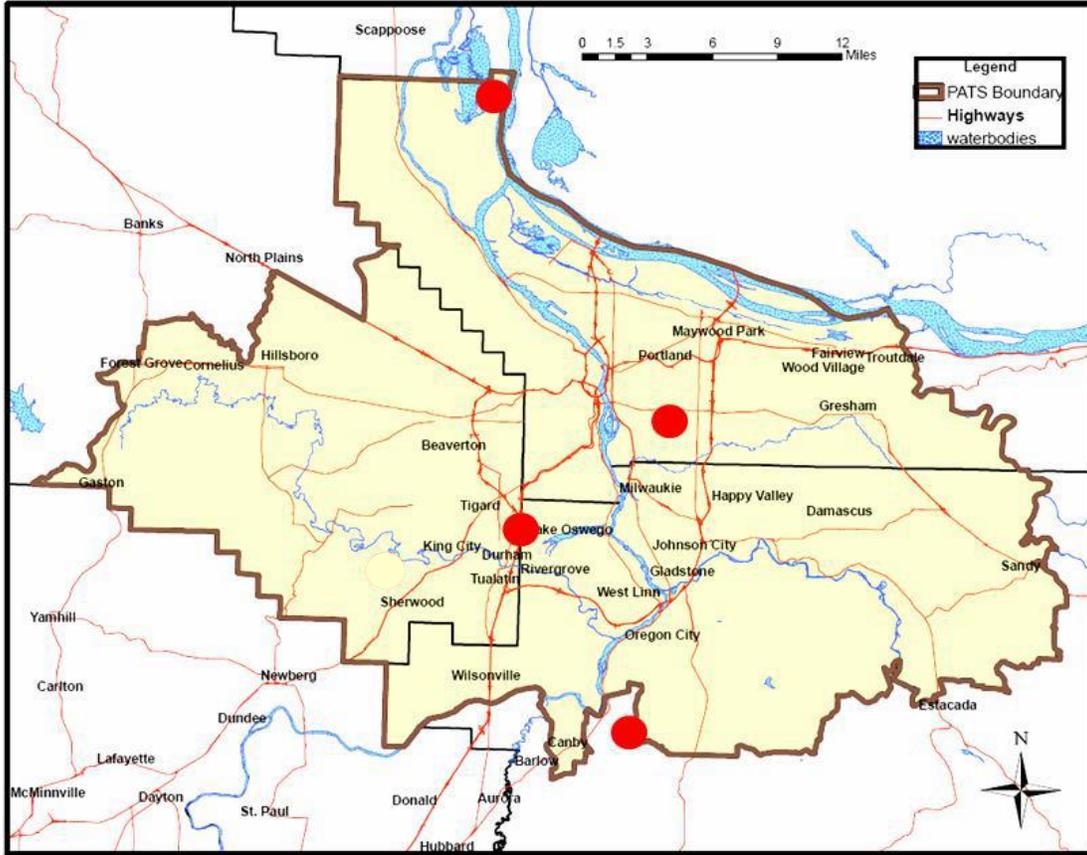


Figure 3. Portland- Metro Ozone Monitoring Sites.

Changes to the Ozone network in the past year

No changes

3.2.2 Nitrogen Dioxide Network

Oregon DEQ has two monitoring sites for NO₂ both in the Portland-Metro area. One is a community scale site located in SE Portland. The other is the near roadway site which measures vehicle contributions to NO₂. LRAPA has no monitoring sites.

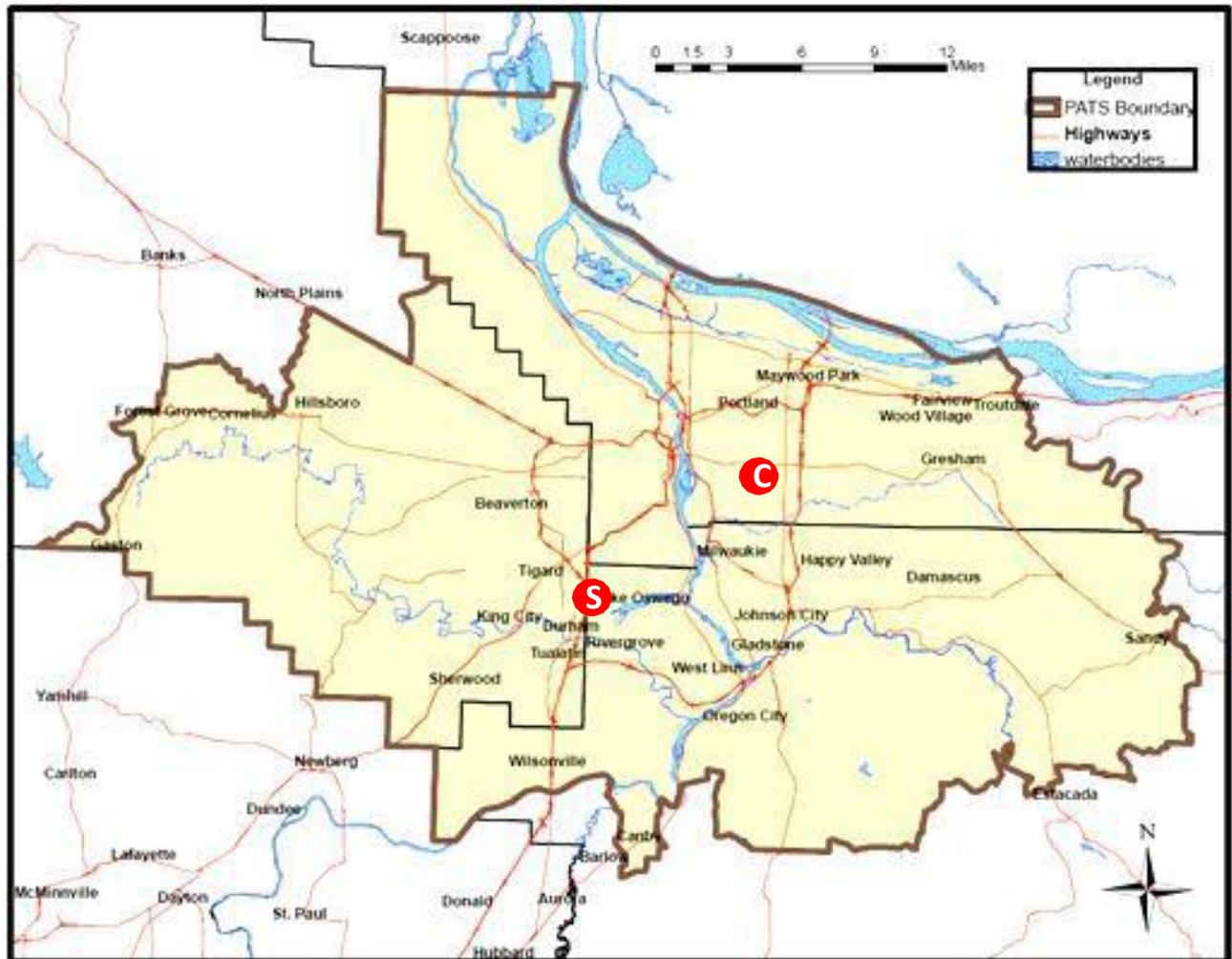


Figure 4. NO₂ Monitoring Network

S = Source monitor (measuring I-5)

C = Community monitor (Measuring in neighborhood)

Changes to the NO₂ network in the past year

No changes

3.2.3 Carbon Monoxide Network

Oregon DEQ has two monitoring sites for CO both in the Portland-Metro area. One is a community scale site located in SE Portland. The other is the near roadway site which measures vehicle contributions to CO.



Figure 5. CO Monitoring Network

S = Source monitor (measuring I-5)

C = Community monitor (Measuring in neighborhood)

Changes to the CO network in the past year

No changes

3.2.4 PM2.5 Network

Oregon DEQ and LRAPA have one NCORE and 14 SLAMS Federal Reference Monitoring (FRM) sites or Federal Equivalence Method (FEM) sites for PM2.5. Three in the Portland-Metro area, two in Eugene, and one each in Oakridge, Cottage Grove, Grants Pass, Medford, Klamath Falls, Lakeview, and Prineville. DEQ has two PM2.5 speciation sites, one in SE Portland (the trend site), and one in Burns.

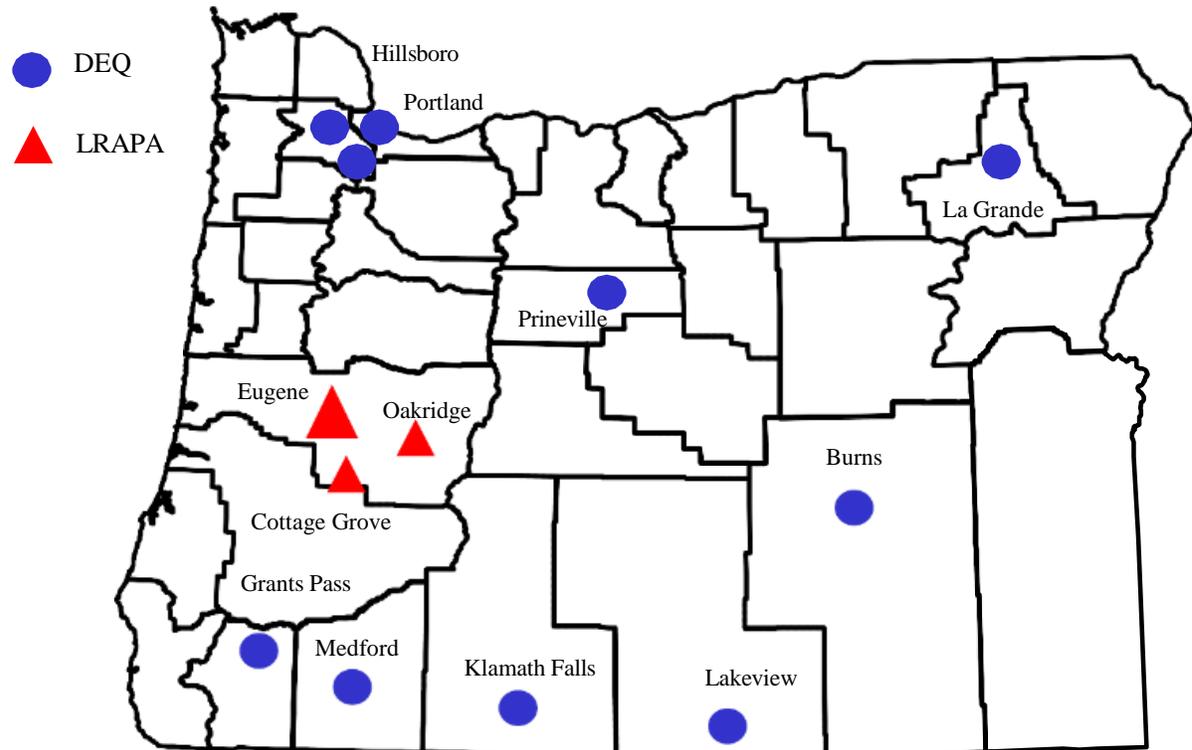


Figure 6. PM2.5 Monitoring Network

Changes to the PM2.5 network in the past year

DEQ added three continuous Federal Equivalence Method monitors to replace the filter sampler (FRMs) in Lakeview, Oakridge, and Prineville.

DEQ moved the Medford FRM monitor from Grant and Belmont to Welch and Jackson in 2018. DEQ formally requested that EPA combine the data from those two sites to get a design value for Medford for that year.

3.2.5 PM10 Network

Oregon DEQ and LRAPA have nine Federal Reference monitoring sites for PM10. Two in the Portland-Metro area, two in Eugene-Springfield, and one each in La Grande, Lakeview, Klamath Falls, Medford, and Oakridge.

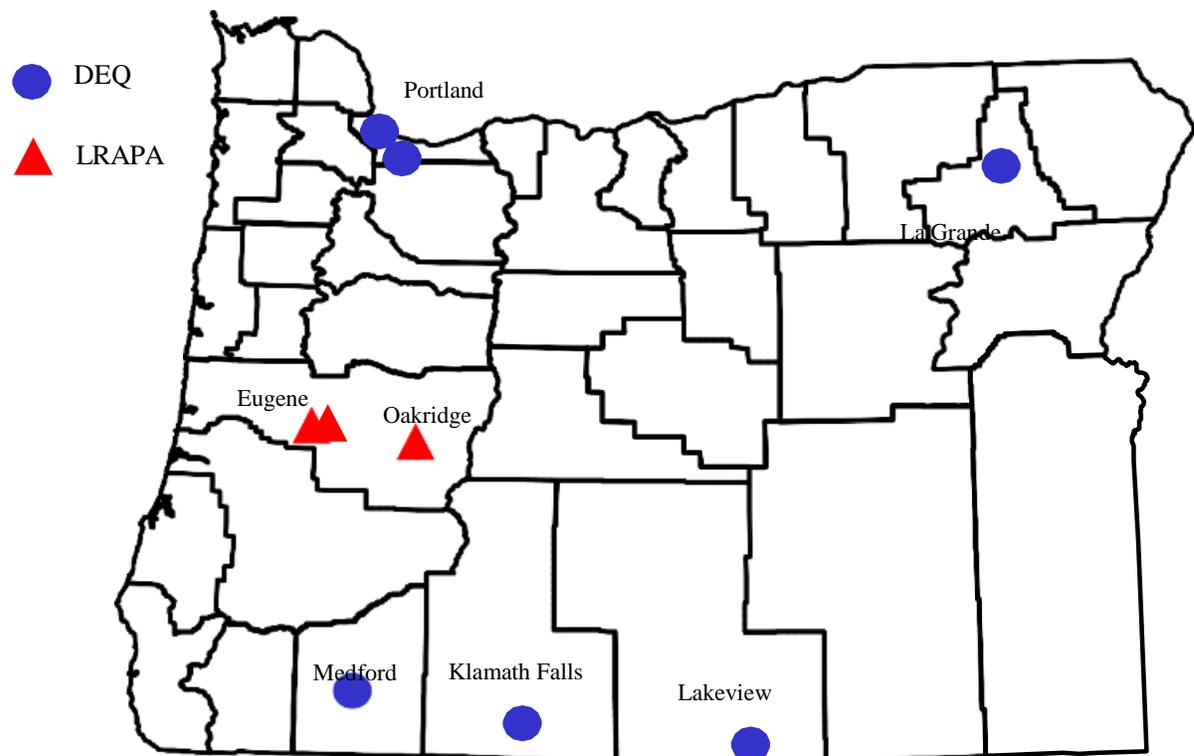


Figure 7. PM10 Monitoring Network

Changes to the PM10 network in the past year

Hillsboro and Tualatin's PM10 analysis were discontinued as part of the air toxics programs. Only metals are analyzed.

3.2.6 PM10-2.5 Network

Oregon DEQ has one PM10-2.5 Federal Reference monitoring site, and it is at the Portland NCORE site.

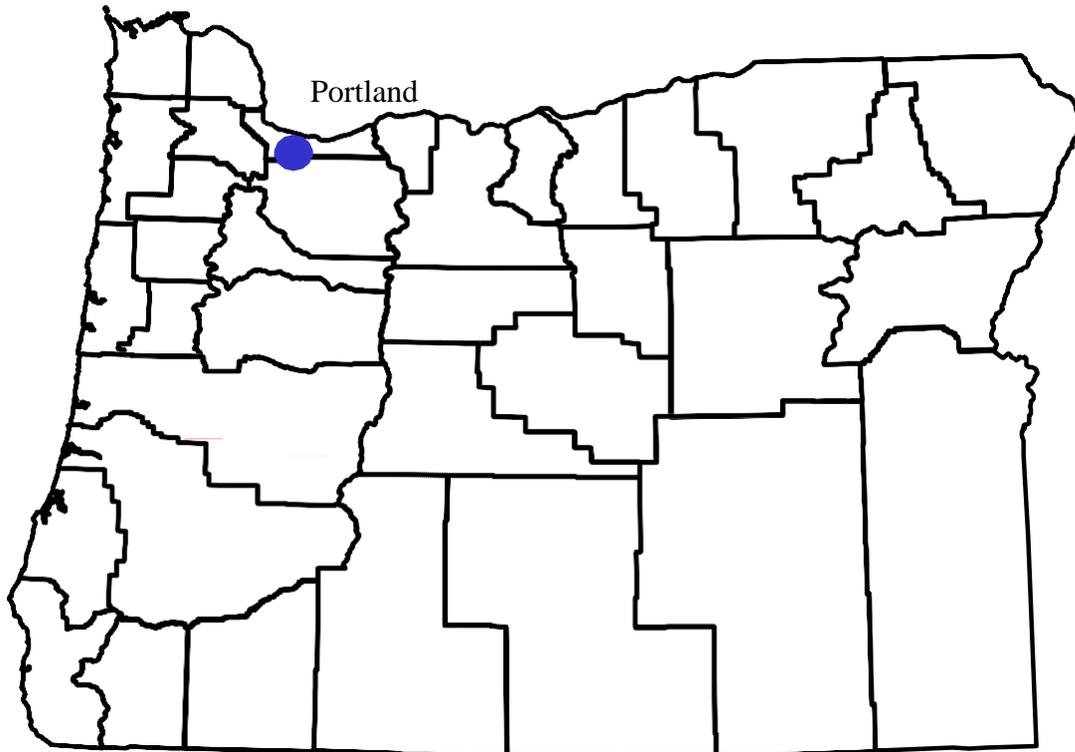


Figure 8. PM10-PM2.5 Monitoring Network

Changes to the PM10-2.5 network in the past year: No changes.

3.2.7 Criteria Pollutant Lead Network

Oregon is required to operate a TSP lead monitor outside Cascade Rolling Mills in McMinnville because it has a Plant Site Emission Limit over 0.5 tons per year. In 2018, EPA renewed a waiver to discontinue monitoring because the monitored values were well below the NAAQS.

Changes to the Criteria Pollutant Lead network in the past year: No changes.

3.2.8 Sulfur Dioxide (SO₂) Network

Oregon has one SO₂ community monitoring site at the NCore site. There are no sources in Oregon that require SO₂ monitoring at this time. Oregon has one point source that meets the threshold that requires monitoring or modeling. That is the PGE Boardman coal power plant. The coal plant will shut down in 2020 but the EPA requires monitoring or modeling to be performed from 2017 to 2020. DEQ will opt to model for this period.

Changes to the SO₂ network in the past year:
No changes

3.3 PM2.5 Air Quality Index Network

Oregon has a network of PM2.5 real time monitors that are used for hourly reporting of air quality for the Air Quality Index (AQI). The AQI is used by health officials, forestry managers, and the public to get timely information about air quality health levels. The data is also sent to EPA's AIRNow AQI web page which combines all the states and tribal AQIs in one place. The AQI data is also loaded to the Oregon Smoke Blog which provides emergency information during forest fire smoke inundations.

Oregon and LRAPA have 44 annual PM2.5 AQI sites and an additional 11 summer AQI sites. DEQ partners with other government agencies to provide AQI information and share resources. Approximately 10 of these sites have been funded by the USFS and BLM. Five of these summer sites are funded by the Oregon Department of Agriculture for field burning. DEQ does not need to request EPA approval for changes to non-EPA funded AQI sites but will submit any changes in the Annual Network Plan for public comment and input.

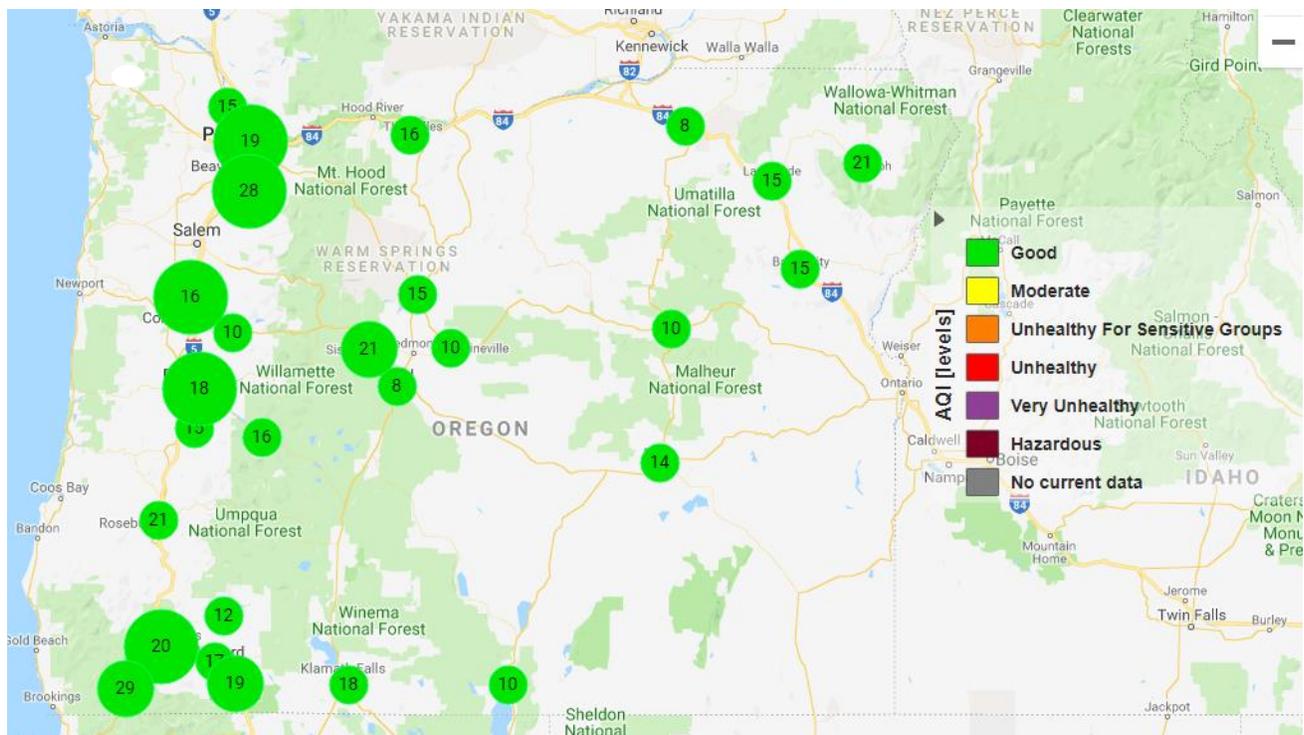


Figure 9. PM2.5 AQI Network

Table 3. AQI site list

City	Address	Site Code	EPA#	Ozone	PM _{2.5}	
Albany	Calapooia School	ACS	410430009		n	
Applegate	Provolt	PSO	410330011		n	
Bend La Pine	Bend Pump Station	BPS	410170120		n	
	Bend Hiigh School	BHS	41017		s	
	Road Department	BRD	410140121			Meteorology only
	Fire Department	LFD	tbd		s	Planned start date – Summer 2020
Baker City	Forest Service	BFS	410010004		n	
Brookings	Forestry Center	tbd	tbd		s	Planned start date – Summer 2020
Burns	Washington St.	BWS	410250003		n	
Cave Junction	USFS Station	CJFS	410330036		n	
Coos Bay	Marshfield HS	CMS	tbd		s	
Corvallis	North Corvallis	CCB	410030013		n	
	South Corvallis	CEL	tbd		s	Planned start date – Fall 2020
Cottage Grove	City Shops	CGC	410399004		n	
Crater Lake	Rim	CLP	410351001		n	Summer only
Dallas	Middle School	DMS	tbd		s	Planned start date – Summer 2020
Detroit Lake	USFS Station	DFS	410470123		s	Summer only
Eugene Springfield (Saginaw)	Pacific Hwy99N	E99	410390059		n	
	Amazon Park	EAP	410390060	x	n	
	Wilkes Drive	EWD	410390101		n	
	City Hall	SCH	410391009		n	
	Delight Vly SchRd	SAG	410391007	x		
Enterprise	Forest Service	EFS	410630001		n	
Estacada	tbd				s	Site not determined yet
Florence	Forestry	FFD	410390100		n	
Grants Pass	Parkside School	GPP	410330114		n	
Hermiston	Municipal Airport	HMA	410591003	x	s	
Hood River	tbd				s	Site not determined yet
John Day	Davidson St.	JDD	410230002		n	
Klamath Falls Chiloquin	Peterson School	KFP	410350004		n	
	West Side	Chi	tbd		s	
La Grande Cove	Hall and North	LHN	410610123		n	
	City Hall	CCH	410610120		n	Summer only
Lakeview	Center & M Sts.	LCM	410370001		n	
Lyons	Maryilynn Sch	LMS	410432003		n	Summer only
Madras	Westside School	MWS	410310007		n	
Medford Ashland Central Point Shady Cove	Rapp Rd Talent	TAL	410290201	x	s	
	Rossanley Dr.	MTV	410291002			Meteorology only
	Welch & Jackson	MWJ	410292129		n	
	Fire Department	AFD	410290203		n	
	tbd				s	Site not determined yet
Shady Cove	School	SCS	410290019		n	

City	Address	Site Code	EPA#	Ozone	PM2.5 Est		
Mill City	High School	MCS	410430104		s	Summer only	
Mt. Hood	Multopor	MUL	410050102		s	Summer only	
Newport	tbd				s	Site not determined yet	
Oakridge	School St.	OAK	410392013		n		
Ontario	tbd				s	Site not determined yet	
Pendleton	SW Marshall Pl	PMC	410590121		n		
Portland	57 th & SE Lafayette	SEL	410510080	x	n		
	Humboldt Sch	PHS	410512010		s		
	Jefferson High Sch	PJH	410511191			Meteorology only	
	Cully	PNS	410512011		n		
	Beaverton	Highland Prk Sch.	BHP	410670111		n	
	Carus	Spangler Rd.	SPR	410050004	x	n	
	Forest Grove	Pacific University	FGP	tbd		s	
	Gladstone	Gladstone HS	GHS	tbd		s	Pending contract approval
	Gresham	Centennial HS	GCH	tbd		s	Planned start date – Summer 2020
	Hillsboro	NE Grant St.	HHF	410670004		n	
Sauvie Island	NW SI	SIS	410090004	x	n		
Tigard	tbd				s	Site not determined yet	
Tualatin	Tualatin – I-5	TBC	410670005	x	n		
Wilsonville	tbd				s	Site not determined yet	
Prineville	SE Court St.	PDP	410130100		n		
Redmond	Redmond High Sch	RHS	41017		s		
Roseburg	NW Garden Valley	RGV	410190002		n		
	Fire Department	RFD	tbd		s		
Salem (Turner)	Salem State Hosp.	SSH	410470041	x	n		
	Cascade Jr. High,	CJH	410470004	x	s	Summer only	
South Salem	tbd				s	Site not determined yet	
East Salem	tbd				s	Site not determined yet	
Silverton	James & Western Streets	SJW	410470007		n	Summer only	
Sisters	USFS Office	SFS	410170004		n		
SweetHome	Fire Dept	SFD	410432002		n		
The Dalles	Cherry Heights	TDC	410650007		n		
Tillamook	tbd				s	Site not determined yet	
Woodburn	tbd				s	Site not determined yet	

Key:

Gasses:

Sulfur dioxide, carbon Monoxide, and nitrogen dioxide are collected at SEL and TBC.

For the PM2.5 estimate, S = DEQ's SensOR, n = nephelometer. See DEQ's Air Quality Monitoring Web page for more detail.

Changes to the PM2.5 AQI Network in the past year:

DEQ added 15 of 30 new PM2.5 estimate sites to the AQI. The 15 locations are illustrated in Figure **. This information is available on the DEQ Air Quality Monitoring webpage.

3.4 Meteorology Network

Oregon DEQ and LRAPA operate a meteorology (met) network in support of the criteria and air toxics pollutant networks. The met network provides modelers, forecasters, and local health officials with information on origin of pollutant emissions and pollutant movement. DEQ does not need to request EPA approval for changes to meteorology network sites but will submit any changes in the Annual Network Plan for public comment and input.

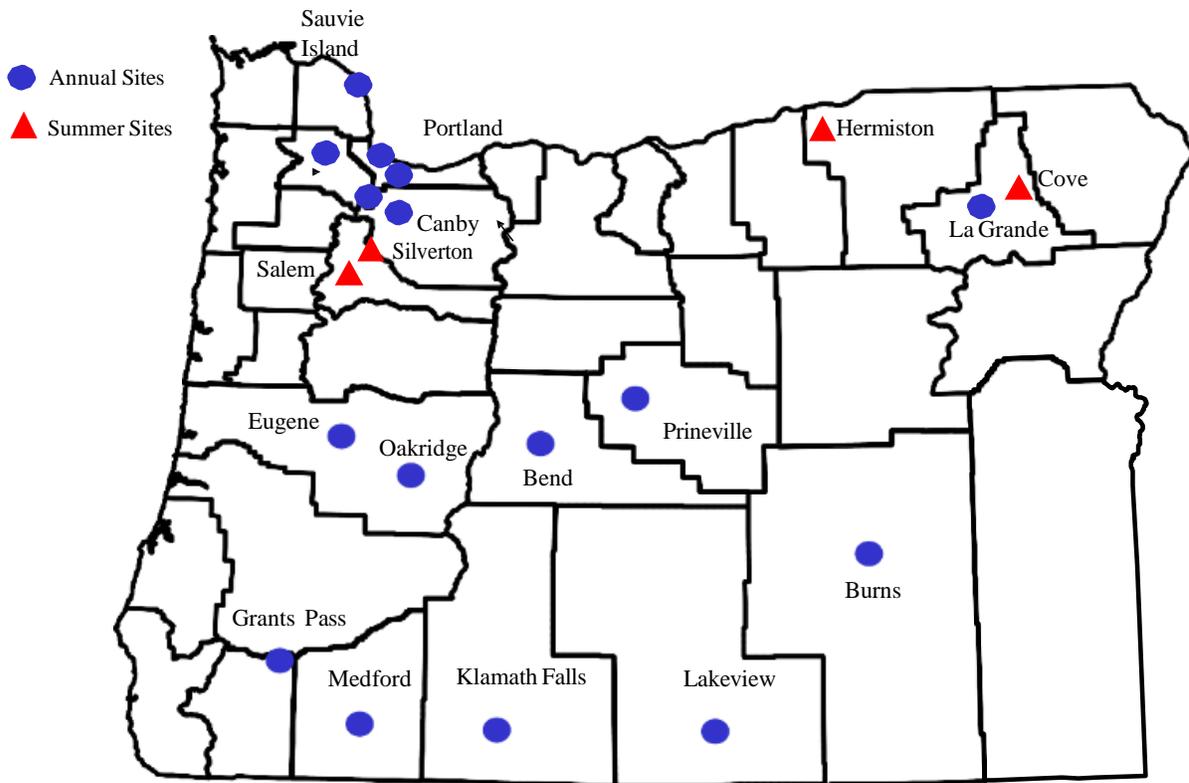


Figure 10. Meteorology Network

Table 4. Meteorology Network

City	Address	Site Code	EPA#	Wind	Temp	Delta T	RH	BP	SR
Bend	Road Department	BRD	410140121	x	x		x	x	x
Burns	Washington St.	BWS	410250003	x	x			x	
Eugene	Hwy 99	E99	410390059	x					
	Wilkes Drive	EWD	410390101	x	x			x	
Springfield	City Hall	SCH	410391009	x					
Florence	Forestry Department	FFD	410390100	x	x		x	x	
Grants Pass	Parkside School	GPP	410330114	x	x			x	
Hermiston	Municipal Airport	HMA	410591003	x					
Klamath Falls	Peterson School	KFP	410350004	x	x	x	x	x	
La Grande	Hall and North	LHN	410610123	x	x		x	x	
Cove	City Hall	CCH	410610120	x					
Lakeview	Center & M Sts.	LCM	410370001	x	x			x	
Medford	Rossanley Dr.	MTV	410291002	x	x	x	x	x	x
Oakridge	School St.	OAK	410392013	x	x			x	
Portland	57 th & SE Lafayette	SEL	410510080	x	x		x	x	x
	Jefferson High School	PJH	410511191	x					
	Cully	PNS	410512011	x					
Carus	Spangler Rd.	SPR	410050004	x	x			x	
Hillsboro	NE Grant St.	HHF	410670004	x					
Sauvie Island	NW SI	SIS	410090004	x	x				
Tualatin	Tualatin – I-5	TBC	410670005	x	x		x		
Prineville	SE Court St.	PDP	410130100	x	x		x	x	x
Salem-Turner	Cascade Jr. High,	CJH	410470004	x					
Silverton	James & Western Streets	SJW	410470007	x					

Met:

Wind = Wind speed and direction,

Temp = Outdoor temperature at 2 meters,

DT = Delta (difference) in Temperature at 2 and 10 meters,

BP = Barometric Pressure, RH = Relative Humidity, SR = solar radiation

Changes to the Meteorological Network in the past year: No changes

4. Planned Changes to Network

All major modifications to the ambient air quality monitoring network required by EPA are submitted to the regional administrator for review and approval in the network assessment. Changes that do not require EPA approval are also mentioned for informational purposes.

4.1 Criteria Pollutant Changes

PM2.5

The Klamath Falls, Prineville, and Lakeview sites are equipped with the Teledyne T640x continuous FEM method for continuous monitoring. These may be switched to the BAM 1022 if it provides better accuracy compared to the FRM. Burns is using a BAM 1020 FEM and will change to the BAM 1022 FEM. Medford, Hillsboro, Tualatin, and Portland will change to the T640x FEMs. Oakridge has changed over to a BAM 1022 FEM. FRMs filter samplers will be phased out in these communities.

Budget constraints may require reduced monitoring in areas that are deemed to be lower priorities. This would include discontinuing FRM or FEM monitoring in Grants Pass which is well below the NAAQS when wildfires smoke impacts are excluded. The area would retain the nephelometer used for the Air Quality Index.

PM2.5 Speciation

The non-trend site speciation in Burns will be discontinued. All the PM2.5 Non-attainment areas and areas of concern have had speciation monitoring and all monitoring except the EPA trend site (NCore site) will be discontinued until further need. DEQ will recommend to EPA that the trend site sampling schedule be reduced from every third day to every sixth day in order to save on cost.

PM10

DEQ proposes reduced monitoring in areas that are deemed to be lower priorities. This would include areas where the PM10 maintenance plans require monitoring but the levels have been 1/3 of the NAAQS for more than a decade when wildfire data are excluded. The nephelometer or PM2.5 FEM will be used as a surrogate to estimate PM10. This includes La Grande, Klamath Falls, Lakeview, and Medford. Klamath Falls and Grants Pass have already used PM2.5 as a surrogate for many years. Klamath Falls just had a PM10 monitor reinstalled in 2019.

Photochemical Assessment Monitoring Stations (PAMS)

Based on 40 CFR part 58, Appendix D, State air monitoring agencies are required to begin making PAMS measurements at their NCore location(s) with a USEPA extension to the start date of June 1, 2021. This will required the addition of NOy, near real time VOC, aldehyde, and mixing heights monitoring. DEQ had planned to begin making PAMS measurements at the NCore site (Portland SE Lafayette, 51-051-0080) in 2021. Budget constraints may delay full operation of all PAMS equipment.

Appendix A. Minimum Monitoring Requirements

DEQ and LRAPA meet the minimum monitoring requirements for all criteria pollutants measured as established in 40 CFR 58. The tables in Appendix A list the criteria used to determine compliance with federal regulations.

Table A. 1. Minimum Monitoring Requirements for NCORE Site.

NCORE Site: SE Lafayette (SEL), AQS# 41-051-0080, Address 57 th Avenue and SE Lafayette St., Portland, OR MSA – Portland-Vancouver, OR-WA (#6440) Counties represented – (OR) Multnomah, Clackamas, Washington, (WA) Clark MSA Population (2016)* - 2,424,955								
Pollutant	Std Type	Std	DV	Units	Years	# of Monitors		
						Minimum required	Active	Needed
PM2.5	Daily	35	25	µg/m ³	17-19	1	1	0
	Annual	12	7.3	µg/m ³	17-19			
PM2.5 Speciation	N/A	-	-	-	-	1	1	0
PM2.5 Continuous estimate	N/A	-	-	-	-	0	1	0
PM10	Daily	150	0 exceedences		17-19	1	1	0
PM10-2.5	N/A	-	-	-	-	1	1	0
Ozone	8 hr Ave	70	64	ppb	17-19	1	1	0
NO2	1 hour	100	35	ppb	17-19	1	1	0
	Annual	53	8	ppb	17-19			
NOx (substituted for NOy - EPA waiver)	N/A	-	-	-	-	1	1	0
Trace SO2	1 hour	75	3	ppb	17-19	1	1	0
Trace CO	8 hour	9 ppm	0 exceedences		17-19	1	1	0
Wind Direction	N/A	-	-	-	-	1	1	0
Wind Speed	N/A	-	-	-	-	1	1	0
Relative Humidity	N/A	-	-	-	-	1	1	0
Solar Radiation	N/A	-	-	-	-	0	0	0
Barometric Press	N/A	-	-	-	-	0	1	0
Outdoor Temp	N/A	-	-	-	-	1	1	0
Delta Temp	N/A	-	-	-	-	0	0	0

*MSA Population (2016) from US Census Bureau Estimate

Table A. 2. Ozone Minimum Monitoring Requirements

MSA	County	Population 2016 estimate	Design Value (ppb)	Site name	Season	Years	# of Monitors		
							Minimum required	Active	Needed
Portland-Vancouver- Beaverton, OR-WA (38900)	Multnomah, Clackamas, Washington, Clark (WA)	2,453,168	72 ^a	Carus (41-005-0004)	May-Sept	17-19	2	4 in OR, 1 in WA	0
Salem (41420)	Marion	424,982	66	Cascade Sch. Turner (41-047-0004)	May-Sept	17-19	2	2	0
Eugene-Springfield (21660)	Lane	374,748	62	Saginaw (41-039-1007)	May-Sept	17-19	2	2	0
City of The Dalles (17180)	Wasco	26,437	59 ^b	Cherry Heights (41-065-0007)	May-Sept	16-18	0	0	0
Medford (32780)	Jackson	217,479	71	Talent (41-029-0201)	May-Sept	17-19	0	1	0
Pendleton-Hermiston (37820)	Umatilla	88,151	64 ^b	Airport (41-059-1003)	May-Sept	17-19	0	1	0
Albany-Lebanon (10540)	Linn	125,047	-	-	-	-	0	0	0
Bend-Redmond (13460)	Deschutes	186,875	-	-	-	-	0	0	0
Corvallis (18700)	Benton	90,951	-	-	-	-	0	0	0
Grants Pass (24420)	Josephine	86,352	-	-	-	-	0	0	0

a. 2017 and 2018 Forest Fires caused the DV to go over the NAAQS

b. Data in July and August, 2018 was downgraded and was not included in this design value.

Table A. 3. Carbon Monoxide Minimum Monitoring Requirements:

MSA (Maintenance areas)	County	Population 2016 estimate	Standard Exceeded more than once per year	Site name	Last Year	# of Monitors		
						Minimum required	Active	needed
Portland-Vancouver- Beaverton, OR-WA (38900)	Multnomah, Clackamas, Washington, Clark (WA)	2,453,168	No	SE Lafayette, Portland (41-051-0080)	2018	2	2	0
Salem (41420)	Marion	424,982	No	-	2005	0	0	0
Medford (32780)	Jackson	217,479	No	Monitor CO with modeling	2009	0	0	0
Klamath Falls (28900)	Klamath	66,935	No	-	2004	0	0	0
Grants Pass (24420)	Josephine	86,352	No	-	2005	0	0	0

NO2 Minimum Monitoring Requirements:

EPA requires NO2 near roadway monitoring in CBSAs above 500,000. The monitoring is to be next to a freeway at a location with the highest annual average daily traffic and highest heavy duty diesel traffic. Portland-Vancouver is the only CBSA in Oregon required to have near road NO2 monitoring. In addition, EPA requires one neighborhood or larger spatial scale monitoring in CBSA's above one million. The Portland-Vancouver area is the only CBSA in Oregon required to have community scale monitoring. The NCORE site is required to have NO2, NO, NOx, and NOy monitoring. The NCORE site is in Portland and doubles as the community scale site for NO2. EPA granted a waiver under CFR40 Part 58 Appendix D, Section 3 (b.1) to allow NOx to substitute for NOy because DEQ showed there was minimal difference between the two. The table below shows the current monitoring status.

Table A. 4. NO2, NO, NOx Minimum Monitoring Requirements:

MSA	County	Population 2016 estimate	Design Value (ppb)	% of Std	Site name	Season/ Frequency	Years	# of Monitors		
								Minimum required	Active	needed
Portland- Vancouver- Beaverton, OR-WA (38900)	Multnomah, Clackamas, Washington, Clark (WA)	2,453,168	1hr = 35ppb Annual= 8.3 ppb	1hr = 35% Annual= 16%	Portland, SE Lafayette (41-005-0080)	Annual, Hourly	17-19	1	1	0
			1hr = 36ppb Annual= 11.8ppb	1hr = 36% Annual= 22%	Tualatin Bradbury Ct. (Near Roadway site) (41-067-0005)	Annual, Hourly	17-19	1	1	0

SO2 Minimum Monitoring Requirements:

EPA devised the Population Weighted Emissions Index to determine where SO2 monitoring is needed. This combines population and SO2 emission estimates. Oregon only had one MSA with a PWEI which required monitoring, Portland - Vancouver. The location measures population exposure in the CBSA which meets the minimum spatial siting requirement. The NCORE site also requires trace SO2 monitoring. The NCORE site is also the PWEI site and operates with a trace SO2 monitor meeting both criteria. The table below shows the current monitoring status.

Table A. 5. SO2 Minimum Monitoring Requirements:

MSA	County	Population 2016 estimate	Design Value (ppb)	% of Std	Site name	Season/ Frequency	Years	# of Monitors		
								Minimum required	Active	needed
Portland- Vancouver- Beaverton, OR-WA (38900)	Multnomah, Clackamas, Washington, Clark (WA)	2,453,168	3	4	Portland, SE Lafayette (41-005- 0080)	Annual, Hourly	17-19	1	1	0

Lead: Minimum Monitoring Requirements:

EPA requires TSP lead monitoring at any source with an annual plant site emission limit of over 1/2 ton/year. In Oregon only one source meets this criterion, Cascade Rolling Mills in McMinnville. DEQ did fence line monitoring at Cascade Rolling Mills for three years (2010-2012) and determined the levels were less than 1/2 the standard. With these low values and other resource needs, DEQ asked for and received a waiver under CFR40 Part 58 Appendix D, Section 4.5(i) from EPA to suspend monitoring. This waiver was renewed in 2018.

EPA requires monitoring at airports with emission estimates greater than 1 ton/yr CFR40 Part 58 Appendix D, Section 4.5(iii). No airports in Oregon have estimated lead emissions of over 1 ton/yr. EPA is working with the FAA to find a safe substitute for lead in aviation fuel so all airports no matter how small will be free from lead in aviation fuel.

Table A. 6. Lead Minimum Monitoring Requirements:

MSA	County	Population 2016 estimate	Design Value ₃ $\mu\text{g}/\text{m}^3$	% of Std	Site name	Season/Frequency	Years	# of Monitors		
								Minimum required	Active	needed
McMinnville ¹	Yamhill	32,510	0.045	30%	McMinnville Lead (41-071-1702)	1/6	10-12	0	0	0

1. EPA granted a waiver to discontinue McMinnville lead because its three year average was less than 1/2 the NAAQS and the operating funds were needed elsewhere. DEQ measures lead in North Portland, Hillsboro, Tualatin, Eugene, Medford, and Bend air toxics trends network. None of these data are used for comparison to the NAAQS.

PM10 Minimum Monitoring Requirements:

PM10 has dropped significantly since the 1980s when numerous Oregon communities were in non-attainment. These communities are now all under maintenance plans and many have EPA waivers to discontinue PM10 and use PM2.5 as a surrogate. This was done because PM10 is mostly comprised of PM2.5 and the PM10 levels are far below the standard. Continuous PM10 samplers will be placed at these sites in the future.

Table A. 7. PM10 Minimum Monitoring Requirements:

MSA	County	Population 2016 estimate	Exceedence/yr	Site name	Season/Frequency	Year	# of Monitors		
							Minimum required	Active	needed
Portland-Vancouver-Beaverton, OR-WA (38900)	Multnomah, Clackamas, Washington, Clark (WA)	2,453,168	0	SE Lafayette (41-005-0080) Humboldt (41-051-2010)	Annual. 1/3 at NCORE & 1/6 other sites	17-19	2-4	2	0
Eugene-Springfield (21660)	Lane	374,748	1.0 ^a	Eugene Hwy 99 (41-039-0059) Oakridge (41-039-2013) Eugene Amazon Prk (41-039-0060)	Annual 1/1 1/1 1/6	17-19	3	3	0
La Grande (29260)	Union	16,910	0	Hall & North Sts. (41-067-0123)	Annual, 1/6	17-19	1	1	0
Medford (32780)	Jackson	217,479	2.0 ^a	Welch & Jackson (41-029-2129)	Annual, 1/6	17-19	1	1	0
Grants Pass (24420) ^b	Josephine	86,352	1 ^{ab}	Parkside School (41-033-0114)	PM2.5 as surrogate	17-19	1	0	0
Klamath Falls (28900)	Klamath	66,935	6.2 ^{abc}	Klamath Falls Petersen Sch. (41-035-0004)	PM2.5 as Surrogate	17-19	1	0	0
Lakeview (00000)	Lake	8,015	- ^c	Lakeview (41-037-0001)	Annual 1/6	-	1	0	1

a. DV includes forest fire data that impact the number of days over the NAAQS. If this has regulatory significance in the future, DEQ will request exceptional event concurrence from EPA. The non- forest fire DVs are 0 exceedences/yr for all sites.

b. PM2.5 is used as a surrogate for PM10.

c. PM10 sampling restarted or to be restarted in 2019.

PM2.5 Minimum Monitoring Requirements:

Table A. 8. PM2.5 (FRM) Minimum Monitoring Requirements:

MSA	County	Population 2016 estimate	Design Value ($\mu\text{g}/\text{m}^3$) Daily Std = 35.5 Annual = 12.1		Site name	Season/ Frequency	Years	# of Monitors		
			Excluding wildfire days	Including wildfire days				Minimum required	Active	needed
Portland- Vancouver- Beaverton, OR- WA (38900)	Multnomah, Clackamas, Washington, Clark (WA)	2,453,168	22 7.1	29 7.6	Hillsboro Hare Field (41-067-0004)	Annual 1/3	17-19	3	3	0
Eugene-Springfield (21660)	Lane	374,748	26 7.9	37 9.2	Hwy 99 (41-039-0059)	Annual 1/3	17-19	1	2	0
			34 9.0	35 ^a 10.4	Oakridge (41-039-2013)	Annual 1/3	17-19	0	1	0
			21 7.2	27 8.0	Cottage Grove (41-039-9004)	Annual 1/3	17-19	0	1	0
Medford (32780)	Jackson	217,479	26 8.7	105 ^a 13.5 ^a	Grant & Belmont (41-029-0133) Welch & Jackson (41-029-2129)	Annual 1/3	17-19	1	1	0
Grants Pass (24420)	Josephine	86,352	23 8.4	68 ^a 11.6	Parkside Sch. (41-033-0114)	Annual 1/6	17-19	0	1	0
Klamath Falls (28900)	Klamath	66,935	31 9.7	35ab 13.6	Petersen Sch. (41-035-0004)	Annual 1/1	17-19	0	1	0
Lakeview (00000)	Lake	8,015	37 7.4	49 10.0	Lakeview (41-037-0001)	Annual 1/3	17-19	0	1	0
Burns-Hines (00000)	Harney	4,390	31 9.7	36 ^a 10.4	Washington Park (41-025-0003)	Annual 1/1	17-19	0	1	0
Prineville (39260)	Crook	23,123	29 1	39 ^a 9.3	Davidson Park (41-013-0100)	Annual 1/3	17-19	0	1	0

- a. DV includes forest fire data that impact the 98 percentile. If this has regulatory significance in the future, DEQ will request exceptional event concurrence from EPA.
- b. DEQ is requesting exceptional event concurrence from EPA for forest fire impacts in 2018 for Klamath Falls.

PM2.5 for AQI (Non-FRM) site information

AQI (Non-FRM – Informational data). This monitoring allows DEQ to monitor the rest of the state. If a design value is near or above the NAAQS, DEQ considers placing a FRM sampler at the site for comparison to the NAAQS.

Table A. 9. PM2.5 for AQI (Non-FRM) site information

MSA	County	2016 MSA Population	Design Value ($\mu\text{g}/\text{m}^3$) Daily Std = 35.5 Annual = 12.1		Site name	Season/ Frequency	Years	# of Monitors		
			Excluding wildfire days	Including wildfire days				required	Active	needed
Salem (41420)	Marion	424,982	22 6.4	29 6.9	State Hospital (41-047-0041)	Annual, Hourly	17-19	0	1	0
Bend-Redmond (13460)	Deschutes	186,875	17 5.6	43 7.5	Bend Pump Station (41-017-0120)	Annual, Hourly	17-19	0	1	0
			20 5.5	86 9.1	Sisters USFS (41-017-0004)	Annual, Hourly	17-19	0	1	0
Albany-Lebanon (10540)	Linn	125,047	22 5.8	25 6.4	Albany (41-043-0009)	Annual, Hourly	17-19	0	1	0
			23 7.5	29 8.2	Sweet Home FD (41-043-2002)	Annual, Hourly	17-19	0	1	0
Corvallis (18700)	Benton	90,951	18 5.3	22 5.7	Corvallis FD 3 (41-003-0013)	Annual, Hourly	17-19	0	1	0
Roseburg (40700)	Douglas	109,405	21 6.9	27 7.6	Forest Service Off (41-019-0002)	Annual, Hourly	17-19	0	1	0
The Dalles (17180)	Wasco	26,437	23 7.1	37 8.5	Cherry Heights (41-065-0007)	Annual, Hourly	17-19	0	1	0
La Grande (29260)	Union	26,222	18 6.2	28 7.1	Hall & North (41-061-0123)	Annual, Hourly	17-19	0	1	0
Baker City - Ontario (36620)	Baker	9,890	19 6.9	24 7.5	Baker City USFS (41-001-0003)	Annual, Hourly	17-19	0	1	0
Enterprise (00000)	Wallowa	1,985	18 6.4	28 7.3	Forest Service Off (41-063-0001)	Annual, Hourly	17-19	0	1	0
Cave Junction –Grant Pass (24420)	Josephine	86,352	25 7.9	63 10.8	Cave Junction USFS (41-033-0036)	Annual, Hourly	17-19	0	1	0
John Day (00000)	Grant	2,440	27 9.0	29 9.5	Forest Service Off (41-023-0002)	Annual, Hourly	17-19	0	1	0
Pendleton (37820)	Umatilla	16,830	22 6.8	33 8.2	McKay Creek (41-059-0121)	Annual, Hourly	17-19	0	1	0

2015 Oregon Annual Ambient Air Monitoring Network Plan

Appendix B. Collocation Requirements

PM10, PM2.5, and lead are subject to the collocation requirements described in 40 CFR Part 58, Appendix A, Section 3. These requirements apply at the Primary Quality Assurance Organization levels and DEQ is the PQAO for Oregon. DEQ and LRAPA use method 145 for SLAMS, PM2.5 FRM samplers. LRAPA has one collocated site and DEQ has one the other. DEQ and LRAPA use methods 127,122, and 141 for PM10 samplers. DEQ has one collocated site for each of methods 127 and 141 these methods.

Table B 1. Collocation Requirements for PM2.5

Method Code	# of Primary monitors	# of Required Collocated Monitors	# Active Collocated Monitors	# Active Collocated FEM monitors (Same method designation as primary)
145	11	2	2	0
238	4	1	1	0
170	1	1	1	0
209	1	1	1	0

Table B 2. Collocation Requirements for PM10

Method Code	# of Primary monitors	# of Required Collocated Monitors	# Active Collocated Monitors	# Active Collocated FEM monitors (Same method designation as primary)
041	2	0	0	0
127	1	1	1	0
141	4	1	1	0
239	2	1	1	0

Table B 3. Collocation Requirements for PM10 lead

Method Code	# of Primary monitors	# of Required Collocated Monitors	# Active Collocated Monitors	# Active Collocated FEM monitors (Same method designation as primary)
811	0	0	0	0

Appendix C. Detailed Site Information

This appendix present detailed site information required by 40CFR Part 58.

Table C 1. Portland, SE Lafayette Site Information

Local Site Name	Portland, SE Lafayette	
AQS ID	41-051-0080	
GPS Coordinates	45.4966, -122.6029	
Street address	5824 SE Lafayette, Portland, OR	
County	Multnomah	
Distance from roadways (meters)	80	
Traffic count (AADT, yr)	AADT = 26,000, Yr= 2015 ODOT	
Groundcover (e.g. asphalt, dirt, grass)	Grass	
Representative statistical area name (CBSA, MSA,)	Portland-Vancouver (#6440)	
Pollutant	PM2.5	PM10
Parameter code, POC	88101,1	85101,1 & 81102,1
MSA, CBSA, CSA or area represented	6440	6440
Monitor purpose	NAAQS, NCORE, AQI	NAAQS, NCORE
Monitoring Objective	Population, Non-source	Population, Non-source
Spatial scale of Representativeness	Neighborhood	Neighborhood
Monitoring types	SLAMS/NCORE	SLAMS/NCORE
Instrument type and model	Gravimetric, R&P 2025 w/VSCC	Gravimetric, R&P 2025
Instrument parameter occurrence code	Primary	Primary
Method number	145	127
FRM/FEM/FRM/other	FRM	FRM
Collecting agency	ODEQ (0821)	ODEQ (0821)
Analytical lab	ODEQ	ODEQ
Reporting agency	ODEQ	ODEQ
Monitoring start date	1/1/1999	1/1/1984
Current sampling frequency	1/3	1/3
Sampling season	Annual	Annual
Probe height (meters)	6	6
Distance from supporting structure (meters)	No supports	No supports
Distance from obstructions on roof (meters)	No obstructions	No obstructions
Distance from obstructions not on roof (meters)	No obstructions	No obstructions
Distance from trees (meters)	22	22
Distance from to furnace or incinerator flue (meters)	7	7
Unrestricted airflow (degrees)	360°	360°
Probe material for reactive gases	Aluminum	Aluminum
Residence time for reactive gases (seconds)	NA	NA
Will there be changes with the next 18 months?	No	No
Is it suitable for comparison against the standard?	Yes	Yes

Local Site Name	Portland, SE Lafayette	
AQS ID	41-051-0080	
GPS Coordinates	45.4966, -122.6029	
Street address	5824 SE Lafayette, Portland, OR	
County	Multnomah	
Distance from roadways (meters)	80	
Traffic count (AADT, yr)	AADT = 26,000 yr = 2015 ODOT	
Groundcover (e.g. asphalt, dirt, grass)	Grass	
Representative statistical area name (CBSA, MSA)	Portland-Vancouver (#6440)	
Pollutant	PM10	PM10-2.5
Parameter code, POC	85101,2 & 81102,2	86101,1
MSA, CBSA, CSA or area represented	6440	6440
Monitor purpose	NAAQS	NCORE
Monitoring Objective	Urban Population, Max concentration, Non-source	Urban, Population, Non-source
Spatial scale of Representativeness	Neighborhood	Neighborhood
Monitoring types	SLAMS/NCORE	NCORE
Instrument type and model	Gravimetric, R&P 2025	Gravimetric, R&P 2025s
Instrument parameter occurrence code	Collocated	Primary
Method number	127	176
FRM/FEM/FRM/other	FRM	FRM
Collecting agency	ODEQ (0821)	ODEQ (0821)
Analytical lab	ODEQ	ODEQ
Reporting agency	ODEQ	ODEQ
Monitoring start date	7/1/2013	1/1/2010
Current sampling frequency	1/3	1/3
Sampling season	Annual	Annual
Probe height (meters)	6	6
Distance from supporting structure (meters)	No supports	No supports
Distance from obstructions on roof (meters)	No obstructions	No obstructions
Distance from obstructions not on roof (meters)	No obstructions	No obstructions
Distance from trees (meters)	22	22
Distance from to furnace or incinerator flue (meters)	7	7
Unrestricted airflow (degrees)	360°	360°
Probe material for reactive gases	Aluminum	Aluminum
Residence time for reactive gases (seconds)	NA	NA
Will there be changes with the next 18 months?	No	No
Is it suitable for comparison against the standard?	Yes	Yes

Local Site Name	Portland, SE Lafayette	
AQS ID	41-051-0080	
GPS Coordinates	45.4966, -122.6029	
Street address	5824 SE Lafayette, Portland, OR	
County	Multnomah	
Distance from roadways (meters)	80	
Traffic count (AADT, yr)	AADT = 26,000, Yr= 2015 ODOT	
Groundcover (e.g. asphalt, dirt, grass)	Grass	
Representative statistical area name (CBSA, MSA)	Portland-Vancouver (#6440)	
Pollutant	NO2	Ozone
Parameter code, POC	42602, 1	44201, 1
MSA, CBSA, CSA or area represented	6440	6440
Monitor purpose	NAAQS, NCORE	NAAQS, AQI
Monitoring Objective	Population, Urban, Non- source	Population, Non-source
Spatial scale of Representativeness	Urban	Urban
Monitoring types	SLAMS/NCORE	SLAMS/NCORE
Instrument type and model	Cavity Attenuated Phase Shift, Teledyne T500U	UV absorption, Teledyne T400
Instrument parameter occurrence code	Primary	Primary
Method number	212	087
FRM/FEM/FRM/other	FRM	FRM
Collecting agency	ODEQ (0821)	ODEQ (0821)
Analytical lab	ODEQ	ODEQ
Reporting agency	ODEQ	ODEQ
Monitoring start date	01/01/1984	7/10/2003
Current sampling frequency	Hourly	Hourly
Sampling season	Annual	Annual
Probe height (meters)	6.3	5
Distance from supporting structure (meters)	2.7	1.5
Distance from obstructions on roof (meters)	No obstructions	No obstructions
Distance from obstructions not on roof (meters)	No obstructions	No obstructions
Distance from trees (meters)	24	24
Distance from to furnace or incinerator flue (meters)	9	9
Unrestricted airflow (degrees)	360°	360°
Probe material for reactive gases	Glass, Teflon	Teflon
Residence time for reactive gases (seconds)	4.9	3.5
Will there be changes with the next 18 months?	No	No
Is it suitable for comparison against the standard?	Yes	Yes

Local Site Name	Portland, SE Lafayette	
AQS ID	41-051-0080	
GPS Coordinates	45.4966, -122.6029	
Street address	5824 SE Lafayette, Portland, OR	
County	Multnomah	
Distance from roadways (meters)	80	
Traffic count (AADT, yr)	AADT = 26,000, Yr= 2015 ODOT	
Groundcover (e.g. asphalt, dirt, grass)	Grass	
Representative statistical area name (CBSA, MSA)	Portland-Vancouver (#6440)	
Pollutant	CO	SO2
Parameter code, POC	42101, 1	42401, 1
MSA, CBSA, CSA or area represented	6440	6440
Monitor purpose	NAAQS, NCORE	NAAQS, NCORE
Monitoring Objective	Population, Non-source	Population, Non-source
Spatial scale of Representativeness	Micro	Urban
Monitoring types	SLAMS/NCORE	SLAMS/NCORE
Instrument type and model	IR Absorption, Teledyne T300	UV absorption, Teledyne T100u
Instrument parameter occurrence code	Primary	Primary
Method number	093	100
FRM/FEM/FRM/other	FRM	FRM
Collecting agency	ODEQ (0821)	ODEQ (0821)
Analytical lab	ODEQ	ODEQ
Reporting agency	ODEQ	ODEQ
Monitoring start date	10/1/2005	2/1/2005
Current sampling frequency	Hourly	Hourly
Sampling season	Annual	Annual
Probe height (meters)	6.3	6.3
Distance from supporting structure (meters)	2.7	2.7
Distance from obstructions on roof (meters)	No obstructions	No obstructions
Distance from obstructions not on roof (meters)	No obstructions	No obstructions
Distance from trees (meters)	24	24
Distance from to furnace or incinerator flue (meters)	9	9
Unrestricted airflow (degrees)	360°	360°
Probe material for reactive gases	Glass, Teflon	Glass, Teflon
Residence time for reactive gases (seconds)	3.6	3.6
Will there be changes with the next 18 months?	No	No
Is it suitable for comparison against the standard?	Yes	Yes

Local Site Name	Portland, SE Lafayette
AQS ID	41-051-0080
GPS Coordinates	45.4966, -122.6029
Street address	5824 SE Lafayette, Portland, OR
County	Multnomah
Distance from roadways (meters)	80
Traffic count (AADT, yr)	AADT = 26,000, Yr= 2015 ODOT
Groundcover (e.g. asphalt, dirt, grass)	Grass
Representative statistical area name (CBSA, MSA)	Portland-Vancouver (#6440)
Pollutant	Chemical Speciation
Parameter code, POC	Numerous parameters POC 6
MSA, CBSA, CSA or area represented	6440
Monitor purpose	Trend information, NCORE
Monitoring Objective	Population,
Spatial scale of Representativeness	Neighborhood
Monitoring types	NCORE, STN
Instrument type and model	Super SASS & URG 3000N w/Pall Quartz filter and Cyclone Inlet
Instrument parameter occurrence code	Primary
Method number	810,811,812,826 831,838, 839,840 841,842
FRM/FEM/FRM/other	Other
Collecting agency	ODEQ (0821)
Analytical lab	ODEQ
Reporting agency	ODEQ
Monitoring start date	9/1/2002
Current sampling frequency	Hourly
Sampling season	Annual
Probe height (meters)	6
Distance from supporting structure (meters)	2
Distance from obstructions on roof (meters)	No obstructions
Distance from obstructions not on roof (meters)	No obstructions
Distance from trees (meters)	24
Distance from to furnace or incinerator flue (meters)	9
Unrestricted airflow (degrees)	360°
Probe material for reactive gases	Aluminum
Residence time for reactive gases (seconds)	NA
Will there be changes with the next 18 months?	No
Is it suitable for comparison against the standard?	No

Table C 2. Portland, Humboldt School Site Information

Local Site Name	Portland, Humboldt School	
AQS ID	41-051-2010	
GPS Coordinates	45.558081, -122.670985	
Street address	4915 N Gantenbein Ave, Portland,	
County	Multnomah	
Distance from roadways (meters)	12 from minor road, 108 from major	
Traffic count (AADT, yr)	AADT = 5774 (N Alberta St E Of Kerby Ave), yr =2012 PBOT AADT = 254 (N Blandena St E of Haight Ave), yr =2015 PBOT	
Groundcover (e.g. asphalt, dirt, grass)	Grass	
Representative statistical area name (CBSA, MSA)	Portland-Vancouver (#6440)	
Pollutant	PM10	PM10
Parameter code, POC	81102, 7 85101,7	81102, 9 85101,9
MSA, CBSA, CSA or area represented	6440	6440
Monitor purpose	NAAQS,	NAAQS,
Monitoring Objective	Population, Non-source oriented	Population, Non-source oriented
Spatial scale of Representativeness	Neighborhood	Neighborhood
Monitoring types	SLAMS	SLAMS
Instrument type and model	Gravimetric, Tisch PM10 HV+	Gravimetric, Tisch PM10 HV+
Instrument parameter occurrence code	Primary	Collocated
Method number	141	141
FRM/FEM/FRM/other	FRM	FRM
Collecting agency	ODEQ (0821)	ODEQ (0821)
Analytical lab	ODEQ	ODEQ
Reporting agency	ODEQ	ODEQ
Monitoring start date	1/04/2005	1/1/2013
Current sampling frequency	1/6	1/12
Sampling season	Annual	Annual
Probe height (meters)	6	6
Distance from supporting structure (meters)	No supports	No supports
Distance from obstructions on roof (meters)	No obstructions	No obstructions
Distance from obstructions not on roof (meters)	No obstructions	No obstructions
Distance from trees (meters)	25	25
Distance from to furnace or incinerator flue (meters)	15	15
Unrestricted airflow (degrees)	360°	360°
Probe material for reactive gases	Aluminum	Aluminum
Residence time for reactive gases (seconds)	VOC/Carb= 1.2s	NA
Will there be changes with the next 18 months?	No	No
Is it suitable for comparison against the annual pm10?	Yes	Yes

Table C 3. Portland Near Roadway Site Information

Local Site Name	Portland Near Roadway	
AQS ID	41-067-0005	
GPS Coordinates	45.8992, -122.7455	
Street address	6745 SW Bradbury Ct, Tualatin, OR	
County	Washington	
Distance from roadways (meters)	27	
Traffic count (AADT, yr)	AADT = 164,420 yr = 2015 ODOT MP 290.14	
Groundcover (e.g. asphalt, dirt, grass)	Grass	
Representative statistical area name (CBSA, MSA)	Portland-Vancouver (#6440)	
Pollutant	NO2	PM2.5
Parameter code, POC	42602,1	88101,1
MSA, CBSA, CSA or area represented	6440	6440
Monitor purpose	NAAQS	NAAQS
Monitoring Objective	Source (Freeway)	Source (Freeway)
Spatial scale of Representativeness	Microscale	Microscale
Monitoring types	SLAMS	SLAMS
Instrument type and model	Cavity Attenuated Phase Shift, Teledyne T500U	Gravimetric, R&P 2025 w/VSCC
Instrument parameter occurrence code	Primary	Primary
Method number	212	145
FRM/FEM/FRM/other	FRM	FRM
Collecting agency	ODEQ (0821)	ODEQ (0821)
Analytical lab	ODEQ	ODEQ
Reporting agency	ODEQ	ODEQ
Monitoring start date	04/21/2015	04/21/2015
Current sampling frequency	Hourly	Hourly
Sampling season	Annual	Annual
Probe height (meters)	4	4
Distance from supporting structure (meters)	1	1
Distance from obstructions on roof (meters)	No obstructions	No obstructions
Distance from obstructions not on roof (meters)	No obstructions	No obstructions
Distance from trees (meters)	35	35
Distance from to furnace or incinerator flue (meters)	58	58
Unrestricted airflow (degrees)	360°	360°
Probe material for reactive gases	Glass, Teflon	Glass tubing
Residence time for reactive gases (seconds)	3.5	NA
Will there be changes with the next 18 months?	No	No
Is it suitable for comparison against the standard?	Yes	Yes

Local Site Name	Portland – Near Roadway Site	
AQS ID	41-067-0005	
GPS Coordinates	45.8992, -122.7455	
Street address	6745 SW Bradbury Ct, Tualatin, OR	
County	Washington	
Distance from roadways (meters)	27	
Traffic count (AADT, yr)	AADT = 164,420 yr = 2015 ODOT MP 290.14	
Groundcover (e.g. asphalt, dirt, grass)	Grass	
Representative statistical area name (CBSA, MSA)	Portland-Vancouver (#6440)	
Pollutant	Ozone	CO
Parameter code, POC	44201,1	42101,1
MSA, CBSA, CSA or area represented	6440	6440
Monitor purpose	NAAQS	NAAQS
Monitoring Objective	Source (Freeway)	Source (Freeway)
Spatial scale of Representativeness	Microscale	Microscale
Monitoring types	SLAMS	SLAMS
Instrument type and model	UV absorption, Teledyne T400	IR Absorption, Teledyne T300
Instrument parameter occurrence code	Primary	Primary
Method number	087	093
FRM/FEM/FRM/other	FRM	FRM
Collecting agency	ODEQ (0821)	ODEQ (0821)
Analytical lab	ODEQ	ODEQ
Reporting agency	ODEQ	ODEQ
Monitoring start date	04/21/2015	04/21/2015
Current sampling frequency	Hourly	Hourly
Sampling season	Annual	Annual
Probe height (meters)	3.8	4
Distance from supporting structure (meters)	1	1
Distance from obstructions on roof (meters)	No obstructions	No obstructions
Distance from obstructions not on roof (meters)	No obstructions	No obstructions
Distance from trees (meters)	35	35
Distance from to furnace or incinerator flue (meters)	58	58
Unrestricted airflow (degrees)	360°	360°
Probe material for reactive gases	Teflon	Glass, Teflon
Residence time for reactive gases (seconds)	7.1	3.7
Will there be changes with the next 18 months?	No	No
Is it suitable for comparison against the standard?	Yes	Yes

Table C 4. Hillsboro, Hare Field Site Information

Local Site Name	Hillsboro, Hare Field	
AQS ID	41-067-0004	
GPS Coordinates	45.5285, -	
Street address	1151 NE Grant St, Hillsboro, OR	
County	Washington	
Distance from roadways (meters)	88	
Traffic count (AADT, yr)	AADT = 27,090 (Cornell & Grant), Yr	
Groundcover (e.g. asphalt, dirt, grass)	Asphalt	
Representative statistical area name (CBSA, MSA)	Portland-Vancouver (#6440)	
Pollutant	PM2.5	PM2.5
Parameter code, POC	88101,1	88101,2
MSA, CBSA, CSA or area represented	6440	6440
Monitor purpose	NAAQS, AQI	NAAQS Co-
Monitoring Objective	Population	Population,
Spatial scale of Representativeness	Neighborhood	Neighborhood
Monitoring types	SLAMS	SLAMS
Instrument type and model	Gravimetric, R&P 2025 w/VSCC	Gravimetric, R&P 2025 w/VSCC
Instrument parameter occurrence code	Primary	Collocate
Method number	145	145
FRM/FEM/FRM/other	FRM	FRM
Collecting agency	ODEQ (0821)	ODEQ (0821)
Analytical lab	ODEQ	ODEQ
Reporting agency	ODEQ	ODEQ
Monitoring start date	1/28/2005	1/28/2005
Current sampling frequency	1/3	1/12
Sampling season	Annual	Annual
Probe height (meters)	2	2
Distance from supporting structure (meters)	No supports	No supports
Distance from obstructions on roof (meters)	No obstructions	No obstructions
Distance from obstructions not on roof (meters)	No obstructions	No obstructions
Distance from trees (meters)	125	125
Distance from to furnace or incinerator flue (meters)	150	150
Unrestricted airflow (degrees)	360°	360°
Probe material for reactive gases	Aluminum	Aluminum
Residence time for reactive gases (seconds)	NA	NA
Will there be changes with the next 18 months?	No	No
Is it suitable for comparison against the standard?	Yes	Yes

Table C 5. Portland, Sauvie Island Site Information

Local Site Name	Portland, Sauvie Island
AQS ID	41-009-0004
GPS Coordinates	45.7685, -122.7721
Street address	Social Security Beach, Sauvie Island, OR
County	Columbia
Distance from roadways (meters)	94
Traffic count (AADT, yr)	AADT = No Data, rural area
Groundcover (e.g. asphalt, dirt, grass)	Grass
Representative statistical area name (CBSA, MSA)	Portland-Vancouver (#6440)
Pollutant	Ozone
Parameter code, POC	44201,1
MSA, CBSA, CSA or area represented	6440
Monitor purpose	Upwind of Urban, Transport
Monitoring Objective	Urban Scale
Spatial scale of Representativeness	Rural
Monitoring types	SLAMS
Instrument type and model	UV absorption, Teledyne T400
Instrument parameter occurrence code	Primary
Method number	087
FRM/FEM/FRM/other	FRM
Collecting agency	ODEQ (0821)
Analytical lab	ODEQ
Reporting agency	ODEQ
Monitoring start date	1/1/1980
Current sampling frequency	Hourly
Sampling season	May-Sept
Probe height (meters)	4.3
Distance from supporting structure (meters)	1
Distance from obstructions on roof (meters)	No obstructions
Distance from obstructions not on roof (meters)	No obstructions
Distance from trees (meters)	105
Distance from to furnace or incinerator flue (meters)	NA
Unrestricted airflow (degrees)	360°
Probe material for reactive gases	Teflon
Residence time for reactive gases (seconds)	7.1
Will there be changes with the next 18 months?	No
Is it suitable for comparison against the standard?	Yes

Table C 6. Portland - Carus – Spangler Rd. Site Information

Local Site Name	Portland - Carus – Spangler Rd.
AQS ID	41-005-0004
GPS Coordinates	45.2593, -122.5882
Street address	13575 Spangler Rd., Carus, OR
County	Clackamas
Distance from roadways (meters)	12
Traffic count (AADT, yr)	ADT = 550 yr = 2015 Clackamas Co.
Groundcover (e.g. asphalt, dirt, grass)	Grass
Representative statistical area name (CBSA, MSA)	Portland-Vancouver (#6440)
Pollutant	Ozone
Parameter code, POC	44201,1
MSA, CBSA, CSA or area represented	6440
Monitor purpose	NAAQS
Monitoring Objective	Downwind of Urban, Maximum Concentration
Spatial scale of Representativeness	Urban Scale
Monitoring types	SLAMS
Instrument type and model	UV absorption, Teledyne T400
Instrument parameter occurrence code	Primary
Method number	087
FRM/FEM/FRM/other	FRM
Collecting agency	ODEQ (0821)
Analytical lab	ODEQ
Reporting agency	ODEQ
Monitoring start date	7/23/1976
Current sampling frequency	Hourly
Sampling season	May-Sept
Probe height (meters)	6.4
Distance from supporting structure (meters)	2.7
Distance from obstructions on roof (meters)	No obstructions
Distance from obstructions not on roof (meters)	No obstructions
Distance from trees (meters)	250
Distance from to furnace or incinerator flue (meters)	NA
Unrestricted airflow (degrees)	360°
Probe material for reactive gases	Teflon
Residence time for reactive gases (seconds)	2.8
Will there be changes with the next 18 months?	No
Is it suitable for comparison against the standard?	Yes

Table C 7. Salem – State Hospital Information

Local Site Name	Salem State Hospital
AQS ID	41-047-0041
GPS Coordinates	44.9431, -123.0059
Street address	867 Medical Center
County	Marion
Distance from roadways (meters)	30 meters
Traffic count (AADT, yr)	ADT = 6720 4/21/2015
Groundcover (e.g. asphalt, dirt, grass)	Grass
Representative statistical area name (CBSA, MSA)	Salem
Pollutant	Ozone
Parameter code, POC	44201,1
MSA, CBSA, CSA or area represented	6440
Monitor purpose	NAAQS
Monitoring Objective	In urban core
patial scale of Representativeness	Urban Scale
Monitoring types	SLAMS
Instrument type and model	UV absorption, Teledyne T400
Instrument parameter occurrence code	Primary
Method number	087
FRM/FEM/FRM/other	FRM
Collecting agency	ODEQ (0821)
Analytical lab	ODEQ
Reporting agency	ODEQ
Monitoring start date	5/1/2018
Current sampling frequency	Hourly
Sampling season	May-Sept
Probe height (meters)	3
Distance from supporting structure (meters)	1
Distance from obstructions on roof (meters)	No obstructions
Distance from obstructions not on roof (meters)	No obstructions
Distance from trees (meters)	18
Distance from to furnace or incinerator flue (meters)	NA
Unrestricted airflow (degrees)	360°
Probe material for reactive gases	Teflon
Residence time for reactive gases (seconds)	3.5
Will there be changes with the next 18 months?	No
Is it suitable for comparison against the standard?	Yes

Table C 8. Salem/Turner - Cascade Jr. High Site Information

Local Site Name	Salem/Turner - Cascade Jr. High
AQS ID	41-047-0004
GPS Coordinates	44.8103, -122.9151
Street address	10226 Marion Rd SE, Turner, OR
County	Marion
Distance from roadways (meters)	60
Traffic count (AADT, yr)	ADT = 1584, Yr = 2016 (9/20/2016) Shaff Rd & W Stayton Rd. Marion Co.
Groundcover (e.g. asphalt, dirt, grass)	Grass
Representative statistical area name (CBSA, MSA)	Salem
Pollutant	Ozone
Parameter code, POC	44201,1
MSA, CBSA, CSA or area represented	7080
Monitor purpose	NAAQS, AQI
Monitoring Objective	Downwind of Urban, Max concentration, Non-source oriented
Spatial scale of Representativeness	Urban Scale
Monitoring types	SLAMS
Instrument type and model	UV absorption, Teledyne T400
Instrument parameter occurrence code	Primary
Method number	087
FRM/FEM/FRM/other	FRM
Collecting agency	ODEQ (0821)
Analytical lab	ODEQ
Reporting agency	ODEQ
Monitoring start date	6/23/1995
Current sampling frequency	Hourly
Sampling season	May-Sept
Probe height (meters)	4.5
Distance from supporting structure (meters)	1.5
Distance from obstructions on roof (meters)	No obstructions
Distance from obstructions not on roof (meters)	No obstructions
Distance from trees (meters)	620
Distance from to furnace or incinerator flue (meters)	45
Unrestricted airflow (degrees)	360°
Probe material for reactive gases	Teflon
Residence time for reactive gases (seconds)	2.8
Will there be changes with the next 18 months?	No
Is it suitable for comparison against the standard?	Yes

Table C 9. Eugene – Amazon Park Site Information

Local Site Name	Eugene – Amazon Park	
AQS ID	41-039-0060	
GPS Coordinates	44.0263, -123.0837	
Street address	E. 29 th Amazon Park, Eugene, OR	
County	Lane	
Distance from roadways (meters)	61	
Traffic count (AADT, yr)	AADT = 1700, Yr = 2013 Central Lane MPO	
Groundcover (e.g. asphalt, dirt, grass)	Grass	
Representative statistical area name (CBSA, MSA)	Eugene-Springfield	
Pollutant	Ozone	PM2.5
Parameter code, POC	44201,1	88101,1
MSA, CBSA, CSA or area represented	2400	2400
Monitor purpose	NAAQS, AQI	NAAQS, AQI
Monitoring Objective	Urban Population	Urban Population
Spatial scale of Representativeness	Urban Scale	Neighborhood
Monitoring types	SLAMS	SLAMS
Instrument type and model	Teledyne API 400 – Ultraviolet	Gravimetric R&P 2025 w/VSCC
Instrument parameter occurrence code	Primary	Primary
Method number	087	145
FRM/FEM/FRM/other	FRM	FRM
Collecting agency	LRAPA	LRAPA
Analytical lab	LRAPA	LRAPA
Reporting agency	ODEQ	ODEQ
Monitoring start date	1/1/1985	1/1/1999
Current sampling frequency	Hourly	1/3
Sampling season	May-Sept	Annual
Probe height (meters)	4	5
Distance from supporting structure (meters)	1	2
Distance from obstructions on roof (meters)	No obstructions	No obstructions
Distance from obstructions not on roof (meters)	No obstructions	No obstructions
Distance from trees (meters)	29	29
Distance from to furnace or incinerator flue (meters)	NA	NA
Unrestricted airflow (degrees)	360°	360°
Probe material for reactive gases	Teflon	Aluminum
Residence time for reactive gases (seconds)	NA	NA
Will there be changes with the next 18 months?	No	No
Is it suitable for comparison against the standard?	Yes	Yes

Local Site Name	Eugene – Amazon Park	
AQS ID	41-039-0060	
GPS Coordinates	44.0263, -123.0837	
Street address	E. 29 th Amazon Park, Eugene, OR	
County	Lane	
Distance from roadways (meters)	61	
Traffic count (AADT, yr)	AADT = 1700, Yr = 2013 Central Lane MPO	
Groundcover (e.g. asphalt, dirt, grass)	Grass	
Representative statistical area name (CBSA, MSA)	Eugene-Springfield	
Pollutant	PM2.5	PM10
Parameter code, POC	88101,2	81102,7
MSA, CBSA, CSA or area represented	2400	
Monitor purpose	NAAQS	Air Toxics
Monitoring Objective	Population	Population
Spatial scale of Representativeness	Neighborhood	Neighborhood
Monitoring types	SLAMS	SPM
Instrument type and model	Gravimetric R&P 2025 w/VSCC	Gravimetric, Tisch HV+
Instrument parameter occurrence code	Collocated	Primary
Method number	145	141
FRM/FEM/FRM/other	FRM	FRM
Collecting agency	LRAPA	LRAPA
Analytical lab	LRAPA	ODEQ
Reporting agency	ODEQ	ODEQ
Monitoring start date	1/2/2002	5/1/2018
Current sampling frequency	1/12	1/6
Sampling season	Annual	Annual
Probe height (meters)	5	4
Distance from supporting structure (meters)	2	2
Distance from obstructions on roof (meters)	No obstructions	No obstructions
Distance from obstructions not on roof (meters)	No obstructions	No obstructions
Distance from trees (meters)	29	29
Distance from to furnace or incinerator flue (meters)	NA	NA
Unrestricted airflow (degrees)	360°	360°
Probe material for reactive gases	Aluminum	Aluminum
Residence time for reactive gases (seconds)	NA	NA
Will there be changes with the next 18 months?	No	No
Is it suitable for comparison against the standard?	Yes	Yes

Table C 10. Eugene – Saginaw Site Information

Local Site Name	Eugene – Saginaw
AQS ID	41-039-1007
GPS Coordinates	43.8345, -123.0353
Street address	Delight Villy Sch Rd., Saginaw, OR
County	Lane
Distance from roadways (meters)	140
Traffic count (AADT, yr)	No data available
Groundcover (e.g. asphalt, dirt, grass)	Grass
Representative statistical area name (CBSA, MSA)	Eugene-Springfield
Pollutant	Ozone
Parameter code, POC	44201,1
MSA, CBSA, CSA or area represented	2400
Monitor purpose	NAAQS, AQI
Monitoring Objective	Downwind of Urban, Highest Concentration
Spatial scale of Representativeness	Urban Scale
Monitoring types	SLAMS
Instrument type and model	UV Absorption, Teledyne API 400
Instrument parameter occurrence code	Primary
Method number	087
FRM/FEM/FRM/other	FRM
Collecting agency	LRAPA
Analytical lab	LRAPA
Reporting agency	ODEQ
Monitoring start date	5/1/1994
Current sampling frequency	Hourly
Sampling season	May-Sept
Probe height (meters)	5
Distance from supporting structure (meters)	1
Distance from obstructions on roof (meters)	No obstructions
Distance from obstructions not on roof (meters)	No obstructions
Distance from trees (meters)	43
Distance from to furnace or incinerator flue (meters)	36
Unrestricted airflow (degrees)	360°
Probe material for reactive gases	Teflon
Residence time for reactive gases (seconds)	3.5
Will there be changes with the next 18 months?	No
Is it suitable for comparison against the standard?	Yes

Table C 11. Eugene – Hwy 99 Site Information

Local Site Name	Eugene – Hwy 99	
AQS ID	41-039-0059	
GPS Coordinates	44.0672, -123.1414	
Street address	450 Pacific Hwy 99, Eugene, OR	
County	Lane	
Distance from roadways (meters)	75	
Traffic count (AADT, yr)	AADT= 29,000, yr = 2013 Central Lane MPO	
Groundcover (e.g. asphalt, dirt, grass)	Grass	
Representative statistical area name (CBSA, MSA)	Eugene-Springfield	
Pollutant	PM2.5	PM10
Parameter code, POC	88101,1	81102,1
MSA, CBSA, CSA or area represented	2400	2400
Monitor purpose	NAAQS, AQI	NAAQS
Monitoring Objective	Population	Population
Spatial scale of Representativeness	Neighborhood	Neighborhood
Monitoring types	SLAMS	SLAMS
Instrument type and model	Gravimetric R&P 2025 w/VSCC	Beta ray attenuation Met One, BAM 1020
Instrument parameter occurrence code	Primary	Primary
Method number	145	122
FRM/FEM/FRM/other	FRM	FRM
Collecting agency	LRAPA	LRAPA
Analytical lab	LRAPA	LRAPA
Reporting agency	ODEQ	ODEQ
Monitoring start date	7/1/2011	1/1/2012
Current sampling frequency	1/3	Continuous
Sampling season	Annual	Annual
Probe height (meters)	5	4
Distance from supporting structure (meters)	2	1
Distance from obstructions on roof (meters)	No obstructions	No obstructions
Distance from obstructions not on roof (meters)	No obstructions	No obstructions
Distance from trees (meters)	19	19
Distance from to furnace or incinerator flue (meters)	19	19
Unrestricted airflow (degrees)	360°	360°
Probe material for reactive gases	Aluminum	Aluminum
Residence time for reactive gases (seconds)	NA	NA
Will there be changes with the next 18 months?	No	No
Is it suitable for comparison against the standard?	Yes	Yes

Table C 12. Cottage Grove, City Shops Site Information

Local Site Name	Cottage Grove, City Shops
AQS ID	41-039-9004
GPS Coordinates	43.7995, -123.0535
Street address	Cottage Grove, OR
County	Lane
Distance from roadways (meters)	177
Traffic count (AADT, yr)	No Data Available
Groundcover (e.g. asphalt, dirt, grass)	Dirt
Representative statistical area name (CBSA, MSA)	Other
Pollutant	PM2.5
Parameter code, POC	88101,1
MSA, CBSA, CSA or area represented	0000
Monitor purpose	NAAQS,AQI
Monitoring Objective	Population
Spatial scale of Representativeness	Neighborhood
Monitoring types	SLAMS
Instrument type and model	Gravimetric R&P 2025 w/VSCC
Instrument parameter occurrence code	Primary
Method number	145
FRM/FEM/FRM/other	FRM
Collecting agency	LRAPA
Analytical lab	LRAPA
Reporting agency	ODEQ
Monitoring start date	1/1/2008
Current sampling frequency	1/3
Sampling season	Annual
Probe height (meters)	5
Distance from supporting structure (meters)	2
Distance from obstructions on roof (meters)	No obstructions
Distance from obstructions not on roof (meters)	No obstructions
Distance from trees (meters)	36
Distance from to furnace or incinerator flue (meters)	60
Unrestricted airflow (degrees)	360°
Probe material for reactive gases	Aluminum
Residence time for reactive gases (seconds)	NA
Will there be changes with the next 18 months?	No
Is it suitable for comparison against the standard?	Yes

Table C 13. Oakridge, Willamette Center Site Information

Local Site Name	Oakridge, Willamette Center		
AQS ID	41-039-2013		
GPS Coordinates	43.7443, -		
Street address	School St., Oakridge, OR		
County	Lane		
Distance from roadways (meters)	115		
Traffic count (AADT, yr)	AADT = 6600, yr =2012		
Groundcover (e.g. asphalt, dirt, grass)	Grass		
Representative statistical area name (CBSA, MSA)	Other		
Pollutant	PM2.5	PM2.5	PM10
Parameter code, POC	88101,1	88101,2	81102,1
MSA, CBSA, CSA or area represented	0000		
Monitor purpose	NAAQS, AQI	NAAQS	NAAQS
Monitoring Objective	Population		
Spatial scale of Representativeness	Neighborhood		
Monitoring types	SLAMS		
Instrument type and model	Beta ray attenuation Met One, BAM 1022	Gravimetric R&P 2025 w/VSCC	Beta ray attenuation Met One, BAM 1020
Instrument parameter occurrence code	Primary	Collocate	Primary
Method number	209	145	122
FRM/FEM/FRM/other	FEM	FRM	FEM
Collecting agency	LRAPA	LRAPA	LRAPA
Analytical lab	LRAPA	LRAPA	LRAPA
Reporting agency	ODEQ	ODEQ	ODEQ
Monitoring start date	1/1/1999	1/1/2020	11/1/1989
Current sampling frequency	continuous	1/3	Continuous
Sampling season	Annual	Annual	Annual
Probe height (meters)	5	5	4
Distance from supporting structure (meters)	2	2	1
Distance from obstructions on roof (meters)	No obstructions	No	No obstructions
Distance from obstructions not on roof (meters)	No obstructions	No	No obstructions
Distance from trees (meters)	20	20	20
Distance from to furnace or incinerator flue	63	63	63
Unrestricted airflow (degrees)	360°	360°	360°
Probe material for reactive gases	Aluminum	Aluminum	Aluminum
Residence time for reactive gases (seconds)	NA	NA	NA
Will there be changes with the next 18 months?	No	No	No
Is it suitable for comparison against the standard?	Yes	Yes	Yes

Table C 14. Grants Pass, Parkside School Site Information

Local Site Name	Grants Pass, Parkside School
AQS ID	41-035-0114
GPS Coordinates	42.4342, -123.3485
Street address	735 SW Wagner Meadows Dr., Grants Pass, OR
County	Josephine
Distance from roadways (meters)	85
Traffic count (AADT, yr)	AADT = 4900, yr = 2012
Groundcover (e.g. asphalt, dirt, grass)	Grass
Representative statistical area name (CBSA, MSA)	Other
Pollutant	PM2.5
Parameter code, POC	88101,1
MSA, CBSA, CSA or area represented	0000
Monitor purpose	NAAQS, AQI
Monitoring Objective	Population
Spatial scale of Representativeness	Neighborhood
Monitoring types	SLAMS
Instrument type and model	Gravimetric R&P 2025 w/VSCC
Instrument parameter occurrence code	Primary
Method number	145
FRM/FEM/FRM/other	FRM
Collecting agency	ODEQ
Analytical lab	ODEQ
Reporting agency	ODEQ
Monitoring start date	8/31/1999
Current sampling frequency	1/6
Sampling season	Annual
Probe height (meters)	3
Distance from supporting structure (meters)	2
Distance from obstructions on roof (meters)	No obstructions
Distance from obstructions not on roof (meters)	No obstructions
Distance from trees (meters)	27
Distance from to furnace or incinerator flue (meters)	87
Unrestricted airflow (degrees)	360°
Probe material for reactive gases	Aluminum
Residence time for reactive gases (seconds)	NA
Will there be changes with the next 18 months?	No
Is it suitable for comparison against the standard?	Yes

Table C 15. Medford, Welch and Jackson Information

Local Site Name	Medford, Welch and Jackson	
AQS ID	41-029-2129	
GPS Coordinates	42.3315, -122.8803	
Street address	711 Welch St	
County	Jackson	
Distance from roadways (meters)	43 meters	
Traffic count (AADT, yr)	AADT 7200	
Groundcover (e.g. asphalt, dirt, grass)	Dirt	
Representative statistical area name (CBSA, MSA)	Other	
Pollutant	PM2.5	PM10
Parameter code, POC	88101,1	88101,1
MSA, CBSA, CSA or area represented	0000	0000
Monitor purpose	NAAQS, AQI	NAAQS
Monitoring Objective	Population	Population
Spatial scale of Representativeness	Neighborhood	Neighborhood
Monitoring types	SLAMS	SLAMS
Instrument type and model	Gravimetric R&P 2025 w/VSCC	Gravimetric Tisch HV PM10+
Instrument parameter occurrence code	Primary	Primary
Method number	145	141
FRM/FEM/FRM/other	FRM	FRM
Collecting agency	ODEQ	ODEQ
Analytical lab	ODEQ	ODEQ
Reporting agency	ODEQ	ODEQ
Monitoring start date	4/1/2018	7/20/1989
Current sampling frequency	1/3	1/6
Sampling season	Annual	Annual
Probe height (meters)	3	3
Distance from supporting structure (meters)	2	2
Distance from obstructions on roof (meters)	No obstructions	No obstructions
Distance from obstructions not on roof (meters)	No obstructions	No obstructions
Distance from trees (meters)	34	34
Distance from to furnace or incinerator flue (meters)	32	32
Unrestricted airflow (degrees)	360°	360°
Probe material for reactive gases	Aluminum	Aluminum
Residence time for reactive gases (seconds)	NA	NA
Will there be changes with the next 18 months?	No	No
Is it suitable for comparison against the standard?	Yes	Yes

Table C 16. Medford - Talent Site Information

Local Site Name	Medford - Talent
AQS ID	41-029-0201
GPS Coordinates	42.2299, -122.7877
Street address	7120 Rapp In, Talent, OR
County	Jackson
Distance from roadways (meters)	220
Traffic count (AADT, yr)	AADT = 764, yr = 2006
Groundcover (e.g. asphalt, dirt, grass)	Grass
Representative statistical area name (CBSA, MSA)	Medford-Ashland
Pollutant	Ozone
Parameter code, POC	44201,1
MSA, CBSA, CSA or area represented	0000
Monitor purpose	NAAQS, AQI
Monitoring Objective	Downwind of Urban, Highest Concentration
Spatial scale of Representativeness	Urban Scale
Monitoring types	SLAMS
Instrument type and model	UV Absorption, Teledyne T400
Instrument parameter occurrence code	Primary
Method number	087
FRM/FEM/FRM/other	FRM
Collecting agency	ODEQ (0821)
Analytical lab	ODEQ
Reporting agency	ODEQ
Monitoring start date	5/12/1992
Current sampling frequency	Hourly
Sampling season	May-Sept
Probe height (meters)	7
Distance from supporting structure (meters)	1
Distance from obstructions on roof (meters)	No obstructions
Distance from obstructions not on roof (meters)	No obstructions
Distance from trees (meters)	49
Distance from to furnace or incinerator flue (meters)	NA
Unrestricted airflow (degrees)	360°
Probe material for reactive gases	Teflon
Residence time for reactive gases (seconds)	2.8
Will there be changes with the next 18 months?	No
Is it suitable for comparison against the standard?	Yes

Table C 17. Klamath Falls, Petersen School Site Information

Local Site Name	Klamath Falls, Petersen School	
AQS ID	41-035-0004	
GPS Coordinates	42.1903, -	
Street address	4856 Clinton Ave, KlamathFalls,OR	
County	Klamath	
Distance from roadways (meters)	8	
Traffic count (AADT, yr)	AADT = 9090 (Clinton & Summers) , Yr = 2011	
Groundcover (e.g. asphalt, dirt, grass)	Grass	
Representative statistical area name (CBSA, MSA)	Other	
Pollutant	PM2.5	PM2.5
Parameter code, POC	88101,1	88101,2
MSA, CBSA, CSA or area represented	0000	0000
Monitor purpose	NAAQS, AQI	NAAQS, AQI
Monitoring Objective	Population	Population
Spatial scale of Representativeness	Neighborhood	Neighborhood
Monitoring types	SLAMS	SLAMS
Instrument type and model	Light Scattering, Teledyne T640X	Gravimetric R&P 2025 w/VSCC
Instrument parameter occurrence code	Primary	Collocate
Method number	238	145
FRM/FEM/FRM/other	FEM	FRM
Collecting agency	ODEQ	ODEQ
Analytical lab	ODEQ	ODEQ
Reporting agency	ODEQ	ODEQ
Monitoring start date	1/1/2019	1/5/1998
Current sampling frequency	1/1	1/6
Sampling season	Annual	Annual
Probe height (meters)	3	3
Distance from supporting structure (meters)	2	2
Distance from obstructions on roof (meters)	No obstructions	No obstructions
Distance from obstructions not on roof (meters)	No obstructions	No obstructions
Distance from trees (meters)	43	43
Distance from to furnace or incinerator flue	46	46
Unrestricted airflow (degrees)	360°	360°
Probe material for reactive gases	Aluminum	Aluminum
Residence time for reactive gases (seconds)	NA	NA
Will there be changes with the next 18 months?	No	No
Is it suitable for comparison against the standard?	Yes	Yes

Local Site Name	Klamath Falls, Petersen School	
AQS ID	41-035-0004	
GPS Coordinates	42.1903, -	
Street address	4856 Clinton Ave, KlamathFalls,OR	
County	Klamath	
Distance from roadways (meters)	8	
Traffic count (AADT, yr)	AADT = 9090 (Clinton & Summers) , Yr = 2011	
Groundcover (e.g. asphalt, dirt, grass)	Grass	
Representative statistical area name (CBSA, MSA)	Other	
Pollutant	PM10	PM10
Parameter code, POC	88101,1	88101,2
MSA, CBSA, CSA or area represented	0000	0000
Monitor purpose	NAAQS, AQI	NAAQS, AQI
Monitoring Objective	Population	Population
Spatial scale of Representativeness	Neighborhood	Neighborhood
Monitoring types	SLAMS	SLAMS
Instrument type and model	Light Scattering, Teledyne T640X	Gravimetric R&P 2025 w/VSCC
Instrument parameter occurrence code	Primary	Collocate
Method number	239	127
FRM/FEM/FRM/other	FEM	FRM
Collecting agency	ODEQ	ODEQ
Analytical lab	ODEQ	ODEQ
Reporting agency	ODEQ	ODEQ
Monitoring start date	1/1/2019	10/1/2019
Current sampling frequency	1/1	1/6
Sampling season	Annual	Annual
Probe height (meters)	3	3
Distance from supporting structure (meters)	2	2
Distance from obstructions on roof (meters)	No obstructions	No obstructions
Distance from obstructions not on roof (meters)	No obstructions	No obstructions
Distance from trees (meters)	43	43
Distance from to furnace or incinerator flue	46	46
Unrestricted airflow (degrees)	360°	360°
Probe material for reactive gases	Aluminum	Aluminum
Residence time for reactive gases (seconds)	NA	NA
Will there be changes with the next 18 months?	No	No
Is it suitable for comparison against the standard?	Yes	Yes

Table C 18. Lakeview, Center and M Sts Site Information

Local Site Name	Lakeview, Center and M Sts		
AQS ID	41-037-0001		
GPS Coordinates	42.1892, -		
Street address	8 South M St., Lakeview, OR		
County	Lake		
Distance from roadways (meters)	25 meters		
Traffic count (AADT, yr)	AADT = 3100 (Hwy 20 & L St., yr = 2012 www.ci.medford.or.us/Page.asp?		
Groundcover (e.g. asphalt, dirt, grass)	Dirt		
Representative statistical area name (CBSA, MSA)	Other		
Pollutant	PM2.5	PM2.5	PM10
Parameter code, POC	88101,1	88101,2	88101,1
MSA, CBSA, CSA or area represented	0000	0000	0000
Monitor purpose	NAAQS, AQI	NAAQS,	NAAQS
Monitoring Objective	Population	Population	Population
Spatial scale of Representativeness	Neighborhood	Neighborho	Neighborhood
Monitoring types	SLAMS	SLAMS	SLAMS
Instrument type and model	Light Scattering, Teledyne T640X	Gravimetric R&P 2025	Light Scattering, Teledyne T640X
Instrument parameter occurrence code	Primary	Collocate	Primary
Method number	238	145	239
FRM/FEM/FRM/other	FRM	FRM	FRM
Collecting agency	ODEQ	ODEQ	ODEQ
Analytical lab	ODEQ	ODEQ	ODEQ
Reporting agency	ODEQ	ODEQ	ODEQ
Monitoring start date	1/1/2020	1/5/1998	1/5/1998
Current sampling frequency	1/3	1/6	1/3
Sampling season	Annual	Annual	Annual
Probe height (meters)	4	3	3
Distance from supporting structure (meters)	1	2	2
Distance from obstructions on roof (meters)	No obstructions	No	No obstructions
Distance from obstructions not on roof (meters)	No obstructions	No	No obstructions
Distance from trees (meters)	19	43	19
Distance from to furnace or incinerator flue (meters)	19	46	19
Unrestricted airflow (degrees)	360°	360°	360°
Probe material for reactive gases	Aluminum	Aluminum	Aluminum
Residence time for reactive gases (seconds)	NA	NA	NA
Will there be changes with the next 18 months?	No	No	No
Is it suitable for comparison against the standard?	Yes	Yes	Yes

Table C 19. Burns, Washington Street Site Information

Local Site Name	Burns, Washington Street	
AQS ID	41-025-0003	
GPS Coordinates	43.5892, -119.0487	
Street address	E. Washington St., Burns, OR	
County	Harney	
Distance from roadways (meters)	16	
Traffic count (AADT, yr)	AADT=3200 (Hwy20 & A St.), Yr = 2012	
Groundcover (e.g. asphalt, dirt, grass)	Grass	
Representative statistical area name (CBSA, MSA)	Other	
Pollutant	PM2.5	PM2.5
Parameter code, POC	88101,2	88101,1
MSA, CBSA, CSA or area represented	0000	0000
Monitor purpose	NAAQS, AQI	NAAQS, AQI
Monitoring Objective	Population	Population
Spatial scale of Representativeness	Neighborhood	Neighborhood
Monitoring types	SLAMS	SLAMS
Instrument type and model	Gravimetric R&P 2025 w/VSCC	Beta Attenuation Met One BAM 1020
Instrument parameter occurrence code	Collocate	Primary
Method number	145	170
FRM/FEM/FRM/other	FRM	FEM
Collecting agency	ODEQ	ODEQ
Analytical lab	ODEQ	ODEQ
Reporting agency	ODEQ	ODEQ
Monitoring start date	9/19/2009	9/19/2009
Current sampling frequency	1/1	1/6
Sampling season	Annual	Annual
Probe height (meters)	3	3
Distance from supporting structure (meters)	2	2
Distance from obstructions on roof (meters)	No obstructions	No obstructions
Distance from obstructions not on roof (meters)	No obstructions	No obstructions
Distance from trees (meters)	80	80
Distance from to furnace or incinerator flue (meters)	41	41
Unrestricted airflow (degrees)	360°	360°
Probe material for reactive gases	Aluminum	Aluminum
Residence time for reactive gases (seconds)	NA	NA
Will there be changes with the next 18 months?	No	No
Is it suitable for comparison against the standard?	Yes	Yes

Table C 20. Prineville, Davidson Park Site Information

Local Site Name	Prineville, Davidson Park	
AQS ID	41-013-0100	
GPS Coordinates	44.2998, -120.8448	
Street address	251 SE Court St, Prineville, OR	
County	Crook	
Distance from roadways (meters)	10	
Traffic count (AADT, yr)	8800 (Hwy 26 & OR 27), 2012	
Groundcover (e.g. asphalt, dirt, grass)	Grass	
Representative statistical area name (CBSA, MSA)	Other	
Pollutant	PM2.5	Chemical Speciation
Parameter code, POC	88101,1	Numerous POC 5
MSA, CBSA, CSA or area represented	0000	6440
Monitor purpose	NAAQS, AQI	Informational
Monitoring Objective	Population	Population,
Spatial scale of Representativeness	Neighborhood	Neighborhood
Monitoring types	SLAMS	STN
Instrument type and model	Gravimetric R&P 2025 w/VSCC	Super SASS & URG3000N Quartz filter Cyclone Inlet
Instrument parameter occurrence code	Primary	Primary
Method number	145	810,811,812,826 831,838,839,840 841,842
FRM/FEM/FRM/other	FRM	Other
Collecting agency	ODEQ	ODEQ (0821)
Analytical lab	ODEQ	ODEQ
Reporting agency	ODEQ	ODEQ
Monitoring start date	1/1/2009	9/1/2002
Current sampling frequency	1/3	Hourly
Sampling season	Annual	Annual
Probe height (meters)	3	6
Distance from supporting structure (meters)	2	2
Distance from obstructions on roof (meters)	No obstructions	No obstructions
Distance from obstructions not on roof (meters)	No obstructions	No obstructions
Distance from trees (meters)	37	24
Distance from to furnace or incinerator flue (meters)	39	9
Unrestricted airflow (degrees)	360°	360°
Probe material for reactive gases	Aluminum	Aluminum
Residence time for reactive gases (seconds)	NA	NA
Will there be changes with the next 18 months?	No	No
Is it suitable for comparison against the standard?	Yes	No

Table C 21. La Grande, Hall and North Site Information

Local Site Name	La Grande, Hall and North Street
AQS ID	41-061-0119
GPS Coordinates	45.32363, -118.07806
Street address	1305 N Willow St, La Grande, OR
County	Union
Distance from roadways (meters)	18
Traffic count (AADT, yr)	No data
Groundcover (e.g. asphalt, dirt, grass)	Grass
Representative statistical area name (CBSA, MSA)	Other
Pollutant	PM10
Parameter code, POC	81102,1
MSA, CBSA, CSA or area represented	0000
Monitor purpose	NAAQS, AQI
Monitoring Objective	Population
Spatial scale of Representativeness	Neighborhood
Monitoring types	SLAMS
Instrument type and model	Gravimetric, Tisch PM10 HV+
Instrument parameter occurrence code	Primary
Method number	141
FRM/FEM/FRM/other	FRM
Collecting agency	ODEQ
Analytical lab	ODEQ
Reporting agency	ODEQ
Monitoring start date	9/1/2017
Current sampling frequency	1/6
Sampling season	Annual
Probe height (meters)	3
Distance from supporting structure (meters)	2
Distance from obstructions on roof (meters)	No obstructions
Distance from obstructions not on roof (meters)	No obstructions
Distance from trees (meters)	26
Distance from to furnace or incinerator flue (meters)	39
Unrestricted airflow (degrees)	360°
Probe material for reactive gases	Aluminum
Residence time for reactive gases (seconds)	NA
Will there be changes with the next 18 months?	No
Is it suitable for comparison against the standard?	Yes

Table C 22. Hermiston Municipal Airport Site Information

Local Site Name	Hermiston Municipal Airport
AQS ID	41-059-1003
GPS Coordinates	45.8290, -119.2630
Street address	1498 Airport Way, Hermiston, OR
County	Umatilla
Distance from roadways (meters)	888,
Traffic count (AADT, yr)	AADT = 7300 (MP 8.7, US395 or Hwy 54), Yr = 2012
Groundcover (e.g. asphalt, dirt, grass)	Grass
Representative statistical area name (CBSA, MSA)	Hermiston (0000)
Pollutant	Ozone
Parameter code, POC	44201,1
MSA, CBSA, CSA or area represented	0000
Monitor purpose	NAAQS, AQI
Monitoring Objective	Population
Spatial scale of Representativeness	Urban
Monitoring types	SLAMS
Instrument type and model	UV Absorption, Teledyne T400
Instrument parameter occurrence code	Primary
Method number	087
FRM/FEM/FRM/other	FRM
Collecting agency	ODEQ
Analytical lab	ODEQ
Reporting agency	ODEQ
Monitoring start date	2/27/2007
Current sampling frequency	Hourly
Sampling season	May-Sept
Probe height (meters)	4
Distance from supporting structure (meters)	1
Distance from obstructions on roof (meters)	No obstructions
Distance from obstructions not on roof (meters)	No obstructions
Distance from trees (meters)	134
Distance from to furnace or incinerator flue (meters)	72
Unrestricted airflow (degrees)	360°
Probe material for reactive gases	Teflon
Residence time for reactive gases (seconds)	2.8
Will there be changes with the next 18 months?	No
Is it suitable for comparison against the standard?	Yes

Appendix D. Site Evaluation Checklist

Region 10 ANNUAL AIR MONITORING NETWORK PLAN CHECKLIST

Year: 2018

Agency: Oregon DEQ and Lane Regional Air Protection Agency

40 CFR 58.10(a)(1) requires that each Annual Network Plan (ANP) include information regarding the following types of monitors: SLAMS monitoring stations including FRM, FEM, and ARM monitors that are part of SLAMS, NCore stations, STN stations, State speciation stations, SPM stations, and/or, in serious, severe and extreme ozone nonattainment areas, PAMS stations, and SPM monitoring stations.

ANP requirement	Citation within 40 CFR 58	Was the info submitted? ¹ If yes, page #s. Flag if incorrect? ²	Does the information provided ³ meet the req? ⁴
1. Submit plan by July 1	CFR 58.10 (a)(1)	Yes	Yes
2. Statement of purpose for each monitor including	CFR 58.10 (a)(1)	Yes Appendix C. Yes SPMs per 58.20(a)	Yes
3. 30-day public comment / inspection period ⁵	CFR 58.10 (a)(1) & 58.10(a)(2)	Yes	

1. Response options: NA (Not Applicable), Yes, No, Incomplete, Incorrect. The responses “Incomplete” and “Incorrect” assume that some information has been provided.

2. To the best of our knowledge.

3. Assuming the information is correct

4. Response options: NA (Not Applicable) – [reason], Yes, No, Insufficient to Judge.

5. The affected state or local agency must document the process for obtaining public comment and include any comments received through the public notification process within their submitted plan.

6. See 58.14(c)

	ANP requirement	Citation within 40 CFR 58	Was the info submitted?¹ If yes, page #s. Flag if incorrect?²	Does the information provided³ meet the req?⁴	Notes
4.	Modifications to SLAMS network – case when we are not approving actual system modifications (i.e., we will do it outside the ANP process ⁶)	58.10 (a)(2) 58.10(e)	No	NA – no changes	
5.	Modifications to SLAMS network – case when we are approving actual system modifications per 58.14(c)	58.10 (a)(2) 58.10 (b)(5) 58.10(e) 58.14 (c)	Yes, page 21	Yes	
6.	Does plan include documentation (e.g., attached approval letter) for system modifications that have been approved since last ANP approval?		No	NA – no changes	
7.	NCore site operational	58.10 (a)(3)	Yes, page 30	Yes	
8.	Pb site for 0.5-1.0 tpy sources operational	58.10 (a)(4)	No	Yes, Appendix E – Waivers	The only Pb source site was discontinued in the 2012 ANP with a waiver granted by EPA.
9.	NO ₂ plan for area-wide and RA40 sites submitted by 7/1/2012	58.10 (a)(5)	Previously. The site is operating.	NA	
10.	NO ₂ area-wide and RA40 sites operational by 1/1/2015	58.10 (a)(5)	Previously. The site is operating.	NA	Starting date was 4/15/2015.
11.	NO ₂ plan for near-road sites submitted by 7/1/2013	58.10 (a)(5)	Previously. The site is operating.	NA	.
12.	SO ₂ sites operational (by 1/1/2013)	58.10 (a)(6) And 58.13 (d)	Previously. The site is operating.	NA	
13.	AQS site identification number for each site	58.10 (b)(1)	Yes, pages 30 to 58.	Yes	

	ANP requirement	Citation within 40 CFR 58	Was the info submitted?¹ If yes, page #s. Flag if incorrect²?	Does the information provided³ meet the req?⁴	Notes
14.	Location of each site: street address and geographic coordinates	58.10 (b)(2)	Yes, pages 30 to 58	Yes	
15.	Sampling and analysis method(s) for each measured parameter	58.10 (b)(3)	Yes, pages 30 to 58	Yes	
16.	Any proposals to remove or move a monitoring station within a period of 18 months following plan submittal	58.10 (b)(5)	No	NA	
17.	Scale of representativeness for each monitor as defined in Appendix D	58.10(b)(6); App D	Yes, pages 30 to 58	Yes	
18.	Identification of sites suitable and sites not suitable for comparison to the annual PM2.5 NAAQS as described in Part 58.30	58.10 (b)(7)	Yes, pages 30 to 58	Yes	
19.	MSA, CBSA, CSA or other area represented by the monitor	58.10 (b)(8)	Yes, pages 30 to 58	Yes	
20.	Designation of any Pb monitors as either source-oriented or non-source-oriented	58.10 (b)(9)	NA	NA	
21.	Any source-oriented Pb site for which a waiver has been requested or granted by EPA RA	58.10 (b)(10)	Yes, page 77.	Yes	
22.	Any Pb monitor for which a waiver has been requested or granted by EPA RA for use of Pb-PM10 in lieu of Pb-TSP	58.10 (b)(11)	NA	NA	
23.	Identification of required NO2 monitors as either near-road or area-wide, or vulnerable and susceptible population monitors	58.10 (b)(12)	Yes, pages 30 to 58	Yes	<i>One Area wide site, one near-road site</i>

	ANP requirement	Citation within 40 CFR 58	Was the info submitted?¹ If yes, page #s. Flag if incorrect²?	Does the information provided³ meet the req?⁴	Notes
24.	Identification of any PM2.5 FEMs and/or ARMs not eligible to be compared to the NAAQS (<i>Note 1: must include required data assessment.</i>) (<i>Note 2: Required SLAMS must monitor PM2.5 with NAAQS-comparable monitor at the required sample frequency.</i>)	58.10 (b)(13) 58.11 (e)	No	NA	<i>We are not submitting FEMs or ARMs for comparison to the NAAQS. DEQ and LRAPA are running PM2.5 FEMS for informational purposes.</i>
25.	For SPMs listed as non-regulatory, note the start Date of FRM/FEM/ARM at SPM. If > 24 months, and monitor is eligible for comparison to the NAAQS per 58.11 (e) and 58.30, the agency must supply information that App A, C or E requirements were not met.	58.20(c)	NA	NA	
26.	Document how states and local agencies provide for the review of changes to a PM2.5 monitoring network that impact the location of a violating PM2.5 monitor.	58.10 (c)	No.	Yes	There have been no changes to the PM2.5 monitoring network but DEQ will document how any future changes will be processed.
27.	Does the plan include a request for approval for and alternative to appendix A requirements for SPMs operating a FRM/FEM/ARM which also meets appendix E?	58.11 (a) (2)	NA	NA	<i>No such monitoring sties</i>

	ANP requirement	Citation within 40 CFR 58	Was the info submitted?¹ If yes, page #s. Flag if incorrect?²	Does the information provided³ meet the req?⁴	Notes
28.	Start date for each monitor	Required to determine if other req. (e.g., min # and co-lo) are met	Yes, pages 30 to 58.	Yes	
29.	Instrument monitor type for each monitor	Required to determine if other req. (e.g., min # and co-lo) are met	Yes, pages 30 to 58 and Appendix A.	Yes	
30.	Monitoring objective for each instrument	App D 1.1 58.10 (b)(6)	Yes, pages 30 to 58.	Yes	
31.	Site type for each instrument	App D 1.1.1	Yes, pages 30 to 58.	Yes	
32.	Instrument parameter code for each instrument	Required to determine if other req. (e.g., min # and co-lo) are met	Yes, pages 30 to 58.	Yes	

	ANP requirement	Citation within 40 CFR 58	Was the info submitted?¹ If yes, page #s. Flag if incorrect²?	Does the information provided³ meet the req?⁴	Notes
33.	Instrument parameter occurrence code for each instrument	Required to determine if other req. (e.g., min # and co-lo) are met	Yes, pages 30 to 58.	Yes	
34.	Sampling season for ozone (note: date of waiver approval must be included if the sampling season deviates from requirement)	58.10 (b)(4) App D, 4.1(i)	Yes, pages 30 to 58.	Yes	
35.	Sampling schedule for PM _{2.5} - applies to year-round and seasonal sampling schedules (note: date of waiver approval must be included if the sampling season deviates from requirement)	58.10 (b)(4) 58.12(d) App D 4.7	Yes, pages 30 to 58. Yes, pages 30 to 58.	Yes	
36.	Sampling schedule for PM ₁₀	58.10 (b)(4) 58.12(e) App D 4.6	Yes, pages 30 to 58.	Yes	
37.	Sampling schedule for Pb	58.10 (b)(4) 58.12(b) App D 4.5	Yes, pages 30 to 58.	Yes	
38.	Sampling schedule for PM _{10-2.5}	58.10 (b)(4) 58.12(f) App D 4.8	Yes, pages 30 to 58.	Yes	

	ANP requirement	Citation within 40 CFR 58	Was the info submitted?¹ If yes, page #s. Flag if incorrect?²	Does the information provided³ meet the req?⁴	Notes
39.	Minimum # of monitors for O3 met? [Note: should be supported by MSA ID, MSA population, DV, # monitors, and # required monitors] (<i>see footnote</i>) ⁷	App D, 4.1(a) & Table D-2	Yes, pages 22 to 30.	Yes	
40.	Identification of max. conc. O3 monitor(s)	App D 4.1 (b)	Yes, pages 30 to 58.	Yes	
41.	Minimum monitoring requirements met for near-road NO2 (2015 start date)	<i>App D 4.3.2</i>	Yes, pages 22 to 29.	Yes	
42.	Minimum monitoring requirements met for area-wide NO2	<i>App D 4.3.3</i>	Yes, pages 22 to 29.	Yes	
43.	Minimum monitoring requirements met for SO2 [Note: Only monitors considered to be required SLAMs are eligible to be counted towards meeting minimum monitoring requirements.]	App D 4.4	Yes, pages 22 to 29.	Yes	
44.	Minimum monitoring requirements met for Pb [Note: Only monitors considered to be required SLAMs are eligible to be counted towards meeting minimum monitoring requirements.]	App D 4.5 58.13(a)	Yes, pages 22 to 29.	Yes	

⁷ Only monitors considered to be required SLAMs are eligible to be counted towards meeting minimum monitoring requirements. In addition, ozone monitors that do not meet traffic count/distance requirements to be neighborhood scale (40 CFR 58 Appendix E, Table E-1) cannot be counted towards minimum monitoring requirements.

	ANP requirement	Citation within 40 CFR 58	Was the info submitted?¹ If yes, page #s. Flag if incorrect²?	Does the information provided³ meet the req?⁴	Notes
45.	Minimum # of monitors for PM2.5 met? [Note 1: should be supported by MSA ID, MSA population, DV, # monitors, and # required monitors] [<i>Note 2: Only monitors considered to be required SLAMs are eligible to be counted towards meeting minimum monitoring requirements.</i>]	App D, 4.7.1(a) and Table D-5	Yes, pages 22 to 29.	Yes	
46.	Minimum monitoring requirements for continuous PM2.5 met?	App D 4.7.2	Yes, pages 22 to 29.	Yes	These are used for the Air Quality Index only.
47.	Minimum # of monitors for PM10 met?	App D, 4.6 (a) and Table D-4	Yes, pages 22 to 29.		
48.	Minimum monitoring requirements met for PM10-2.5 mass at NCore sites?	App D 4.8 App D 4.7.2	Yes, pages 22 to 29.	Yes	
49.	Distance of site from nearest road	App E 6	Yes, pages 30 to 58.	Yes	

⁷ Only monitors considered to be required SLAMs are eligible to be counted towards meeting minimum monitoring requirements. In addition, ozone monitors that do not meet traffic count/distance requirements to be neighborhood scale (40 CFR 58 Appendix E, Table E-1) cannot be counted towards minimum monitoring requirements.

	ANP requirement	Citation within 40 CFR 58	Was the info submitted?¹ If yes, page #s. Flag if incorrect²?	Does the information provided³ meet the req?⁴	Notes
50.	Traffic count of nearest road	App E	Yes, pages 30 to 58.	Yes	Where traffic counts to the nearest road was unavailable, the traffic count to the nearest road with data was provided.
51.	Probe height	App E 5 App E 2	Yes, pages 30 to 58.	Yes	
52.	Distance from supporting structure	App E 3(b) App E 2	Yes, pages 30 to 58.	Yes	
53.	Distance from obstructions on roof	App E, 4(a)&4(b) App E4(b)	Yes, pages 30 to 58.	Yes	
54.	Distance from obstructions not on roof	App E 9 & E4(a)	Yes, pages 30 to 58.	Yes	
55.	Distance from trees	App E 9 App E 5	Yes, pages 30 to 58.	Yes	
56.	Distance to furnace or incinerator flue	App E 3(b)	Yes, pages 30 to 58.	Yes	
57.	Unrestricted airflow	App E, 4(a)&4(b)	Yes, pages 30 to 58.	Yes	
58.	Probe material (if applicable)	App E 9	Yes, pages 30 to 58.	Yes	
59.	Residence time (if applicable)	App E 9	Yes, pages 30 to 58.	Yes	

Appendix E. Waivers

EPA Region 10 has granted DEQ and LRAPA waivers to discontinue required monitoring that was of lower value in order to keep higher value monitors operational and start up new required monitoring. The tables below show the monitoring sites with waivers and their required reported values from surrogate sources.

1. TSP Lead Waiver

EPA approved ODEQ's request to discontinue TSP lead monitoring at Cascade Mills in McMinnville. The measured TSP lead levels were far below the standard and the monitoring resources were needed for the new Portland, Near Roadway site monitoring. The table below shows the waiver parameters.

Table D 1. McMinnville, Cascade Steel TSP lead Waiver

	Waiver requirement	TSP Lead levels	Comments
McMinnville, Cascade Steel (41-071-1702)	Three year average is < 50% of NAAQS (Std is 0.15ug/m3)	2010 to 2012 three year average was 0.04 µg/m3 or 24% of NAAQS	Waiver approved by EPA

This waiver is due to be reapproved. The Cascade Rolling Mills (Permit # 36-5034) 2011, 2014, and 2017 TSP lead emissions PSELS and actual emissions estimates are shown below and show no increase from when monitoring was done. None of the lead control equipment has been removed from the plant.

Year	PSEL ¹ (tpy)	Actual Emissions Estimates ²
2011	0.5	0.5
2014	0.5	0.5
2017	0.5	0.4

1. Plant Site Emission Limits in TV permit.
2. Actual Emissions Calculated every third year by DEQ using reported production information.

2. Carbon monoxide Waivers

The Medford is a CO maintenance areas but its monitoring site was discontinued in 2010 because of very low concentrations and funding cuts. The maintenance plan requires monitoring however, so EPA and ODEQ agreed upon an alternative method to track CO. The Metropolitan Planning Organization periodically updates their transportation plan and runs a CO emission model. This model is used to track CO. The model is not run every year so the latest result is reported in the table below.

Table D 2. CO emission estimates from the Rogue Valley.

Analysis Year	Medford Area Estimated CO Emissions (tons/yr)
2015	3,485
2020	3,650
2026	3,559
2034	3,871

3. PM10 Waivers

In 2010 the Grants Pass PM10 monitor was discontinued because its values had dropped far below the NAAQS and funding was cut. The PM10 maintenance plans for this site required continued monitoring so EPA and ODEQ agreed upon an alternate method to track PM10. EPA allowed ODEQ to discontinue PM10 monitoring if we used PM2.5 monitoring as a surrogate. In the 2010 network plan, we showed that the PM10 consisted predominantly of PM2.5. We developed correlation equations and calculated 2015 PM10 estimates for these sites based on PM2.5. The PM10 standard is 150 $\mu\text{g}/\text{m}^3$.

Table D 3. Linear regression equations used to estimate PM10 using PM2.5.

	Grants Pass
Linear Regression Equation	$y = 1.2x + 2.6$
Y = PM10, X = PM2.5	

Table D 4. 2013 PM10 estimates for Klamath Falls and Grants Pass.

	with Forest Fire Days Included ^a		No Forest Fire Days Included	
	PM2.5 98 th Percentile ($\mu\text{g}/\text{m}^3$)	PM10 98 th Estimate ($\mu\text{g}/\text{m}^3$)	PM2.5 98 th Percentile ($\mu\text{g}/\text{m}^3$)	PM10 98 th Estimate ($\mu\text{g}/\text{m}^3$)
Grants Pass (41-033-0114)	27	38	25	33

a. All of the PM2.5 days higher than and including the 98th percentile were from forest fire impacts.

4. Existing Monitoring Waivers.

- 4.1 2005 - Klamath Falls CO Monitoring Waiver Approval
- 4.2 2011 - Klamath Falls PM10, Grants Pass PM10, and Medford CO Monitoring Waiver Request and Approval
- 4.3 2012 - McMinnville Lead Monitoring Waiver Request and Approval
- 4.4 2012 - NCORE NOy Monitoring Waiver Request and Approval

5. New Monitoring Waiver Request

- 5.1 2018 - Grants Pass PM2.5 Monitoring Frequency Waiver Request

4.1. 2005 Klamath Falls CO Monitoring Waiver Approval



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 REGION 10
 1200 Sixth Avenue
 Seattle, WA 98101

Reply to
 Attn Of: AWT-107

20 JUL 2005

David Collier, Manager
 Program Operations Division
 Oregon Department of Environmental Quality
 811 SW Sixth Avenue
 Portland, OR 97204-1390

Subject: Removal of Klamath Falls Carbon Monoxide Monitor

Dear Mr. Collier:

Thank you for your letter of July 11, 2005 explaining your decision to discontinue CO monitoring in Klamath Falls, Oregon. Current CO levels have been about one half of the standard and future trends suggest that CO concentrations will decrease further as the local motor vehicles and fuels continue to be replaced by cleaner vehicles and fuels.

Periodic review of area growth rates and emission inventory estimates for CO in Klamath Falls, as part of the 3-year periodic statewide emission inventory cycle, will assure that CO levels continue to remain below the CO standard. In the unlikely event that CO emissions in Klamath Falls increase significantly, ODEQ agrees that the monitor will be restarted. This approach will ensure that CO monitoring will resume before CO levels reach the 8-hour CO standard and is acceptable to EPA.

Sincerely,

A handwritten signature in cursive script that reads "Mahbubul Islam".

Mahbubul Islam, Manager
 State and Tribal Air Programs Unit

cc: ✓ Jeff Smith, ODEQ
 Connie Robinson
 Keith Rose

4.2. 2011 - Klamath Falls PM10, Grants Pass PM10, and Medford CO Monitoring Waiver

Request and Approval

Waiver Request:

**Justification for Discontinuation of Monitoring in Carbon Monoxide and PM10 Maintenance Areas
(This document is too large to post here and is available upon request)**

Waiver Approval:

Note that page two is missing but the page one has the approval of the waiver.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 REGION 10
 1200 Sixth Avenue, Suite 900
 Seattle, WA 98101-3140

JAN 0 6 2012

OFFICE OF
 AIR, WASTE AND TOXICS

Mr. Anthony Barnack
 Air Monitoring Program
 Oregon Department of Environmental Quality
 811 SW Sixth Avenue
 Portland, Oregon 97204-1390

Department of Environmental Quality
 Air Quality Division

JAN 09 2012

RECEIVED

Dear Mr. Barnack:

We have evaluated the 2011 Oregon Ambient Air Monitoring Network Plan, which describes changes to the OR monitoring network for 2011-12. The proposed changes, and EPA's responses, are listed below:

Discontinued Monitors:

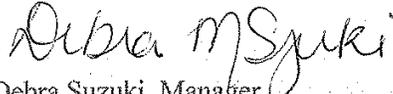
- 1) Discontinued PM_{2.5} FRM sampling at Bend, Pump Station (41-017-0120). This site has been consistently below 75% of the NAAQS. A nephelometer remains at the site for the woodstove advisory program. EPA approves this change.
- 2) Discontinued PM_{2.5} FRM duplicate sampling at Hillsboro, Hare Field (41-067-0004). The reductions in PM_{2.5} FRM samplers in 2011 resulted in a lowering of the requirement duplicate sites from three to two. EPA approves this change.
- 3) Discontinued air toxics monitoring at Salem, State Hospital (41-047-0041). Site was deemed to have enough data. Resources were moved to support an air toxics site in Klamath Falls. EPA approves this change.
- 4) Discontinued the Halsey field burning meteorology site. EPA approves this change.
- 5) Discontinued monitoring for wet Mercury Deposition January 1, 2011 at Beaverton Highland Park (41-067-0111). The grant's funding ended. EPA approves this change.
- 6) Discontinued PM₁₀ FRM sampling at Eugene, Lane Community College (41-039-0013). This site was redundant as discussed in the five year plan. EPA approves this change.
- 7) Discontinue CO monitors in Eugene, at the Lane Community College site (41-039-0013), and in Medford, the Rogue Valley Mall site (41-029-0018). EPA approves discontinuing these monitors, and the justification for discontinuing these monitors provided in the ODEQ report "Justification for Discontinuing of Monitoring in Carbon Monoxide and PM₁₀ Maintenance Areas" (October 2011).

- a) Portland/SE Lafayette
- b) Eugene/Amazon Park
- c) Medford/Grant & Belmont
- d) Klamath Fall

3. Pre-cursor gas monitors at the Portland/SE Lafayette NCore site

“Core” monitors are those monitors in the network that must be operated with available PM2.5 monitoring funds. The “non-core” PM2.5 monitors in the State’s network can be operated at ODEQ’s discretion with any remaining federal funds or State funds. If you have any questions about our approval of the Oregon monitoring network, please contact Keith Rose at (206) 553-1949.

Sincerely,



Debra Suzuki, Manager
State and Tribal Program Unit

4.3. 2012 - McMinnville Lead Monitoring Waiver Request and Approval Waiver Request

Note that the Re: statement is labeled NOy but the content is for TSP lead.



Oregon

John A. Kitzhaber, MD, Governor

Department of Environmental Quality
Laboratory and Environmental Assessment Division
3150 NW 229th, Suite 150
Hillsboro, OR 97124
Voice & TTY (503) 693-5700
FAX (503) 693-4999

Dennis McLerran
Region Ten Administrator
U.S. Environmental Protection Agency
Region 10
1200 Sixth Avenue, Suite 900
Seattle, WA 98101-3140

Re: Waiver request for substituting NOx for NOy monitoring at the Oregon NCORE site.

Dear Mr. McLerran,

Oregon DEQ requests a waiver to discontinue TSP lead monitoring at our McMinnville, Cascade Steel fence line monitoring site. This is allowed by EPA as stated in CFR, Part 58, App D, sec 4.5(a) (ii):

'The Regional Administrator may waive the requirement in paragraph 4.5(a) for monitoring near Pb sources if the State or, where appropriate, local agency can demonstrate the Pb source will not contribute to a maximum Pb concentration in ambient air in excess of 50 percent of the NAAQS (based on historical monitoring data, modeling, or other means). The waiver must be renewed once every 5 years as part of the network assessment required under §58.10(d).'

The TSP lead monitor operational funds will be transferred to the Portland NO₂ roadway site to operate the required CO monitor. The CO monitor is not required until 2017 but ODEQ would like to start monitoring for CO early to get a more complete data set for the roadway site.

Low Lead Levels

In 2010, ODEQ started TSP lead monitoring in McMinnville outside the Cascade Steel (41-072-1702). The annual maximum three month rolling average for the first 2 ½ years is below 1/3 of the NAAQS (Figure 1). The CFR allows a waiver if the levels are below ½ of the NAAQS.

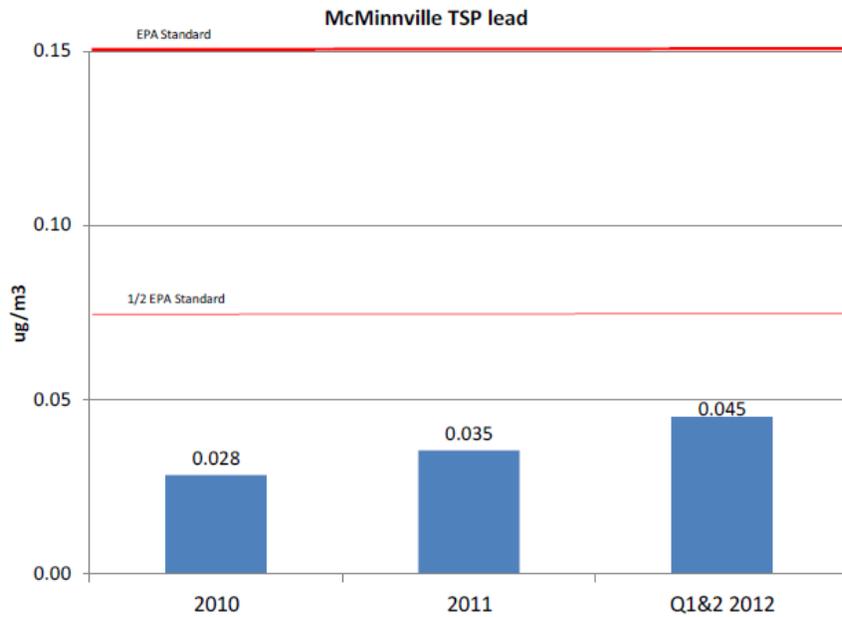


Figure 1. McMinnville, Cascade Rolling Mill's maximum three month rolling average TSP Lead.

Cascade Rolling Mills has a Title V permit and it will continue to be inspected by ODEQ staff. The facility is required to continue reporting their annual production levels which will be used to calculate their emissions inventory.

Sincerely,

Jeff Smith
Air Quality Monitoring Manager
Oregon DEQ

Cc Keith Rose, EPA, Region 10, Chris Hall, EPA, Region 10

Waiver Approval:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 REGION 10
 1200 Sixth Avenue, Suite 900
 Seattle, WA 98101-3140

OCT 25 2012

OFFICE OF
AIR, WASTE AND TOXICSDEQ - HQ
AIR QUALITY DIVISION

OCT 29 2012

RECEIVED

Mr. Anthony Barnack
 Air Monitoring Program
 Oregon Department of Environmental Quality
 811 SW Sixth Avenue
 Portland, OR 97204-1390

Dear Mr. Barnack:

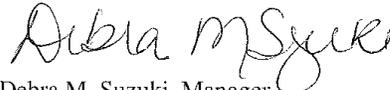
We have evaluated the 2012 Oregon Ambient Air Monitoring Network Plan, which describes changes to the OR monitoring network for 2012-13. The proposed changes, and EPA's responses, are listed below:

1. ODEQ submitted an NO₂ Roadway monitoring site plan which proposed an NO₂ near roadway site in Portland, to be installed and operated in 2013, pending identification of a specific monitoring location and funding to operate this site. EPA cannot approve the monitoring site until a specific location has been selected and ODEQ commits to operating it. When these conditions have been met, ODEQ should modify its NO₂ near roadway plan, and resubmit the plan to EPA for review and approval.
2. ODEQ desires to discontinue the NO_y monitor at the Portland NCore site, and use data from the collocated NO₂ as a substitute for the NO_y data. If ODEQ can demonstrate that NO_y and NO_x concentrations are nearly identical at this site, then EPA can approve discontinuing the NO_y monitor as long as the NO₂ monitoring continues operation. EPA can approve this request upon the demonstration by ODEQ that there is a negligible difference between the NO_y and NO_x levels at this site, as explained in Part 58, Appendix D, section 3(b)(1):
'Although the measurement of NO_y is required in support of a number of monitoring objectives, available commercial instruments may indicate little difference in their measurement of NO_y compared to the conventional measurement of NO_x, particularly in areas with relatively fresh sources of nitrogen emissions. Therefore, in areas with negligible expected difference between NO_y and NO_x measured concentrations, the Administrator may allow for waivers that permit NO_x monitoring to be substituted for the required NO_y monitoring at applicable NCore sites.
3. ODEQ intends to discontinue the Pb TSP monitoring at the fence line of Cascade Rolling Mills in McMinnville, Oregon in 2013. Funding saved by this discontinuation will be transferred to support the operation of a CO monitor at the NO₂ roadway site. To date, the results of the McMinnville Pb monitor are below ¼ of the NAAQS. Shut down of the Pb monitor is allowed under CFR Pt 58, App D, sec 4.5(a)(ii), with the condition that the state demonstrates that the design value is less than 50% of the NAAQS. ODEQ will have to submit the data, and calculation of the design value, to EPA for review before we can approve shutting down this site.

- c) Medford/Grant & Belmont
 - d) Klamath Fall
3. Pre-cursor gas monitors at the Portland/SE Lafayette NCore site

With this letter, EPA is approving the Oregon Annual Monitoring Network Plan, including the area-wide NO₂ monitor at the Portland NCore site, but is not approving the plan for NO₂ near roadway monitoring. As explained above, ODEQ should modify its NO₂ near roadway monitoring plan to identify a specific monitoring location and resubmit the plan to EPA for approval. If you have any questions about our approval of the Oregon monitoring network, please contact Keith Rose at (206) 553-1949.

Sincerely,



Debra M. Suzuki, Manager
State and Tribal Program Unit

cc: Paul Kaprowski, OOO
Keith Rose, OAWT
Chris Hall, OEA
Jeff Smith, ODEQ
Claudia Vaupel, OAWT

4.4. 2012 - NCORE NOy Monitoring Waiver Request and Approval Waiver Request



Oregon

John A. Kitzhaber, MD, Governor

Department of Environmental Quality

Headquarters
811 SW Sixth Avenue
Portland, OR 97204-1390
(503) 229-5696
FAX (503) 229-6124
TTY: 711

November 27, 2012

Dennis McLerran
Region Ten Administrator
U.S. Environmental Protection Agency
Region 10
1200 Sixth Avenue, Suite 900
Seattle, WA 98101-3140

Re: Waiver request for substituting NOx for NOy monitoring at the Oregon NCORE site.

Dear Mr. McLerran,

For many years the Oregon Department of Environmental Quality (ODEQ) has operated a required NOx monitor at our population orientated site in SE Portland for the purpose of collecting NO₂ data to determine our compliance with the National Ambient Air Quality Standards (NAAQS). With the development of the EPA's NCORE network of multi-pollutant sites, a monitor for NOy was added to this site. An NOy monitor does not provide reference method NO₂ data, so it was necessary to operate both NOx and NOy monitors at the same location.

The Oregon Department of Environmental Quality (ODEQ) requests a waiver to discontinue NOy monitoring at our Portland NCORE site at SE Lafayette (41-051-0080) and use the existing NOx monitor at the site as a surrogate. This is allowed by EPA as stated in CFR, Pt 58, App D, sec 3(b) (1):

"Although the measurement of NOy is required in support of a number of monitoring objectives, available commercial instruments may indicate little difference in their measurement of NOy compared to the conventional measurement of NOx, particularly in areas with relatively fresh sources of nitrogen emissions. Therefore, in areas with negligible expected difference between NOy and NOx measured concentrations, the Administrator may allow for waivers that permit NOx monitoring to be substituted for the required NOy monitoring at applicable NCore sites."

We request this waiver for two reasons:

- 1) The NOx and NOy values measured at this site are almost identical. To continue to collect near identical data provides no additional environmental benefit, and
- 2) As part of the recent revisions to the National Ambient Air Quality Standards (NAAQS) for NO₂ there is a new requirement to operate a near roadway site in the Portland area. EPA has not provided any additional funds to support the operation of the required Portland NO₂ roadway monitor. States are expected to reduce or eliminate low priority or redundant monitoring to fund the operation of these new sites. Funds currently supporting the NOy monitor would be shifted to operate the NO₂ roadway monitor.

Redundant NOx and NOy values

The data from the most recent five calendar quarters shows that NOy and NOx at the Portland NCORE site are nearly identical. Continuing monitoring for both will not provide any additional environmental benefit. Three statistical approaches were used to determine redundancy: diurnal average comparison, linear regression, and t-test.

Diurnal Averages

Each hour of the day was average over the year and graphed for NOy and NOx (figure 1). This provides a qualitative and visual analysis of the similarity of the pollutants. The NOy and NOx levels at the NCORE site are very similar.

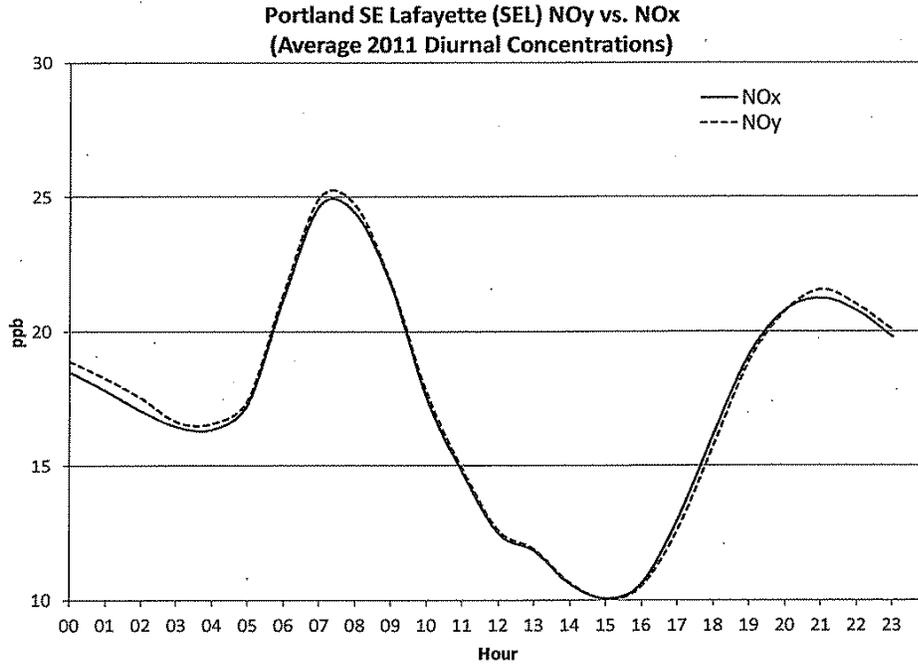


Figure 1. NCORE site NOx and NOy diurnal concentration comparison. (2011 data)

Linear Regression

Linear regression is a quantitative comparison of the difference between NOx and NOy (Figure 2). Similarity is determined by the slope, the y-intercept, and the variance of the data (R^2). The linear regression showed very good correlation with a slope of 0.98, a y-intercept of 0.3 ppb, and a very high R^2 at 0.99. All this shows the two data sets are almost identical.

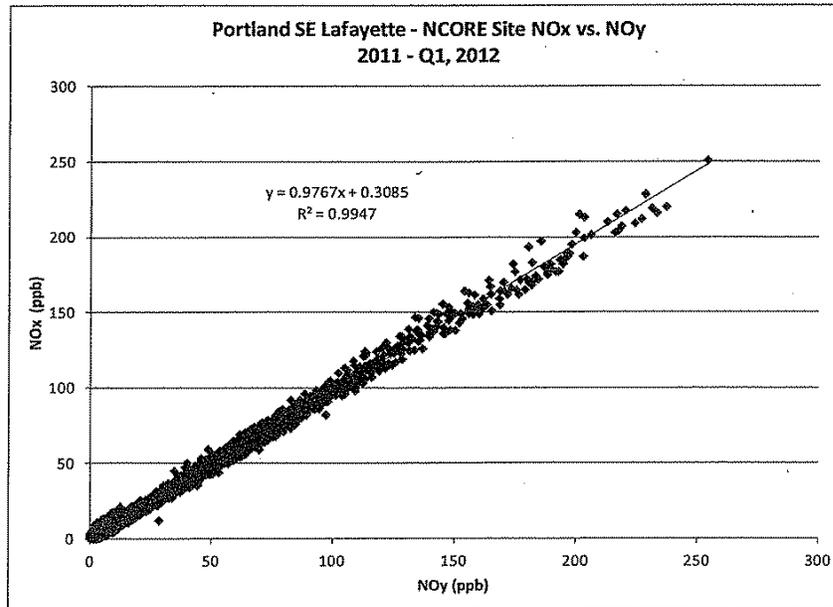


Figure 2. NCORE site NOx and NOy linear regression comparison. (2011 & Q1 2012 data)

T-Test

A t-test is used to see if the difference between two independent data sets is significant. The difference between two independent data sets is generally considered insignificant when the P value > 0.05 . The t-test of NOy and NOx results in a value of $P = 0.71$. The t-test shows that the difference between NOy and NOx are insignificant. (2011 & Q1 2012 data).

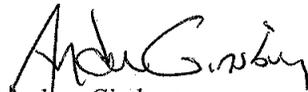
Best Use of Monitoring Funds

Over the past decade, ODEQ has worked with EPA Region 10 to examine and adjust monitoring priorities to implement both budget cuts and new monitoring requirements. A successful approach has been to repurpose funds from low priority or redundant monitors to the new required monitors. To fund the operation of NO₂ monitoring at the new roadway site, we will have to do this again. The NOy monitor at the NCORE site is the best candidate to discontinue because it is redundant with the collocated NOx monitor. The monitoring costs for NOy and NO₂ are similar and shifting the funds from the NOy monitor to the NO₂ roadway monitoring should not require any additional monitoring cuts.

In conclusion, the NOy monitor resources are an ideal source of funding for the NO₂ monitor at the new required near roadway site. The operational costs for NOy and NO₂ monitoring are very similar. Discontinuing NOy will not result in a loss of meaningful data at the NCORE site because the existing NOx monitor data is almost identical.

Thank you for considering our request for this waiver.

Sincerely,



Andrew Ginsburg
Air Quality Administrator,
Oregon Department of Environmental Quality

cc Keith Rose, Region 10, EPA, Chris Hall, Region 10, EPA

Waiver Approval



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

RESEARCH TRIANGLE PARK, NC 27711

February 20, 2014

OFFICE OF
AIR QUALITY PLANNING
AND STANDARDS

Mr. Andrew Ginsburg
Air Quality Administrator
Oregon Department of Environmental Quality
811 SW Sixth Avenue
Portland, Oregon 97204-1390

Dear Mr. Ginsburg:

In a letter dated November 27, 2012, you requested a waiver to substitute NO_x (nitric oxide + nitrogen dioxide) data for the required measurement of NO_y (reactive oxides of nitrogen) at the Portland National Core (NCore) network station (AQS site ID: 41-051-0080). On April 8th of 2013, Region 10 provided you a letter with their approval of that request. However, EPA's monitoring regulations provide that these types of approvals are made by the EPA Administrator or designee. This authority has been delegated to the Director of the Air Quality Assessment Division in EPA's Office of Air Quality Planning and Standards. Therefore, this letter transmits our approval of your request to substitute NO_x data for NO_y data at your Portland NCore station in accordance with the applicable monitoring regulations in Appendix D to Part 58, section 3(b)(1).

In considering your waiver request to use NO_x monitoring data in place of NO_y monitoring data we reviewed your letter and associated assessments, dialogued with Region 10, performed our own analysis such as examining the PM_{2.5} and ozone design values for the Portland CBSA, and solicited input from a variety of interested technical users here in our office. We also factored in the resource constraints you identified in your letter, which include measuring NO₂ at a near-road and an area-wide monitoring station in the Portland CBSA. While there are a number of reasons data users value the NO_y data (e.g., consistency with all other NCore stations, ability to measure more of the reactive nitrogen, and evaluating models) given your unique situation, on balance we are supporting your waiver request. However, we reserve the right to request NO_y monitoring at a future date based upon the need for data at that time (e.g., SIP planning), changes in air quality, changes in NAAQS, or better use and interpretation of the NO_y data (especially when collocated with a true NO₂ monitor).

Thank you for your program's efforts in operating your NCore station. For questions you may contact Tim Hanley at hanley.tim@epa.gov and 919-541-4417.

Sincerely,

A handwritten signature in cursive script that reads "Richard A. Wayland".

Richard A. Wayland
Director
Air Quality Assessment Division

cc: Debra Suzuki, EPA Region 10
Keith Rose, EPA Region 10

5.1. 2018 Grants Pass PM2.5 Monitoring Frequency Waiver Request

Waiver Request



Oregon

Kate Brown, Governor

Department of Environmental Quality
 Laboratory and Environmental Assessment Division
 7202 NE Evergreen Parkway, Suite 150
 Hillsboro, OR 97124
 Voice & TTY (503) 693-5700
 FAX (503) 693-4999

January 22, 2018

Doug Jager

U.S. EPA, Region 10
 1200 Sixth Avenue, Suite 900
 Seattle, WA 98101

Re: Waiver to operate the Grants Pass, 103 funded PM2.5 SLAMS site on a one in six schedule.

Oregon DEQ requests a waiver to operate the Grants Pass, Parkside School (41-033-0114) PM2.5 Federal Reference Method monitor on a one in six schedule instead of the requisite one in three schedule. The waiver is allowed per 40 CFR Part 58.12 (d)(1)(i, ii). This section states,

“The EPA Regional Administrator may grant sampling frequency reductions after consideration of factors (including but not limited to the historical PM_{2.5} data quality assessments, the location of current PM_{2.5} design value sites, and their regulatory data needs) if the Regional Administrator determines that the reduction in sampling frequency will not compromise data needed for implementation of the NAAQS. Required SLAMS stations whose measurements determine the design value for their area and that are within ±10 percent of the annual NAAQS, and all required sites where one or more 24-hour values have exceeded the 24-hour NAAQS each year for a consecutive period of at least 3 years are required to maintain at least a 1-in-3 day sampling frequency until the design value no longer meets these criteria for 3 consecutive years.”

The Grants Pass Parkside School PM2.5 FRM is the only monitoring site in the Grants Pass Metropolitan Statistical Area and thus is the station that determines the design value. The design value for Grants Pass is below 10% of the daily and annual NAAQS, for at least the past eight consecutive years. The table below provides the design values for the past eight years and that they are outside the ±10 threshold required for every third day monitoring. These data are compared to the value that is 10% below the NAAQS used in 2018 of 35.5(µg/m³) and 12 (µg/m³) respectively. All data is from the EPA AQS AMP480 Design Value Report.

Table 1. Grants Pass, Parkside School PM2.5 Design Values

All Values - µg/m ³	98th Percentile design Value	3yr Aver. 98th Percentile	Is the 3yr aver. 98 th percentile <32.0	Annual Average Design Value	3yr Aver. Of Annual Average	Is the 3yr aver. of the Annual Average <10.8
2007	28.8			8.2		
2008	28.3			9.4		
2009	34.8	30.6	Yes	8.5	8.7	Yes
2010	20.1	27.7	Yes	6.4	8.1	Yes
2011	30	28.3	Yes	7.6	7.5	Yes
2012	17.8	22.6	Yes	6.9	7.0	Yes
2013	35.5	27.8	Yes	11.9	8.8	Yes
2014	25.7	26.3	Yes	7.4	8.7	Yes
2015	18.4	26.5	Yes	8.3	9.2	Yes
2016	15.2	19.8	Yes	5.8	7.2	Yes

If you have any questions, contact Anthony Barnack at 503.693.5708 or email at barnack.anthony@deq.state.or.us. Thank you for your consideration.

Sincerely,

Anthony Barnack
 Ambient Air Monitoring Coordinator, Oregon DEQ

Waiver Approval

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 REGION 10

1200 Sixth Avenue, Suite 900
 Seattle, WA 98101-3140

MAR 26 2018

OFFICE OF
 AIR AND WASTE

Mr. Anthony Barnack
 Air Monitoring Program
 Oregon Department of Environmental Quality
 811 SW Sixth Avenue
 Portland, Oregon 97204-1390

Dear Mr. Barnack:

This letter is in response to your request to perform PM_{2.5} sample collection at a frequency of every sixth day (1:6) at the Grants Pass air monitoring station. The required every third day (1:3) sample collection frequency for a State and Local Air Monitoring Station (SLAMS) PM_{2.5} monitor can be reduced if the operating schedule requirements are met for the PM_{2.5} monitor. See 40 CFR Part 58.12 (d)(1)(ii).

The EPA Region 10's review of the information provided by the Oregon Department of Environmental Quality and the data in the Air Quality System determined that the reduction in sampling frequency will not compromise data needed for implementation of the PM_{2.5} National Ambient Air Quality Standards. As such, the EPA Region 10 grants a waiver from the required 1:3 sample collection at the SLAMS Grants Pass monitoring station (AQS ID: 41-033-0114) and substitutes the required PM_{2.5} sample collection with a 1:6 sample frequency.

The ODEQ should continue to periodically verify that the Design Value at the Grants Pass monitor is not within $\pm 10\%$ of the PM_{2.5} Annual NAAQS and ensure that this monitor does not exceed the Daily NAAQS for a period of 3 consecutive years. ODEQ and the EPA Region 10 will annually reassess the data supporting maintaining a 1:6 sample collection frequency for this monitor in the State of Oregon's Annual Network Plan. If you have any questions regarding this approval, please contact Doug Jager of my staff at (206) 553-2961.

Sincerely,

A handwritten signature in black ink that reads "Gina Bonifacino".

Gina Bonifacino
 Acting Manager, Air Planning Unit

acting mgr

Appendix F. Interstate Memos of Understanding

F.1 Portland/Vancouver Airshed.

Memorandum of Agreement
Between
Oregon Department of Environmental Quality
And
Washington Department of Ecology

I. PURPOSE

This Memorandum of Understanding (MOU) is entered into by and between the Oregon Department of Environmental Quality Air Quality Program, hereinafter referred to as ODEQ, and the Washington Department of Ecology Air Quality Program, hereinafter referred to as WDOE.

The purpose of this MOU is to agree in principle to cooperate with shared resources to collectively meet the United States Environmental Protection Agency (US EPA) minimum monitoring requirements for criteria air pollutants in the Portland-Vancouver-Hillsboro, OR-WA Metropolitan Statistical Area (MSA).

II. STATEMENT OF MUTUAL BENEFITS AND INTEREST

The Portland-Vancouver-Hillsboro, OR-WA MSA consists of Clackamas, Columbia, Multnomah, Washington, and Yamhill Counties in Oregon and Clark and Skamania Counties in Washington. The network design criteria for ambient air quality monitoring described in 40 C.F.R. § 58 Appendix D require that in areas where metropolitan statistical areas (MSAs) cross jurisdictional boundaries, “full monitoring requirements apply separately to each affected State or local agency in the absence of an agreement between the affected agencies and the EPA Regional Administrator.” This MOU establishes an agreement that ODEQ and WDOE cooperatively meet the minimum monitoring requirements in the Portland-Vancouver-Hillsboro, OR-WA MSA.

The Portland-Vancouver-Hillsboro, OR-WA MSA had an estimated population of 2,453,168 as of July 1, 2017. Based on 40 C.F.R. § 58 Appendix D, the following minimum monitoring requirements for criteria pollutants apply to an MSA of this population size:

Pollutant	Minimum Number of Required Monitors
Ozone (O ₃)	2
Carbon Monoxide (CO)	2
Nitrogen Dioxide (NO ₂)	2*
Sulfur Dioxide (SO ₂)	1
Particulate Matter ≤10µm (PM ₁₀)	2
Fine Particulate Matter (PM _{2.5})	3

* An additional NO₂ monitor will be required if the population of the MSA grows above 2,500,000 people.

As of January 1, 2019, the minimum monitoring requirements were met or exceeded in the Portland-Vancouver-Hillsboro, OR-WA MSA for each of the criteria pollutants listed above.

III. GENERAL ROLES

ODEQ and WDOE formally agree to collectively provide adequate criteria pollutant monitoring as required by 40 C.F.R. § 58 Appendix D. Each agency shall inform the other agency at its earliest convenience via telephone or email of any monitoring changes within the Portland-Vancouver-Hillsboro, OR-WA MSA that impact the minimum monitoring requirements. In the event that new minimum monitoring requirements are imposed after the execution of this MOA, ODEQ and WDOE agree to consult and jointly determine how to meet the new requirements.

IV. IT IS MUTUALLY AGREED AND UNDERSTOOD BY AND BETWEEN THE SAID PARTIES THAT:

- A. This instrument is neither a fiscal nor a funds obligation document. Any endeavor involving reimbursement or contribution of funds between the parties to this instrument will be handled in accordance with applicable laws, regulations, and procedures, including those for government procurement and printing. Such endeavors will be outlined in separate agreements that shall be made in writing by representatives of the parties, and shall be independently authorized by appropriate statutory authority. This instrument does not provide such authority.
- B. This instrument in no way restricts ODEQ or WDOE from participating in similar activities with other public or private agencies, organizations, and individuals.
- C. Pursuant to Section 22, Title 41, United States Code, no Member of, or Delegate to, Congress shall be admitted to any share or part of this instrument, or any benefits that may arise therefrom.
- D. Nothing in this MOU shall be construed as obligating either party to expend funds or to make any contract or other obligation for the future payment of money in excess of appropriations authorized by law and administratively allocated for this purpose.
- E. Modifications within the scope of this instrument shall be made by mutual consent of the parties, by the issuance of a written modification, signed and dated by both parties.
- F. Either party(s), in writing, may terminate the MOU in whole, or in part, at any time before the date of expiration provided that written notice is sent to the other party at least 120 calendar days prior to the termination date.
- G. This MOU shall be effective upon execution by both parties and shall remain in effect for a period of 5 years unless otherwise modified. This agreement can be extended if mutually agreed to by both parties.

H. The principal contacts for this instrument are:

Oregon Department of Environmental Quality
Anthony Barnack, Ambient Monitoring Coordinator
7202 NE Evergreen Parkway, Suite 150
Hillsboro, OR 97124-6166
(503)693-5708

Washington Department of Ecology
Jill Schulte, Air Monitoring Coordinator
PO Box 47600
Olympia, WA 98504-7600
(360) 407-6877

In Witness whereof, the parties hereto have executed this MOU as of the last date written below:

Date Tom Roick
Air Quality Monitoring Manager
Oregon Department of Environmental Quality

Date Kathy Taylor
Deputy Program Manager
Air Quality Program
Washington Department of Ecology

Appendix G. Review of Violating monitor changes.

DEQ, LRAPA, and EPA may decide that a monitoring location, method, frequency, or other properties needs to be changed to provide more accurate or representative information for an area. Any changes will go through public notice and be approved by Region 10 EPA, Oregon DEQ or (Lane Regional Air Protection Agency depending on the location). Changes will meet the siting criteria in 40 CFR Part 58.