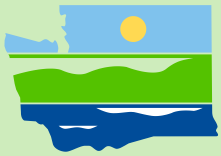

DEPARTMENT OF
ECOLOGY
State of Washington

Washington State Implementation Plan

Infrastructure SIP Revision for the 2010 Nitrogen Dioxide, 2008 Ozone, and 1997, 2006, and 2012 Fine Particulate Matter National Ambient Air Quality Standards

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For more information, contact:

Air Quality Program
P.O. Box 47600
Olympia, WA 98504-7600

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

For special accommodations or documents in alternate format, call (360) 407-6800, 711 (relay service), or 877-833-6341 (TTY).

Infrastructure SIP Revision for the 2010 Nitrogen Dioxide, 2008 Ozone, and 1997, 2006, and 2012 Fine Particulate Matter National Ambient Air Quality Standards

by

Washington State Department of Ecology
Air Quality Program

Olympia, Washington

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Executive Summary

Ecology proposes a revision to an air quality plan called a State Implementation Plan (SIP). The part of the plan being revised is for the infrastructure (or basic framework, including legal authority and resources) to maintain, enforce, and implement federal standards (National Ambient Air Quality Standards or NAAQS) for nitrogen dioxide, ozone, and fine particle pollution. The proposed revision will add Ecology's existing requirement that permits will be issued only after permit fees are paid.

This infrastructure SIP revision covers the following NAAQS:

- 2010 primary (health-based) 1-hour nitrogen dioxide (NO_2)
- 2008 primary and secondary (welfare-based) 8-hour ozone (O_3)
- 1997 and 2006 primary and secondary 24-hour fine particles ($PM_{2.5}$)
- 1997 primary and secondary annual fine particles ($PM_{2.5}$)
- 2012 primary annual fine particles ($PM_{2.5}$)

Ecology recently submitted SIP revisions to EPA updating statewide ambient air standards, general air quality regulations, and solid fuel burning devices. These revisions provided the needed support to demonstrate Washington's compliance with the infrastructure SIP requirements for nitrogen dioxide, ozone, and fine particle pollution.

Ecology is including an existing rule provision that requires each major stationary source to pay permit fees to cover the full cost of a permit. Approved SIP provisions are federally enforceable by EPA and citizens, the same way as rules that are already included in the SIP.

Introduction

EPA sets National Ambient Air Quality Standards (NAAQS) to protect public health and welfare, and to prevent adverse effects from air pollutants under authority of the Clean Air Act (CAA). The CAA requires that states review their rules and programs approved in the State Implementation Plan (SIP) each time a NAAQS is established or revised. This requirement stems from Section 110(a)(1) and (2) of the CAA and directs states to show they have the authority and means to enforce, implement and maintain these new or revised standards. States do this by submitting SIP revisions often referred to as "infrastructure state implementation plans." These infrastructure SIPs provide assurances of state resources and authorities. Where necessary, the infrastructure SIPs establish the basic state programs to implement, maintain, and enforce new or revised standards. Often, these SIPs simply reaffirm that the appropriate framework exists for any new NAAQS.

This SIP submittal addresses the following new or revised NAAQS:

- 2010 primary 1-hour nitrogen dioxide (NO_2)
- 2008 primary and secondary 8-hour ozone (O_3)
- 1997 and 2006 24-hour fine particles ($PM_{2.5}$)
- 1997 primary and secondary annual fine particles ($PM_{2.5}$)
- 2012 primary annual fine particles ($PM_{2.5}$)

Washington's air quality program is well established and provides the basis for compliance with these NAAQS. Washington has already addressed many elements of Section 110(a)(2)(A)-(M) in the approved SIP or recently submitted SIP revisions. Most of Washington's basic infrastructure requirements, including, but not limited to, permitting programs, fees, personnel and funding, boards and conflict of interest, equally apply to all NAAQS. This SIP revision may reiterate and reinforce some of these previously submitted and approved elements.

Regulations Proposed to be Included in the SIP

In this SIP submittal, Ecology proposes to include a new subsection, WAC 173-400-111(3)(i), in the SIP. The subsection is pertinent to element 110(a)(2)(L), which requires the SIP to include requirements for each major stationary source to pay permitting fees to cover the cost of reviewing, approving, implementing, and enforcing a permit. For more details, see discussion in §110(a)(2)(L) Major stationary source permitting fees.

Regulations Recently Submitted in the SIP

Ecology submitted the following new or revised regulations to EPA for approval in the SIP:

- **Chapter 173-476 WAC, Ambient Air Quality Standards**
  Ecology submitted the new chapter 173-476 WAC, a statewide rule, to EPA for inclusion in the SIP in November 2013. This SIP revision updates ambient air quality standards for carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter and sulfur dioxide. This rule

supports infrastructure SIP requirements for all NAAQS. EPA approved this SIP revision on March 4, 2014[1].

- **Chapter 173-433 WAC, Solid Fuel Burning Devices**
  Ecology submitted the revised chapter 173-433 WAC, a statewide rule, to EPA for inclusion in the SIP in January 2014. The updated rule helps to reduce particulate matter in areas affected by wood smoke. This SIP revision supports infrastructure SIP requirements for particulate matter pollutants. EPA approved this SIP revision on May 9, 2014[2].

- **Chapter 173-400 WAC, General Air Quality Regulations**
  On January 23, 2014, Ecology submitted updated portions of chapter 173-400 WAC to EPA for inclusion in the SIP[3]. The SIP revision applies to all NAAQS. The updated provisions include:

  - revisions to Ecology's new source review and prevention of significant deterioration programs;
  - a clarification of the relationship between Local Air Authority and Ecology regulations;
  - updated adoption by references dates for EPA rules; as well as,
  - various housekeeping and clarification revisions.

[1] See 79 FR 12077 at: http://www.gpo.gov/fdsys/pkg/FR-2014-03-04/pdf/2014-04615.pdf
[2] See 79 FR 26628 at: http://www.gpo.gov/fdsys/pkg/FR-2014-05-09/pdf/2014-10581.pdf
[3] See submittal documents at: https://fortress.wa.gov/ecy/publications/SummaryPages/1302039.html.

Washington's Legal Authority

The Code of Federal Regulations[4] requires states to demonstrate that the State has the necessary legal authority under State law to adopt and implement the plan. This section fulfills this requirement. The laws and citations to the laws provided in this submittal illustrate and support Washington's authority to implement, maintain, and enforce the NAAQS.

The state legislature enacted Washington's first Clean Air Act (Act) in 1967. The Act is codified at Chapter 70.94 of the Revised Code of Washington (RCW). The Act sets out a number of different policies and required actions. It specifies:

- the basic hierarchy of regulatory agencies in the state
- the preference for local air pollution control authorities
- requirements for:
    - permitting of new sources
    - the issuance of air operating permits for some existing sources
    - control of open, agricultural, and silvicultural burning
    - commute trip reduction requirements
    - control of emissions from wood burning appliances (wood fired stoves and heaters)

Under the Act, two state agencies and activated local clean air agencies (LCAAs) have general authority to adopt enforceable emission standards and limitations and other measures necessary for the attainment and maintenance of NAAQS. The two state agencies include:

- Washington State Department of Ecology (Ecology)
- Energy Facilities Site Evaluation Council (EFSEC)

Presently, seven activated LCAAs cover 21 out of 39 counties and some 90 percent of the state's population. These LCAAs include:

- Benton Clean Air Agency (BCAA)
- Northwest Clean Air Agency (NWCAA)
- Olympic Region Clean Air Agency (ORCAA)
- Puget Sound Clean Air Agency (PSCAA)
- Spokane Region Clean Air Agency (SRCAA)
- Southwest Clean Air Agency (SWCAA)
- Yakima Region Clean Air Agency (YRCAA)

Ecology's and LCAAs' authorities are listed in:

- RCW 70.94.331 "Powers and duties of department." This statutory provision authorizes Ecology to adopt rules, and air quality and emission standards to implement the Act's programs and requirements. Ecology is authorized to adopt statewide rules and set minimum emission standards. Per the Governor's letter from March 20, 1980, the Governor delegated the

[4] 40 CFR part 51, Appendix V: Criteria for Determining the Completeness of Plan Submissions

responsibility and authority to submit all amendments to the State implementation Plan to the Director of Ecology.

- RCW 70.94.141 "Air pollution control authority – Powers and duties of activated authority." This statutory provision authorizes local air pollution authorities to adopt their own rules and regulations, and issue orders implementing Washington's Clean Air Act.

EFSEC's activities are governed by chapter 80.50 RCW. EFSEC's powers are listed in RCW 80.50.040 "Energy facility site evaluation council – Powers enumerated" authorizing EFSEC to adopt rules and regulations and issue permits for new construction, reconstruction, or enlargement or operation of energy facilities.

In the case of permitting stationary sources of air pollution, the Act's intent is that local clean air agencies, EFSEC, and Ecology are primarily responsible for implementing programs and rules to control air pollution.

In addition to the Act and chapter 80.50 RCW, Washington also relies on a number of other state laws in implementing its air quality program. These laws include:

- Chapter 34.05 RCW: Administrative procedure act
- Chapter 42.17 RCW: Public disclosure act
- Chapter 42.30 RCW: Open public meetings act
- Chapter 43.21A RCW: Department of ecology

The laws listed above are the same versions of laws that were provided to EPA for reference as a part of the Infrastructure SIP Certification for the 1997 8-hour Ozone National Ambient Air Quality Standard in January 2012[5]. Some changes were made to the Act. None of the changes since this last SIP submittal are relevant to Washington's authority to control NO_2 and O_3 emissions. For $PM_{2.5}$ emissions, the changes resulted in the SIP strengthening revision of chapter 173-433, which EPA approved on May 9, 2014[2].

NAAQS Overview

NAAQS are set under Section 109 of the Clean Air Act. Regulatory information about NAAQS is contained in the Code of Federal Regulations (40 CFR Part 501). EPA sets two types of NAAQS:

1. Primary standards set limits to protect public health, including the health of sensitive populations such as asthmatics, children, and the elderly.
2. Secondary standards set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings.

[5] "Infrastructure SIP Certification for the 1997 8-hour Ozone National Ambient Air Quality Standard" is at http://www.ecy.wa.gov/programs/air/sips/plans/infrastructure.htm; approved on May 24, 2012 (77 FR 30902).

Each standard is measured in one of three ways:

- Parts per million (ppm) by volume
- Parts per billion (ppb) by volume
- Micrograms per cubic meter of air (µg/m^3)

Table 1 below shows the standards that are addressed in this SIP submittal. (Note: $PM_{2.5}$ NAAQS levels that require an infrastructure SIP submittal are underlined.) For a description of each pollutant and NAAQS, see Appendix A: NO2, O3, and PM2.5 NAAQS.

Table 1 "2010 NO_2, 2008 O_3, and 1997, 2006, and 2012 $PM_{2.5}$ National Ambient Air Quality Standards"

	Primary / Secondary	Averaging time	Level			Form of the standard
2010 NO_2	Primary	1-hour	100 ppb			3-year average of the 98th percentile of the annual distribution of daily maximum 1-hour average concentrations
2008 O_3	Primary & Secondary	8-hour	0.075 ppm			Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
			In µg/m^3			
			1997	**2006**	**2012**	
1997, 2006, and 2012 $PM_{2.5}$	Primary & Secondary	24-hour	**65**	**35**	35	98th percentile, averaged over 3 years[6]
	Primary	Annual	**15.0**	15.0	**12.0**	Annual arithmetic mean, averaged over 3 years[7]
	Secondary	Annual	**15.0**	15.0	15.0	Annual arithmetic mean, averaged over 3 years

Area Designations and Compliance with the Standard

2010 Nitrogen Dioxide NAAQS

On January 20, 2012, EPA designated all areas of the country, comprising Washington's six Air Quality Control Regions (AQCRs), as "unclassifiable/attainment" for the 2010 NO_2 NAAQS. EPA acknowledged that the existing NO_2 network does not provide adequate evidence to determine whether or not the new NAAQS is met in all areas and there currently is no evidence of violations anywhere in the country. EPA intends to redesignate areas, as appropriate, after sufficient air quality data are available from the new monitoring network.

Historically, atmospheric concentrations of NO_2 have been declining nationwide (see Figure 1).

[6] The level of the 24-hour standard is defined as an integer (zero decimal places) as determined by rounding. For example, a 3-year average 98th percentile concentration of 35.49 µg/m^3 would round to 35 µg/m3 and thus meet the 24-hour standard and a 3-year average of 35.50 µg/m^3 would round to 36 and, hence, violate the 24-hour standard (40 CFR part 50 Appendix N).

[7] In 2006, EPA tightened the constraints on the spatial averaging criteria by further limiting the conditions under which some areas may average measurements from multiple community-oriented monitors to determine compliance (see 71 FR 61165-61167).

2008 Ozone NAAQS

Based on 2010-2012 monitoring data, EPA designated all areas in Washington as unclassifiable/attainment for the 2008 8-hour O_3 NAAQS. Washington's O_3 design values for 2013 (2011-2013 monitoring data) are also below the 2008 O_3 standard (Figure 2).

1997, 2006, and 2012 Fine Particulate Matter NAAQS

For the 1997 24-hour $PM_{2.5}$ standard, EPA designated all areas of Washington as unclassifiable/attainment. The designations became effective in 2004.

For the 2006 24-hour $PM_{2.5}$ standard, EPA finalized designations in December 2009. One area in Washington, Tacoma in Pierce County, was designated nonattainment for the 2006 24-hour $PM_{2.5}$ standard of 35 $\mu g/m^3$. The rest of the state was classified attainment/unclassifiable. Tacoma nonattainment area is within the Puget Sound Clean Air Agency jurisdiction. Tacoma's high values of $PM_{2.5}$ are caused primarily by residential wood burning – more than half of the fine particle pollution measured in Tacoma during the fall and wintertime is from wood smoke, with another 25 percent from diesel and gasoline vehicles. PSCAA convened a task force and undertook an extensive public outreach to bring the pollution levels down. $PM_{2.5}$ values have since decreased. Based on the 2009-2011 air quality monitoring data, EPA determined that the Tacoma nonattainment area has clean data for the 2006 24-hour $PM_{2.5}$ standard (77 FR 53772, September 4, 2012). EPA's determination relieves the area from the requirement to submit an attainment demonstration, associated reasonably available control measures, a reasonable further progress plan, contingency measures, and other planning State Implementation Plan requirements. PSCAA and Ecology are developing support documents and a maintenance plan to request EPA redesignate the area to attainment.

For the 2012 annual $PM_{2.5}$ standard, EPA plans to determine area designation status by December 12, 2014. Washington submitted its recommendations for area designations on December 6, 2013[8]. Based on the monitoring data, Washington recommended EPA designate Clark, King, Pierce, Snohomish, Spokane, and Yakima counties as attainment, and the rest of the state as unclassifiable[9].

Presently, based on 2011-2013 monitoring data from the $PM_{2.5}$ NAAQS compliance monitors, the 2013 design values are below the $PM_{2.5}$ standards. See Figure 3 "2013 PM2.5 24-hour Design Values" and Figure 4 "2013 PM2.5 Annual Design Values."

[8] http://www.epa.gov/airquality/particlepollution/designations/2012standards/rec/r10warec1.pdf
[9] http://www.epa.gov/pmdesignations/2012standards/state.htm

Figure 1 "U.S. NO2 Air Quality Trend, 1980 - 2012"

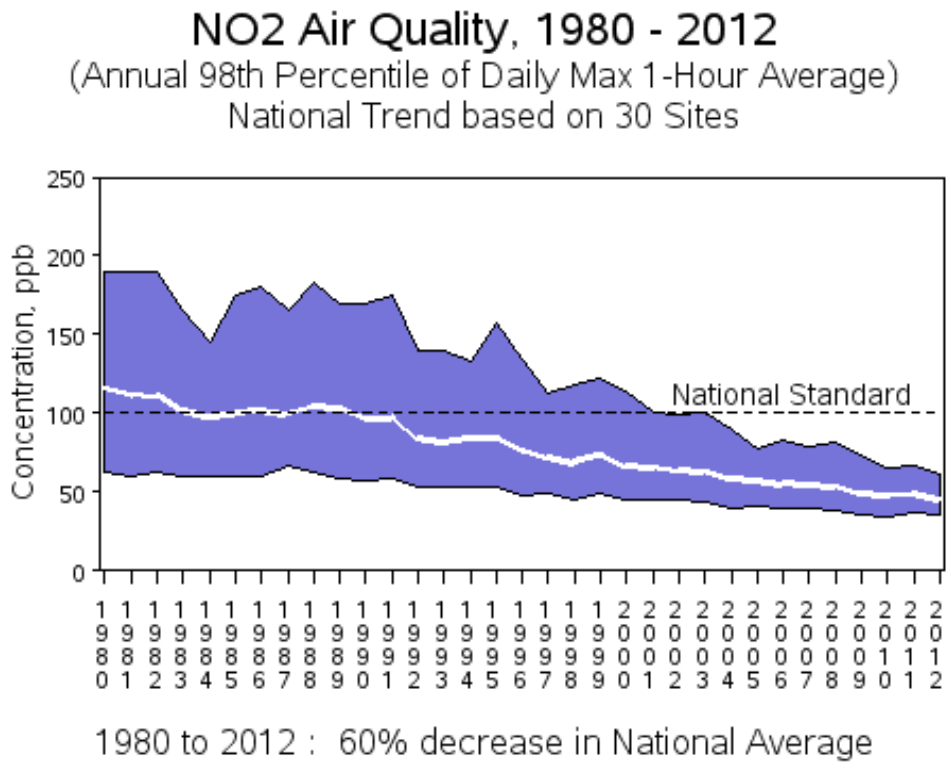


Figure 2 "2013 O_3 8-hour Design Values"

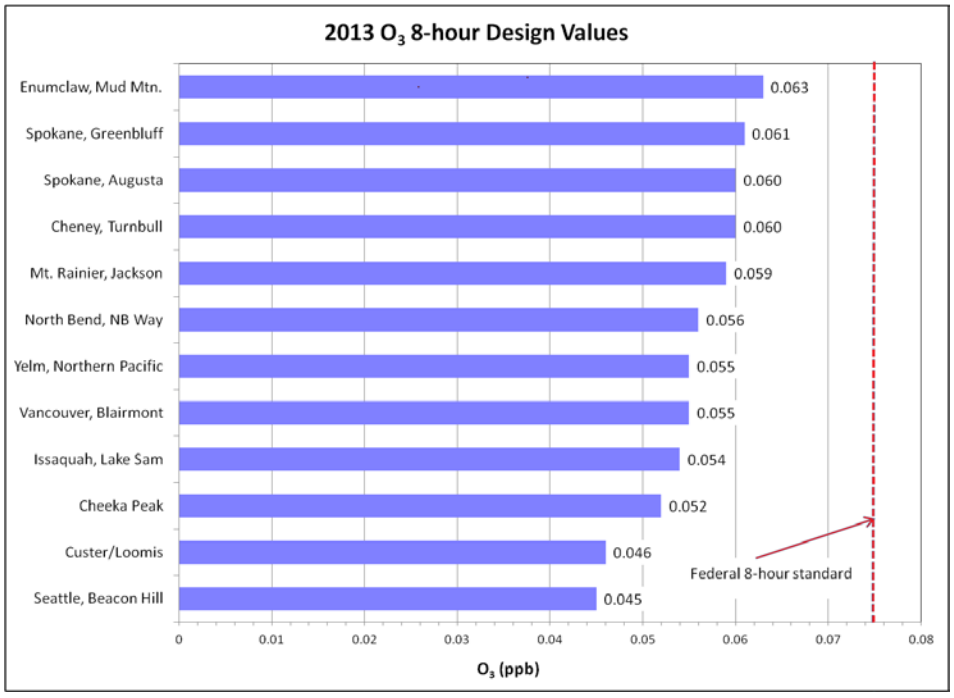


Figure 3 "2013 $PM_{2.5}$ 24-hour Design Values"

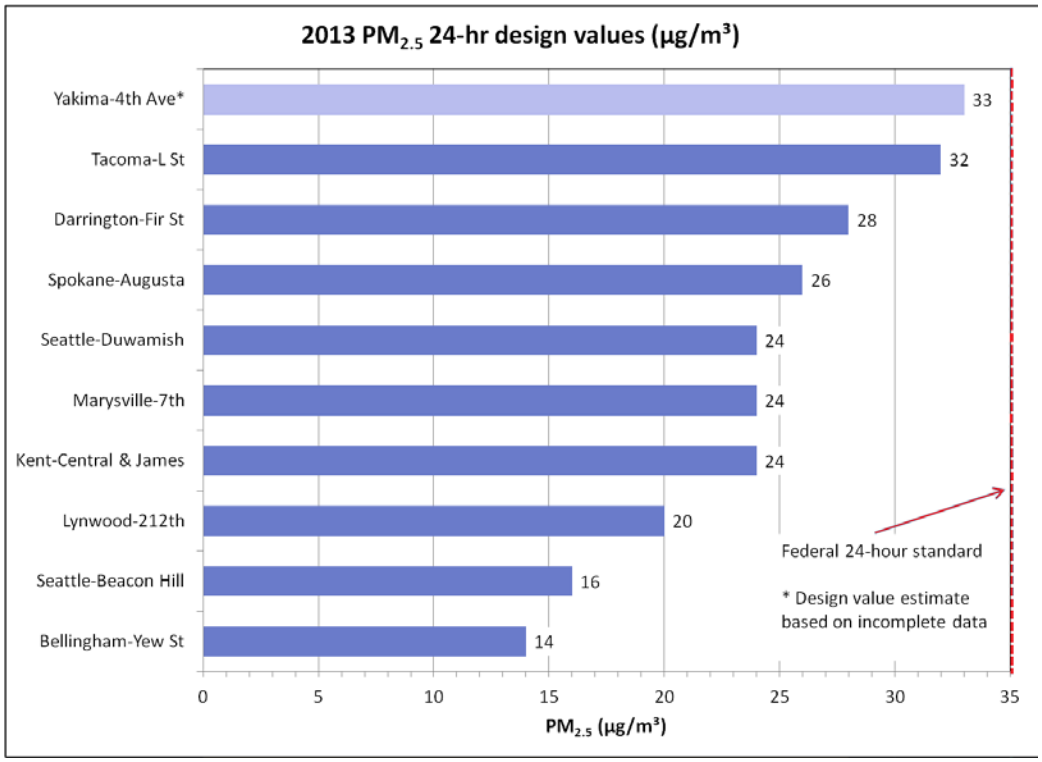
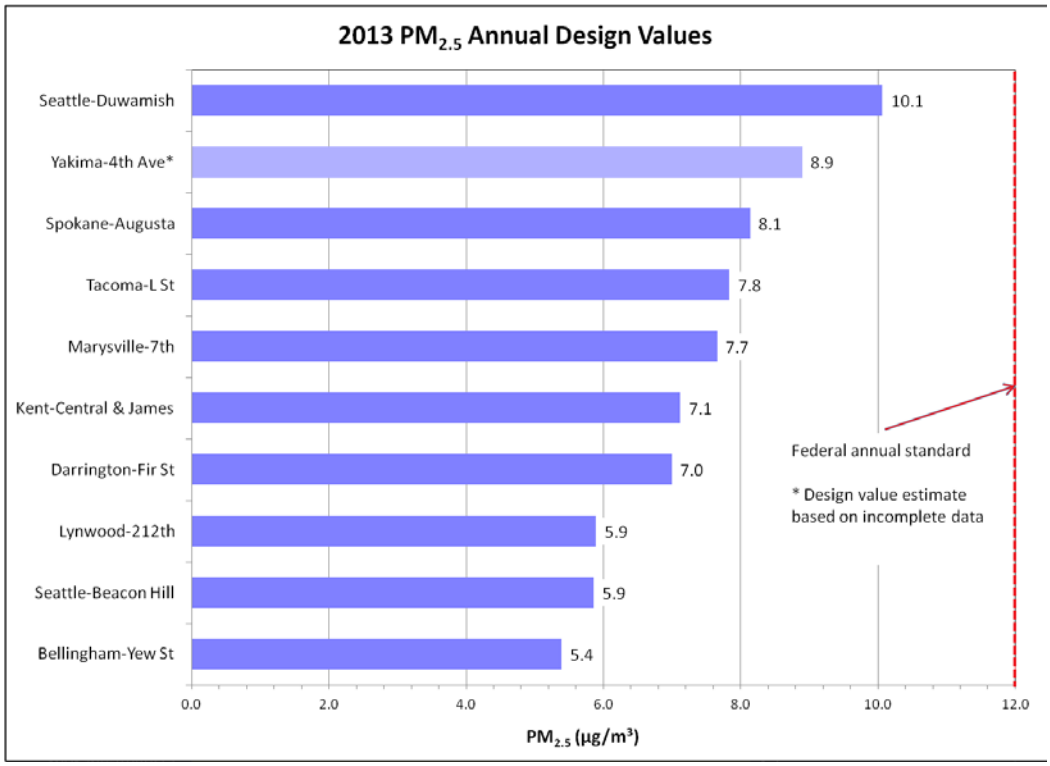


Figure 4 "2013 $PM_{2.5}$ Annual Design Values"



Section 110(a)(2) Elements

The infrastructure SIP must address the requirements under sections 110(a)(1) and 110(a)(2) of the Clean Air Act (CAA). Section 110(a)(1) requires this plan to be submitted to EPA after a reasonable public notice and comment period, and within three years after the promulgation of a national ambient air quality standard (or any revision thereof). Section 110(a)(2) lists specific infrastructure elements:

A. Emission limits and other control measures
B. Ambient air quality monitoring and data analysis system
C. Program to enforce control measures, regulate modification and construction of stationary sources and a permit program
D. Interstate pollution transport*
E. Adequate personnel, funding and authority to carry our plan; comply with state boards; oversee local and regional governmental agencies
F. Stationary source emissions monitoring and reporting system
G. Authority to declare air pollution emergency and notify public
H. Future SIP revisions
I. Nonattainment areas*
J. §121 consultation; §127 public notification; and PSD and visibility protection
K. Air quality modeling / data
L. Major stationary source permitting fees
M. Consultation / participation by affected local entities

*This submittal does not address some elements listed under section 110(a)(2). These elements are:

- Section 110(a)(2)(D)(i)(I) pertains to interstate transport and is also known as a Good Neighbor provision. In 2013 in EME Homer City v. EPA, the D.C. Circuit Court ruled that a state is not required to submit a 110(a)(2)(D)(i)(I) SIP until EPA defines a state's obligation under that provision. On April 29, 2014, the U.S. Supreme Court reversed that ruling stating [10] that once EPA sets a new or revises an existing standard, a state has to develop a SIP that would address the Good Neighbor provision. This requirement will be addressed separately from this submittal.

- Section 110(a)(2)(I), which pertains to the nonattainment planning requirements of the Title I, Part D of the Clean Air. As noted in the 2013 infrastructure SIP guidance document (USEPA, 2013), EPA does not expect infrastructure SIP submissions to address subsection 110(a)(2)(I). The specific SIP submissions for designated nonattainment areas, as required under CAA title I part D, are subject to a different submission schedule than those for section 110 infrastructure elements and will be reviewed and acted upon through a separate process. Air agencies do not need to address Element I in an infrastructure SIP submission.

Below is a discussion showing how Ecology satisfies the required elements of the section 110(a)(2)(A)-(M) of the Clean Air Act.

[10] http://www.supremecourt.gov/opinions/13pdf/12-1182_bqm1.pdf

§110(a)(2)(A) Emission limits and other control measures

Element summary: Include enforceable emission limitations (permits and other control measures, means, or techniques (including economic incentives such as fees, marketable permits, and auctions of emissions rights), as well as schedules and timetables for compliance as may be necessary or appropriate to meet the applicable requirements of this Act.

Washington primarily imposes NO_2, O_3, and $PM_{2.5}$ emission limitations through its permitting programs. In Washington's 1997 ozone NAAQS and 2008 lead NAAQS infrastructure SIP revisions, Washington relied on the existing SIP, codified in 40 CFR part 52, subpart WW, to show that Washington had adequate general regulatory and statutory authority for its minor source permitting program to ensure protection of those NAAQS. For major sources, Washington relied on the Federal Implementation Plan (FIP) in place to implement the Prevention of Significant Deterioration (PSD) program (40 CFR 52.2497). EPA approved the 1997 ozone NAAQS infrastructure SIP revision on May 24, 2012 (77 FR 30902) and proposed to approve the 2008 lead NAAQS infrastructure SIP revision on May 14, 2014 (79 FR 275233).

In order to ensure that the current SIP covers all relevant NAAQS, including the 2010 NO_2, 2008 O_3, and 1997, 2006, and 2012 $PM_{2.5}$ standards, Washington submitted chapter 173-476 WAC "Ambient Air Quality Standards", adopted on November 21, 2013, for approval in the SIP. EPA approved chapter 173-476 WAC in the SIP on March 3, 2014 (79 FR 12077).

In January 2014, Washington submitted an update to chapter 173-400 WAC "General Regulations for Air Pollution Sources." This SIP revision includes updates to the minor source permitting program and seeks EPA approval of Washington's major source PSD and nonattainment new source review programs. While Washington awaits EPA action on the chapter 173-400 WAC submittal, the existing SIP provisions codified in 40 CFR part 52, subpart WW continue to meet the emission limitation and control measure requirements of CAA 110(a)(2)(A).

Washington also has additional SIP-approved ozone, fine particulate matter, and source-specific SIP-approved regulations. They include:

Additional O_3 requirements:

- Chapter 173-422 WAC "Motor Vehicle Emission Inspection" (State adopted date 6/3/93; EPA effective date 9/25/96; 61 FR 50235)
- Chapter 173-490 WAC "Emission Standards and Controls for Sources Emitting Volatile Organic Compounds" (State adopted date 3/22/91; EPA effective date 7/12/93; 58 FR 37426)
- Chapter 173-492 WAC "Motor Fuel Specifications for Oxygenated Gasoline" (State adopted date 10/19/96; EPA effective date 4/30/97; 62 FR 23363)

Additional $PM_{2.5}$ requirements:

- Chapter 173-425 WAC "Open Burning" (State adopted date 3/20/93; EPA effective date 6/2/95; 60 FR 28726)
- Chapter 173-430 WAC "Burning of Field and Forage and Turf Grasses Grown for Seed" (State adopted date 3/20/93; EPA effective date 6/2/95; 60 FR 28726)

- Chapter 173-435 WAC "Emergency Episode Plan" (State adopted date 3/20/93; EPA effective date 6/2/95; 60 FR 28726)
- 1998 Smoke Management Plan (State adopted date 11/5/99; EPA effective date 6/11/03; 68 FR 23228)
- Chapter 173-433 WAC "Solid Fuel Burning Devices" (State adopted date 1/23/2014; EPA effective date 6/9/2014; 79 FR 26628)
  Residential wood smoke can be a significant source of $PM_{2.5}$ in many communities. This recent SIP update, among other changes, authorizes a lower $PM_{2.5}$ burn ban trigger level for nonattainment and at risk areas, and allows participating city, county, and health department officials to assist local clean air agencies in enforcement activities during burn ban episodes. While the changes to chapter 173-433 WAC were initiated primarily to address subpart D nonattainment requirements, these changes will have tangible benefits across the State of Washington.

Source-specific regulations that apply to all NAAQS:

- Chapter 173-405 WAC "Kraft Pulp Mills" (State adopted date 3/22/91; EPA effective date 1/15/93; 58 FR 4578)
- Chapter 173-410 WAC "Sulfite Pulping Mills" (State adopted date 3/22/91; EPA effective date 1/15/93; 58 FR 4578)
- Chapter 173-415 WAC "Primary Aluminum Plants" (State adopted date 3/22/91; EPA effective date 1/15/93; 58 FR 4578)
- Chapter 173-434 WAC "Solid Waste Incinerator Facilities" (State adopted date 3/22/91; EPA effective date 1/15/93; 58 FR 4578)

Washington's Clean Air Act addresses various components of the state's emissions control measures and permitting programs, and apply to all NAAQS. The following references to the state statutory requirements demonstrate how the state law supports SIP-approved rules:

- RCW 70.94.152 Notice may be required of construction of proposed new contaminant source — Submission of plans — Approval, disapproval — Emission control — "De minimis new sources" defined.
- RCW 70.94.153 Existing stationary source — Replacement or substantial alteration of emission control technology.
- RCW 70.94.153 RACT requirements.
- RCW 70.94.155 Control of emissions – Bubble concept – Schedule of compliance.
- RCW 70.94.161 Operating permits for air contaminant sources — Generally — Fees, report to legislature.
- RCW 70.94.162 Annual Fees from Operating Permit Program.[11]
- RCW 70.94.163 Source categories not required to have a permit – Recommendations.

[11] In 2014, Washington State Legislature revised a requirement to submit reports to the Legislature. This change does not affect Washington's ability to implement emissions control measures and permitting programs. http://apps.leg.wa.gov/documents/billdocs/2013-14/Pdf/Bills/Session%20Laws/House/2636.SL.pdf)

- RCW 70.94.380 Emission control requirements.
- RCW 70.94.395 Air contaminant sources — Regulation by department; authorities may be more stringent — Hearing — Standards.
- RCW 70.94.422(2) Energy facility site evaluation council authority over permit program sources.

The following sections of the Washington's Clean Air Act focus on $PM_{2.5}$ emissions control measures, however, they also support reductions in emissions of NO_2 and in ozone formation:

Woodstoves

- RCW 70.94.450 Woodstoves -- Policy.
- RCW 70.94.453 Woodstoves -- Definitions.
- RCW 70.94.455 Residential and commercial construction -- Burning and heating device standards.
- RCW 70.94.457 Solid fuel burning devices -- Emission performance standards.
- RCW 70.94.460 Sale of unapproved woodstoves -- Prohibited.
- RCW 70.94.463 Sale of unapproved woodstoves -- Penalty.
- RCW 70.94.467 Sale of unapproved woodstoves -- Application of law to advertising media.
- RCW 70.94.470 Residential solid fuel burning devices -- Opacity levels -- Enforcement and public education.
- RCW 70.94.473 Limitations on burning wood for heat -- First and second stage burn bans -- Report on second stage burn ban.
- RCW 70.94.475 Liability of condominium owners' association or resident association.
- RCW 70.94.477 Limitations on use of solid fuel burning devices.
- RCW 70.94.480 Woodstove education program.
- RCW 70.94.483 Woodstove education and enforcement account created -- Fee imposed on solid fuel burning device sales.
- RCW 70.94.488 Woodsmoke emissions -- Findings.
- RCW 70.94.505 Woodsmoke emissions -- Work group.

Outdoor Burning

- RCW 70.94.6511 Definition of "outdoor burning."
- RCW 70.94.6512 Outdoor burning -- Fires prohibited -- Exceptions.
- RCW 70.94.6514 Outdoor burning -- Areas where prohibited -- Exceptions -- Use for management of storm or flood-related debris -- Silvicultural burning.
- RCW 70.94.6516 Outdoor burning -- Permits issued by political subdivisions.
- RCW 70.94.6518 Limited outdoor burning -- Establishment of program.
- RCW 70.94.6520 Limited outdoor burning -- Construction.
- RCW 70.94.6522 Limited outdoor burning -- Authority of local air pollution control authority or department of ecology to allow outdoor fires not restricted.
- RCW 70.94.6524 Limited outdoor burning -- Program -- Exceptions.

- RCW 70.94.6526 Limited outdoor burning -- Permits issued by political subdivisions -- Types of fires permitted.
- RCW 70.94.6528 Permits -- Issuance -- Conditioning of permits -- Fees -- Agricultural burning practices and research task force -- Development of public education materials -- Agricultural activities.
- RCW 70.94.6530 Delegation of permit issuance and enforcement to political subdivisions.
- RCW 70.94.6532 Open burning of grasses grown for seed -- Alternatives -- Studies -- Deposit of permit fees in special grass seed burning account -- Procedures -- Limitations -- Report.
- RCW 70.94.6534 Burning permits for abating or prevention of forest fire hazards, management of ecosystems, instruction or silvicultural operations -- Issuance.
- RCW 70.94.6536 Silvicultural forest burning -- Reduce statewide emissions -- Exemption -- Monitoring program.
- RCW 70.94.6538 Burning permits for abating or prevention of forest fire hazards, management of ecosystems, instruction or silvicultural operations -- Conditions for issuance and use of permits -- Air quality standards to be met -- Alternate methods to lessen forest debris.
- RCW 70.94.6540 Cooperation between department of natural resources and state, local, or regional air pollution authorities -- Withholding of permits.
- RCW 70.94.6542 Adoption of rules.
- RCW 70.94.6544 Burning permits for regeneration of rare and endangered plants.
- RCW 70.94.6546 Aircraft crash rescue fire training -- Training to fight structural fires -- Training to fight forest fires -- Other firefighter instruction.
- RCW 70.94.6548 Outdoor burning allowed for managing storm or flood-related debris.
- RCW 70.94.6550 Fires necessary for Indian ceremonies or smoke signals.
- RCW 70.94.6552 Permit to set fires for weed abatement.
- RCW 70.94.6554 Disposal of tumbleweeds.

§110(a)(2)(B) Ambient air quality monitoring and data analysis system

Element summary: Provide for establishment and operation of appropriate devices, methods, systems, and procedures necessary to monitor, compile, and analyze data on ambient air quality; and, upon request, make such data available to the Administrator.

The relevant SIP-approved regulations that implement the monitoring systems are found in 40 CFR 52, subpart WW, chapter 173-400-105 WAC "Records, Monitoring and Reporting."

The statutory provisions of RCW 70.94.331(5) require Ecology to provide for or conduct a surveillance program that:

- Monitors the quality of the ambient atmosphere
- Monitors the concentrations and movements of air contaminants
- Determines the quantity of emissions to the atmosphere

A statewide surveillance system consists of a network of State and Local Air Monitoring Stations[12], a number of Special Purpose Monitors, and two National Core (NCore) sites. The stations are maintained by Ecology with the assistance of local agencies. The network meets the requirements under 40 CFR Part 58.

Data obtained by this network are used to determine air quality trends and determine the compliance status of an area with the NAAQS and Washington Air Quality Standards (WAAQS) and are reported to the Administrator via EPA's Air Quality System (AQS) database in accordance with 40 CFR 58.16. Ecology conducts periodic systems and performance audits, as well as, annual network reviews of the air quality surveillance system. Any changes to the network are requested through the annual network report. Any planned changes to the sites or network are done consistent with 40 CFR 58.14 "System Modification."

The annual network report is due by July 1 every year for review and approval by EPA. Ecology submitted the 2013 plan to EPA in May 2013. EPA approved the 2013 plan[13] on March 10, 2014.

NO_2 Monitoring

NO_2 sampling in Washington started in 1975. At first, there were several stations in Seattle and one in Tulalip. The values from these initial stations were very low (< 3 ppb). Additional stations were established in the early 1980s. In 1981, the all-time maximum annual average value of 40.5 ppb was recorded at a station in Seattle. However, the NO_2 monitors in Washington State never exceeded the NAAQS and recorded relatively low concentrations. Due to this fact, and the high cost of operation and maintenance, NO_2 monitoring was discontinued in 1987.

NO_2 monitoring was re-established in 1995 at the Seattle-Beacon Hill (then a National Air Monitoring station, NAMS) as part of the study to improve understanding of NO contribution to ozone formation. (Washington State Department of Ecology, 2010). During the 1990s, several NO_2 studies were conducted to determine concentrations at potential hot spots and evaluate downwind photochemistry. The results from these studies revealed concentrations well below the NAAQS in effect at the time.

In 2007, the existing NO_2 monitor at Seattle-Beacon Hill was replaced with a high sensitivity sampler measuring reactive oxides of nitrogen (NO_Y = Nitric Oxide (NO) + NO_2 + other oxidized nitrogen species), as required by the station's present classification as an NCore station. Since Beacon Hill is located in an urban area, there is little time for freshly emitted NOx to react with atmospheric oxidants and form other oxidized nitrogen species. Consequently, NO_Y minus NO is a good approximation of NO_2 at this location. NO_Y is also monitored at the Cheeka Peak station, which is a rural background site located in the northwestern corner of the state. As NOx may be oxidized en route to this site, NO_Y minus NO represents the upper limit of NO_2. NO_2 levels at these two stations are well below the new 2010 NAAQS.

[12] Ecology maintains an on-line map of the Washington air monitoring sites: https://fortress.wa.gov/ecy/enviwa/Default.htm.

[13] 2013 Ambient Air Monitoring Network Report, Ecology's publication no. 13-02-007, available at https://fortress.wa.gov/ecy/publications/SummaryPages/1302007.html

Near-Road Ambient Monitoring

To determine compliance with the new standard, EPA issued new ambient air monitoring and reporting requirements, including the requirement to monitor near major roads in urban areas, as well as, in other locations where maximum concentrations are expected.

Ecology established its first NO_2 near-roadway monitor at a location near 10th and Weller streets in Seattle[14]. This segment of roadway has one of the highest combined Average Annual Daily Traffic count of vehicle traffic in Seattle. EPA approved this location as meeting all applicable criteria in 40 CFR Part 58, Appendices A, C, D, and E. The monitor has been operating since April 8, 2014. A second near-road NO_2 monitor is planned for 2015 (Washington State Department of Ecology, 2013).

O_3 Monitoring

Ozone monitoring started in 1972 at a single station in Spokane in Eastern Washington. The O_3 network was rapidly expanded to over 10 stations statewide. Stations in the Puget Sound and the Portland, OR/Vancouver, WA area violated the old one-hour average NAAQS of 120 ppb. As a result, EPA designated the Portland, OR/Vancouver, WA area nonattainment. After the 1990 Amendments to the Clean Air Act, EPA also designated the Puget Sound area nonattainment. Following successful control strategies and accompanying reductions in O_3 concentrations, EPA redesignated the Puget Sound area attainment in 1996 and the Portland–Vancouver area to attainment in 1997.

Though O_3 has been monitored at over 50 different stations throughout the state, many of these were exploratory and only operated for a year or two. On average there have been about 10 to 12 O_3 stations operating during the O_3 season (May through September). Currently, there are 12 monitoring sites approved for determining compliance with the O_3 NAAQS.

The Enumclaw stations have historically recorded the highest values in the O_3 network. Between 2007 and 2009 portable O_3 samplers were deployed to verify that the current monitoring stations represent maximum O_3 impacts. No changes to the network were recommended after the evaluation.

$PM_{2.5}$ Monitoring

In 1999, $PM_{2.5}$ monitoring started at 30 stations - all of which were eventually determined to be below the 1997 standards. After EPA revised the 1997 $PM_{2.5}$ NAAQS in 2006, one area in Washington was in violation of the new standard and was designated nonattainment (Tacoma-Pierce County $PM_{2.5}$ Nonattainment Area). On September 4, 2012, EPA issued a final determination that this nonattainment area has clean data for the 2006 24-hour PM2.5 NAAQS. This determination was based upon complete, quality-assured, quality-controlled, and certified ambient air monitoring data.

Ecology and its partners operate an extensive $PM_{2.5}$ monitoring network. The network is comprised of 5 FRM and 55 continuous monitors at stations throughout Washington, of which 10 monitoring sites have been approved for determining compliance with the NAAQS. The FRMs are filter-based instruments that provide a 24-hour sample, while the continuous network provides hourly data. The continuous network represents Washington's single largest ongoing resource investment for any pollutant, and provides near-real-time data for a variety of users with a diverse array of data needs and applications. A

[14] https://fortress.wa.gov/ecy/enviwa/StationInfo.aspx?ST_ID=163

primary driver for the use of the continuous monitors is public health protection through the use of the near-real-time data.

§110(a)(2)(C) Program to enforce control measures, regulate modification and construction of stationary sources and a permit program

Element summary: Include a program to provide for the enforcement of the measures described in subparagraph (A) and regulation of the modification and construction of any stationary source within the areas covered by the plan as necessary to assure that national ambient air quality standards are achieved, including a permit program as required in parts C and D.

The following SIP-approved state regulations provide Washington State with civil and criminal enforcement authority for violations of Title 173 WAC under the approved SIP:

- WAC 173-400-230 "Regulatory Actions" (State adopted date 3/20/93; EPA effective date 6/2/95; 60 FR 28726)
- WAC 173-400-240 "Criminal Penalties" (State adopted date 3/22/91; EPA effective date 6/2/95; 60 FR 28726)

Ecology's and local clean air agencies' enforcement powers are derived from provisions in chapter 70.94 RCW:

- RCW 70.94.141 "Air pollution control authority — Powers and duties of activated authority"
- RCW 70.94.200 "Investigation of conditions by control officer or department -- Entering private, public property"
- RCW 70.94.211 "Enforcement actions by air authority -- Notice to violators"
- RCW 70.94.332 "Enforcement actions by department -- Notice to violators"
- RCW 70.94.425 "Restraining orders -- Injunctions"
- RCW 70.94.430 "Penalties"
- RCW 70.94.431 "Civil penalties — Excusable excess emissions"
- RCW 70.94.435 "Additional means for enforcement of chapter"

EFSEC's enforcement powers are derived from provisions in chapter 80.50 RCW "Energy Facilities – Site Locations."

- 80.50.040 "Energy facility site evaluation council--Powers enumerated"
- 80.50.150 "Enforcement of compliance--Penalties"

As previously noted, on January 23, 2014, Washington submitted a revision to chapter 173-400 WAC to comprehensively update the EPA-approved SIP, including the permitting program. Washington requested expeditious approval of the revised chapter 173-400 WAC. However, in the interim the existing EPA-approved permitting program codified in 40 CFR 52, subpart WW provides sufficient authority to ensure that the 2010 NO_2, 2008 O_3, and 1997, 2006 and 2012 $PM_{2.5}$ NAAQS are protected.

§110(a)(2)(D) Pollution transport

§110(a)(2)(D)(i) Interstate pollution transport

Element summary: Each such plan shall –

(D) contain adequate provisions –

(i) prohibiting, consistent with the provisions of this title, any source or other type of emissions activity within the State from emitting any air pollutant in amounts which will –

(I) contribute significantly to nonattainment in, or interfere with maintenance by, any other State with respect to any such national primary or secondary ambient air quality standard, or

(II) interfere with measures required to be included in the applicable implementation plan for any other State under part C to prevent significant deterioration of air quality or to protect visibility.

As previously noted, this submittal does not include section 110(a)(2)(D)(i)(I), which pertains to interstate transport related to nonattainment or interference with maintenance of the NAAQS. This requirement will be addressed separately.

For section 110(a)(2)(D)(i)(II) related to PSD, Washington submitted revisions to chapter 173-400 WAC "General Regulations for Air Pollution Sources" on January 23, 2014, requesting EPA approval of Washington's PSD program. Similarly, Washington submitted a regional haze plan to protect visibility on December 22, 2010. On December 26, 2012, EPA proposed partial approval of the plan as well as a proposed FIP for the remaining elements (77 FR 76174). In response to comments on the proposal, on December 30, 2013, EPA proposed a FIP for additional elements (78 FR 79344).

§110(a)(2)(D)(ii) Interstate and international pollution abatement

Element summary: Contain adequate provisions insuring compliance with the applicable requirements of sections 126 and 115 (relating to interstate and international pollution abatement).

The notification requirements of CAA section 126(a) pertain only to major proposed new or modified sources under the PSD program. In a separate action, Washington is seeking EPA approval of the PSD program. In the interim, PSD is operated under a Federal Implementation Plan.

Washington does not have any outstanding obligations under sections 126 or 115. Should the Administrator notify the state about an issue triggering the requirements under the section 110(a)(2)(H)(ii) to revise the SIP, Washington has the authority and is required to comply with the requirements of the federal Clean Air Act (RCW 70.94.011).

§110(a)(2)(E) Adequate personnel, funding and authority to carry out plan; comply with state boards; oversee local and regional governmental agencies.

Element summary: Provide (i) necessary assurances that the state (or, except where the Administrator deems inappropriate, the general purpose local government or governments, or a regional agency designated by the state or general purpose local governments for such purpose) will have adequate personnel, funding, and authority under state (and, as appropriate, local) law to carry out such

implementation plan (and is not prohibited by any provision of federal or state law from carrying out such implementation plan or portion thereof);

(ii) requirements that the state comply with the requirements respecting state boards under section 128, and

(iii) necessary assurances that, where the state has relied on a local or regional government, agency, or instrumentality for the implementation of any plan provision, the state has responsibility for ensuring adequate implementation of such plan provision.

(i) The program of air pollution control in Washington is a cooperative effort between state agencies, Ecology, EFSEC, and seven local clean air agencies. Under chapter 70.94 RCW, the state's Clean Air Act, and chapter 80.50 RCW, "Energy Facilities – Site Location", all agencies have authority to employ personnel to implement requirements of the federal Clean Air Act. Chapters 43.21A and 70.94 RCW provide for Ecology's and LCAAs rule making authority. RCW 80.50.040 provides for EFSEC's rulemaking authority. Ecology's and EFSEC's funding is appropriated biennially by the state's Legislature. Under RCW 70.94.092, local clean air agencies adopt annual budgets that contain adequate funding and provide for staff sufficient to carry out regulations related to the reduction, prevention, and control of air pollution.

Washington uses its authorities and funding to develop regulations for inclusion in the SIP, various SIP revisions, the EPA-approved monitoring program, and other documents and actions specified throughout this submittal.

(ii) The SIP-approved provisions of WACs 173-400-220 "Requirements for Board Members" and 173-400-260 "Conflict of Interest" (State adopted date 3/22/91; EPA effective date 6/2/95; 60 FR 28726) provide that no state board or body which approves operating permits or enforcement orders, either in the first instance or upon appeal, shall be constituted of less than a majority of members who represent the public interest and who do not derive a significant portion of their income from persons subject to operating permits. State law also provides that any potential conflicts of interest by members of such board or body or the head of any executive agency with similar powers be adequately disclosed. [15] See RCW 34.05.425 "Administrative Procedure Act", RCW 42.17 "Public Disclosure Act", and RCW 70.94.100 "Composition of Local Air Authorities' Board; Conflict of Interest Requirements."

SIP-approved WAC 173-400-240 "Criminal Penalties" (State adopted date 3/22/91; EPA effective date 6/2/95; 60 FR 28726) specifies that any person who knowingly fails to disclose a potential conflict of interest under RCW 70.94.100 is guilty of a gross misdemeanor, and upon conviction thereof shall be punished by a fine of not more than five thousand dollars.

(iii) Ecology, EFSEC, and LCAAs work with other organizations and agencies and may enter into agreements allowing for implementation of the air pollution controls by another agency. However,

[15] The Attorney General's legal opinion, State of Washington Title V program (full approval effective September 12, 2001, 66 FR 42439 (August 13, 2001), with a revision approved on January 2, 2003).

RCW 70.94.370 states that no provision of this chapter or any recommendation of the state board or of any local or regional air pollution program is a limitation on the power of a state agency in the enforcement or administration of any provision of law which it is specifically permitted or required to enforce or administer.

§110(a)(2)(F) Stationary source emissions monitoring and reporting system

Element summary: Require, as may be prescribed by the Administrator
(i) the installation, maintenance, and replacement of equipment, and the implementation of other necessary steps by owners or operators of stationary sources to monitor emissions from such sources,
(ii) periodic reports on the nature and amounts of emissions and emissions-related data from such sources, and
(iii) correlation of such reports by the state agency with any emission limitations or standards established pursuant to this Act, which reports shall be available at reasonable times for public inspection.

Under the federally approved SIP, Washington is authorized to require sources to (i) install, maintain and replace equipment, (ii) monitor emissions, and (iii) submit reports for review by the agency. The requirements are implemented through permits and compliance orders issued under chapter 70.94 RCW. As previously discussed, Washington is seeking EPA approval of updates to chapter 173-400 WAC, however, in the interim the following EPA-approved regulations address stationary source emissions monitoring and reporting system requirements of the infrastructure SIP:

- WAC 173-400-105 "Records, Monitoring, and Reporting" (State adopted date 9/20/93; EPA effective date 6/2/95; 60 FR 28726)
- WAC 173-400-110 "New Source Review (NSR)" (State adopted date 3/22/91; EPA effective date 6/2/95; 60 FR 28726)
- WAC 173-400-112 "Requirements for New Sources in Nonattainment Areas" (State adopted date 3/22/91; EPA effective date 6/2/95; 60 FR 28726)
- WAC 173-400-113 "Requirements for New Sources in Attainment or Unclassifiable Areas" (State adopted date 3/22/91; EPA effective date 6/2/95; 60 FR 28726)

§110(a)(2)(G) Authority to declare air pollution emergency and notify public

Element summary: Provide for authority comparable to that in section 303 and adequate contingency plans to implement such authority.

State statutes providing for the air pollution emergency response authority are located in RCW 70.94.710 through 70.94.730. The Governor has the power to declare an air pollution emergency and to issue emergency orders for the reduction or discontinuance of emissions when such emissions and weather combine to create conditions imminently dangerous to public health and safety. Ecology is authorized to develop an episode avoidance plan providing for the phased reduction of emissions wherever and whenever an air pollution episode is forecast. Ecology may delegate authority to adopt source emission reduction plans (SERPs) and authority to implement all stages of occurrence up to and including the warning stage, and all intermediate stages up to the warning stage, in any area of the state, to the air pollution control authority.

Washington is divided into six Air Quality Control Regions (AQCRs). Washington's AQCRs are codified in 40 CFR Part 81 and are as follows:

§81.32 Puget Sound Intrastate AQCR
§81.51 Portland (Oregon) – Southwest Washington Interstate AQCR (Washington portion)
§81.010 Eastern Washington-Northern Idaho Interstate AQCR (Washington portion)
§81.185 Northern Washington Intrastate AQCR
§81.187 Olympic-Northwest Washington Intrastate AQCR
§81.189 South Central Washington Intrastate AQCR

40 CFR part 52 subpart WW contains priority classifications for emergency episode plans for Washington's AQCRs. For NO_2, all control regions are currently classified as Priority III areas. For O_3, Portland Interstate and Puget Sound Intrastate air quality control regions are classified Priority I areas, with the rest of the state being Priority III Regions. EPA has not issued criteria for classification of areas into priority regions for $PM_{2.5}$.

Per 40 CFR sections 51.153, states should periodically reevaluate priority classifications of all Regions or portion of Regions within their borders. The reevaluation must consider the three most recent years of air quality data. Washington evaluated the most recent three years of monitoring data for NO_2 and O_3 against the priority area classification thresholds identified in 40 CFR 51.150.

In 1972, when EPA originally classified priority areas of the state all but Puget Sound Interstate AQCRs were Priority III for NO_2. Puget Sound Interstate AQCR was Priority I for NO_2, however, in 1974 it was reclassified to Priority III. During the most recent 3 years (2011-2013), the Seattle-Beacon Hill NO_2 monitor was the only official Washington NO_2 monitor. It began operating on 2/4/2013. Therefore, the annual average for 2013 of 0.012 ppm, which is well below the regulatory threshold of 100 $\mu g/m^3$ (0.06 ppm), is incomplete. There is a non-Washington network NO_2 monitor at Spokane-Augusta Ave. that was operating during most of the last 3 years (incomplete 2011, mostly complete 2012, and 2013). The highest annual average at this monitor during the period was 0.008 ppm, also well below the threshold. At this time, there are no indications of any areas of the state exceeding the regulatory threshold that

would trigger Priority Area reclassification. Ecology will continue to collect NO_2 data and will reevaluate the priority area classifications once more data are available.

Two AQCRs in Washington are classified as Priority I regions for ozone. These areas are Puget Sound Intrastate and Portland Interstate. In the last three years, ambient air concentrations of ozone recorded by the Washington State network in the Portland Interstate area were below a 1-hour 0.100 ppm threshold. The highest 1-hour concentration during the last 3 years (2011, 2012, and 2013) was 0.090 ppm. It was recorded at Vancouver, Clark County, in 2011. Based on the analysis, Washington's portion of the Portland Interstate AQCR is below the threshold for Priority I area classification for ozone.

During the last 3 years, the 1-hour values for O_3 in Puget Sound Intrastate AQCR were recorded above the threshold at North Bend and Enumclaw (in King County). All events occurred in 2012. A maximum of 0.101 ppm was recorded at North Bend on 8/17/2012. A maximum of 0.104 ppm was recorded at Enumclaw on 8/5/2012. The 2nd maximum of 0.103 ppm was recorded at Enumclaw on 8/17/12.

Puget Sound and Portland AQCRs, classified as Priority I region, are covered by the Washington's Emergency Episode Plan contained in Chapter 173-435 WAC (State effective date 1/3/89; EPA effective date 1/15/1993; 58 FR 4578.) Ecology's existing Emergency Episode Plan provisions are consistent with EPA's regulatory requirements contained in 40 CFR 51, subpart H (40 CFR 51.150 through 51.153) ("Prevention of Air Pollution Emergency Episodes"). These provisions are in place to constrain sources of precursors to O_3 emissions, as necessary, in case of an air pollution emergency.

To satisfy a Priority I region's emergency episode plan requirements regarding forecasts of atmospheric stagnation conditions, Washington relies on existing ambient ozone monitoring and forecasting networks, including AIRNow[16]. AIRNow website was developed by EPA, in partnership with National Oceanic and Atmospheric Administration (NOAA), National Park Service (NPS), and tribal, state, and local agencies to provide easy public access to national air quality information. The website offers daily Air Quality Index (AQI) forecasts as well as real-time AQI conditions for over 300 cities across the U.S. and provides links to more detailed state and local air quality websites.

EPA has not set a significant harm level (SHL) for $PM_{2.5}$ under 40 CFR 51.151. In the absence of the federally-defined SHL for $PM_{2.5}$, Washington relies on WAC 173-435-050(6) that states, "Regardless of whether any episode stages have previously been declared, whenever the governor finds that emissions are causing imminent danger to public health or safety, the governor may declare an air pollution emergency and order the persons responsible for the operation of sources causing the danger, to reduce or discontinue emissions consistent with good operating practice, safe operating procedures, and SERPs, if any." In the case of an imminent danger to public health and safety, for example wildfires, Washington State can use the above mentioned statutory and regulatory authorities to declare an air pollution emergency for $PM_{2.5}$, working closely with other agencies to alert the public and take necessary steps to mitigate risk.

[16] http://www.airnow.gov

In case of wildfires, Washington also utilizes a non-regulatory tool, WA Smoke Blog[17], to provide the public an up-to-date information on wild land fires in the state. Washington residents can keep track of smoke effects and get forecasts about smoke movement from area wildfires by visiting this clearinghouse blog. The state Departments of Ecology and Health, U.S. Forest Service, and other participating state, federal and county governments post wildfire information, while volunteers built and maintain the page and activate it when there is a need to share coordinated information related to fires. Residents can also follow real-time air quality information at permanent air quality monitors across the state.

§110(a)(2)(H) Future SIP revisions

Element summary: Provide for revision of such plan

(i) from time to time as may be necessary to take account of revisions of such national primary or secondary ambient air quality standard or the availability of improved or more expeditious methods of attaining such standard, and

(ii) except as provided in paragraph (3)(C), whenever the Administrator finds on the basis of information available to the Administrator that the plan is substantially inadequate to attain the national ambient air quality standard which it implements, or to otherwise comply with any additional requirements established under this Act.

Under the Washington Clean Air Act (RCW 70.9418), Washington's air quality agencies have the authority to promulgate rules and regulations to maintain and protect Washington's air quality, and to comply with the federal requirements, including revisions of NAAQS, SIPs, and responding to EPA's findings.

RCW 70.94.510 specifies Washington's policy to cooperate with the federal government in order to coordinate and take necessary actions to secure to the state the benefits of the federal clean air act.

Washington utilized the above authority in developing SIP-approved rules and regulations specified throughout this submittal. These, and other SIP submittals, are the result of Washington's ability to provide for SIP revisions as specified in CAA.

[17] http://wasmoke.blogspot.com/

[18] RCW 70.94.011. *Declaration of public policies and purpose.*
"It is declared to be the public policy to preserve, protect, and enhance the air quality for current and future generations. Air is an essential resource that must be protected from harmful levels of pollution. Improving air quality is a matter of statewide concern and is in the public interest. It is the intent of this chapter to secure and maintain levels of air quality that protect human health and safety, including the most sensitive members of the population, to comply with the requirements of the federal clean air act, to prevent injury to plant, animal life, and property, to foster the comfort and convenience of Washington's inhabitants, to promote the economic and social development of the state, and to facilitate the enjoyment of the natural attractions of the state."

§110(a)(2)(J) §121 consultation; §127 public notification; and PSD and visibility protection

Element summary: Meet the applicable requirements of section 121 (relating to consultation), meet the applicable requirements of section 127 (relating to public notification), meet the applicable requirements of … part C (relating to prevention of significant deterioration of air quality and visibility protection).

The public involvement process is codified in SIP-approved WAC 173-400-171 *Public involvement* (State effective date 9/20/93; EPA effective date 6/2/95; 60 FR 28726).

Section 70.94.141(10) RCW authorizes Ecology to advise, consult, cooperate, and contract with agencies, departments, and educational institutions of the state, other political subdivisions, industries, other states, interstate or interlocal agencies, the United States government, and with interested persons or groups. After drafting a state implementation plan revision, Ecology or local air authority responsible for the plan development must issue a public notice informing the residents and affected parties of the proposed changes. The public and all interested parties are then provided with an opportunity to review and comment on the proposal and participate in public hearing(s). In addition to the formal public involvement procedures, Ecology often hosts workshops or creates advisory committees to solicit input from the affected stakeholders.

Additional statutory authorities and requirements for consultation and public involvement are found in chapter 34.05 RCW "Administrative Procedure Act", chapter 42.30 RCW "Open public meetings act", and RCW 70.94.240 "Air pollution control advisory council."

The Action Procedures under WAC 173-435-050 (State effective date 1/3/89; EPA effective date 1/15/93; 58 FR 4578) provide public warnings during periods of adverse air quality. In addition to these SIP measures, Ecology uses the Washington Air Quality Advisory (WAQA) tool for informing people about the health effects of air pollution. The public can access up-to-date WAQA information on-line at https://fortress.wa.gov/ecy/enviwa/Default.htm.

As previously discussed, the major source PSD program in Washington is currently operated under a Federal Implementation Plan (FIP). The ongoing review of new major sources under the permitting program (PDS FIP) and the long-term Regional Haze program address visibility protection requirements. SIP-approved visibility protection regulations are found in WAC 173-400-150 (State effective date 13/22/91; EPA effective Date 6/2/95; 60 FR 28726). In 2003, EPA approved Ecology's 1999 Visibility Plan (68 FR 34821). The most current visibility protection requirements are included in Washington's Regional Haze SIP submitted to EPA in 2010. On June 11, 2014, EPA approved parts of the plan and issued a FIP for the remaining elements (77 FR 76174).

§110(a)(2)(K) Air quality modeling / data

Element summary: Provide for: (i) the performance of such air quality modeling as the Administrator may prescribe for the purpose of predicting the effect on ambient air quality of any emissions of any air pollutant for which the Administrator has established a national ambient air quality standard, and (ii) the submission, upon request, of data related to such air quality modeling to the Administrator.

In accordance with the SIP-approved minor source NSR permitting provisions in WAC 173-400-110, -112, and -113 (state adopted date 3/22/91; EPA effective date 6/2/95; 60 FR 28726), modeling work and estimates of pollutant concentrations in the ambient air are based on EPA's guidance and latest methodologies and techniques, and are compliant with the requirements specified in 40 CFR 51, Appendix W (Guideline on Air Quality Models). In addition, Ecology does modeling work for the major source PSD program under the delegation agreement (see response to §110(a)(2)(A) above). The protocol to do the dispersion modeling is provided to EPA for review and comment. The final modeling results are shared with EPA as part of the permit applications (for PSD projects) and upon request for other new source review projects.

Washington's Clean Air Act (specifically RCW 70.94.011 *Declaration of public policies and purpose* and RCW 70.94.510 *Policy to cooperate with federal government*) directs Ecology to cooperate with the federal government in order to coordinate and implement federal and state clean air acts, which would include the submission of data related to air quality modeling to the Administrator.

§110(a)(2)(L) Major stationary source permitting fees

Element summary: Require the owner or operator of each major stationary source to pay to the permitting authority, as a condition of any permit required under this Act, a fee sufficient to cover

(i) the reasonable costs of reviewing and acting upon any application for such a permit, and

(ii) if the owner or operator receives a permit for such source, the reasonable costs of implementing and enforcing the terms and conditions of any such permit (not including any court costs or other costs associated with any enforcement action), until such fee requirement is superseded with respect to such sources by the Administrator's approval of a fee program under title V.

Washington's seven local agencies, EFSEC, and Ecology require sources to pay fees for new source review. The fees are to support the permitting (new source review) of new major and minor air pollution sources. Each agency has a separate fee schedule, which is periodically revised to reflect actual permitting cost experience.

As noted earlier, in January 2014, Ecology submitted SIP revisions to chapter 173-400 WAC that specifies that sources applying for permits are required to pay the fees. For example, WAC 173-400-111(1)(e) that describes requirements for the Notice of Construction permits, states that "An application is not complete until any permit application fee required by the permitting authority has been paid." WAC 173-400-560(4)(c), describing general order of approval requirements, states that "An application shall be incomplete until a permitting authority has received any required fees." In addition to the SIP updates that were proposed in January, Ecology is proposing to include the following new language in the SIP found under WAC 173-400-111(3)(i): "All fees required under chapter 173-455 WAC (or the applicable new source review fee table of the local air pollution control authority) have been paid." This language asserts permitting authorities' fee requirements. By including this new language in the SIP, Ecology does not propose to incorporate the referenced chapter 173-455 WAC in the SIP.

For major stationary sources subject to the Title V air operating permit program, Ecology's statutory authority to collect permit fees is established under RCW 70.94.162 *Annual fees from operating permit program source to cover cost of program.*

EPA granted Ecology, along with the seven local agencies and EFSEC, interim approval of its Title V program effective December 9, 1994, and full approval effective September 12, 2001, (66 FR 42439, August 13, 2001), with a revision approved on January 2, 2003. EPA periodically reviews Washington's Title V fee program to ensure the collected fees are sufficient and used to cover the costs of developing and administering the program. Ecology's Title V fees and certification regulations are found in chapter 173-401 WAC, Part X.

EFSEC has a different system in place to collect permit fees due to their mandate to serve as a one-stop agency for all permits required as part of the site certification granted to the approved new energy facility projects. An applicant submits the PSD application for new facility as a part of the larger application for site certification. Under chapter 80.50 RCW, the new energy facilities are required to pay such reasonable costs into the fund held by the state treasurer to cover the cost of site certification processing and issuance. Once EFSEC receives an application for a site certification and a facility makes the initial deposit, EFSEC draws the funds necessary to process the application. After EFSEC issues a Site Certification Agreement to a facility, the facility is an EFSEC facility for the entire life-cycle of the project, 30 or more years. The facilities continue to contribute quarterly to the EFSEC account. Rather than send out annual bills for each of the different permits, including Air Operating Permits as well as other work EFSEC does on behalf of a facility, EFSEC requires facilities to maintain a balance in their accounts that covers all the work EFSEC does.

§110(a)(2)(M) Consultation and participation

Element summary: Provide for consultation and participation by local political subdivisions affected by the plan.

After drafting a regulatory document such as a State Implementation Plan revision, Ecology (on behalf of itself or the agency responsible for the document development) must issue a public notice informing the residents and affected parties of the proposed SIP changes. The public and all interested parties are then provided with an opportunity to review and comment on the proposal and participate in public hearing(s). In addition to the formal public involvement procedures, Ecology and other agencies often host workshops or create advisory committees to solicit input from the affected stakeholders.

SIP-approved regulations:

- WAC 173-400-171 *Public involvement* (State effective date 9/20/93; EPA effective date 6/2/95; 60 FR 28726).

Relevant statutes:

- RCW 34.05 *Administrative Procedure Act*.
- RCW 42.30 *Open public meetings act.*
- RCW 70.94.240 *Air pollution control advisory council.*

Appendix A: NO_2, O_3, and $PM_{2.5}$ NAAQS

2010 1-Hour Primary National Ambient Air Quality Standards for Nitrogen Dioxide

What is nitrogen dioxide?

Nitrogen dioxide (NO_2) is one of a group of highly reactive gasses known as "oxides of nitrogen" or "nitrogen oxides" (NOx). For NAAQS purposes, EPA uses NO_2 as the indicator for the larger group of nitrogen oxides. The definition of "nitrogen oxides," as it appears in the federal Clean Air Act Section 108(c), refers to all forms of oxidized nitrogen (N) compounds, including nitrogen oxide (NO), NO_2, and all other oxidized N-containing compounds formed from NO and NO_2 (USEPA, 2009). The Clean Air Act states: "Such criteria [for oxides of nitrogen] shall include a discussion of nitric and nitrous acids, nitrites, nitrates, nitrosamines, and other carcinogenic and potentially carcinogenic derivatives of oxides of nitrogen." This definition is different from the one commonly used by the air pollution technical community where the sum of NO and NO_2 is commonly abbreviated as NO_X. The category label used by this community for the sum of all forms of oxidized nitrogen compounds including those listed in Section 108(c) is NO_Y. (USEPA, 2008)

NO and NO_2 are precursors in the formation of O_3 and photochemical smog as well as particulate. NO_2 is an oxidant and can react to form other toxic pollutants that can cause adverse health effects. NO_2 can react with toxic compounds such as polycyclic aromatic hydrocarbons (PAHs) to form nitro-PAHs, some of which are more toxic than either pollutant alone. NO_2 can also be oxidized to form the strong mineral acids nitric acid (HNO_3) contributing to the acidity of cloud, fog, and rainwater, as well as ambient particles[19].

Ultimately, oxidized N compounds are lost from the atmosphere by deposition to the earth's surface. Soluble species are taken up by aqueous aerosols and cloud droplets that can then be removed by either wet or dry deposition. Insoluble species are lost by dry deposition and washout[20].

New 1-Hour Primary NO_2 NAAQS

In recognizing the growing body of epidemiologic and toxicological studies showing potential adverse health impacts from short-term exposure to NOx, on January 22, 2010 EPA strengthened the health-based NAAQS for nitrogen dioxide (NO_2) by setting a new 1-hour NO_2 standard. The level of the new standard is 100 parts per billion (ppb). The form of the standard is the 3-year average of the 98th percentile of the annual distribution of daily maximum 1-hour average concentrations. EPA also retained, with no change, the existing annual average NO_2 standard of 53 ppb, calculated as the arithmetic mean of the 1-hour NO_2 concentrations. EPA is considering the need for changes to the secondary NO_2 standard under a separate review.

EPA first established standards for NO_2 in 1971, setting both a primary and secondary standards at 53 ppb, averaged annually. Since 1971 and prior to 2010, EPA reviewed the standards twice but did not propose any revisions at the conclusion of each review.

[19] p. 2.1, "Integrated Science Assessment for Oxides of Nitrogen – Health Criteria", EPA, July 2008.
[20] p. 2.5, ibid.

2008 8-Hour Primary and Secondary National Ambient Air Quality Standards for Ozone

What is ozone?

Ozone (O_3), a molecule made up of three atoms of oxygen, is not directly emitted in the atmosphere. Instead, it and other oxidants form by atmospheric reactions involving two main classes of precursor pollutants, volatile organic compounds (VOCs) and nitrogen oxides (NO_x). Carbon monoxide is also important for O_3 formation in polluted areas. O_3 is thus called a secondary pollutant. The formation of O_3 from these precursors is a complex, nonlinear process influenced by many variables, including the amount of sunlight, atmospheric mixing of aerosol particles, and the rates of chemical reactions of the precursors. At the Earth's surface, O_3 reacts strongly with other molecules making it harmful to living systems. O_3 also contributes to often invisible, but harmful photochemical smog. Ultraviolet radiation destroys O_3.

8-hour Ozone NAAQS

In 2008, EPA revised the level of the 8-hour primary standard for O_3 to 0.075 parts per million (ppm)[21]. EPA set the secondary O_3 NAAQS identical to the primary standard. Subsequent to issuance of the 2008 standard, numerous groups, including state, public health, environmental, and industry petitioners, challenged EPA's decision in federal court. In April 2009, Clean Air Scientific Advisory Committee (CASAC) send EPA a letter expressing strong, unanimous disagreement with EPA's decision on both the primary and secondary standards. The CASAC explained that it did not endorse the revised primary O_3 as being sufficiently protective of public health. The CASAC also expressed the view that failing to revise the secondary standard to a cumulative, seasonal form was not supported by the available science. The new EPA Administrator initiated a review of the O_3 rulemaking. As the result of the review, litigation, and CASAC recommendation, the Administrator determined that different primary and secondary NAAQS are necessary to provide requisite protection for public health and welfare. In 2010, EPA proposed to reconsider the 2008 O_3 NAAQS. In 2011, directed by the President, EPA announced that it would not issue a final rule for reconsideration and instead focus on the upcoming mandatory review of the O_3 NAAQS. In the meantime, EPA directed the states to implement the 2008 O_3 NAAQS.

1997, 2006, and 2012 National Ambient Air Quality Standards for Fine Particulate Matter

What is fine particulate matter?

Particulate matter (PM) is a generic term for a broad class of chemically and physically diverse substances that exist as discrete particles (liquid droplets or solids) over a wide range of sizes. Particles originate from a variety of anthropogenic stationary and mobile sources, as well as from natural sources. Particles may be emitted directly or formed in the atmosphere by transformations of gaseous emissions such as sulfur oxides (SOx), nitrogen oxides (NOx), and volatile organic compounds (VOC). The chemical and physical properties of PM vary greatly with time, region, meteorology, and source category.

Particles vary in size. Fine particulate refers to particles with a nominal mean aerodynamic diameter of less than or equal to 2.5 micro millimeters (μm), or $PM_{2.5}$. Coarse particulate generally includes particles with a nominal mean aerodynamic diameter between 2.5 μm and 10 μm, or PM_{10}.

[21] 73 FR 16436, March 27, 2008

1997, 2006 and 2012 $PM_{2.5}$ NAAQS

EPA first established NAAQS for PM in 1971. In 1997, EPA significantly revised the PM NAAQS in several respects (62 FR 38652, July 18, 1997). Most significantly, EPA determined that the fine and coarse fractions of PM should be considered separately. EPA accordingly added new standards, using $PM_{2.5}$ as the indicator for fine particles. EPA established two new $PM_{2.5}$ standards: an annual standard of 15 $\mu g/m^3$, based on the 3-year average of annual arithmetic mean $PM_{2.5}$ concentrations from single or multiple community-oriented monitors; and a 24-hour standard of 65 $\mu g/m^3$, based on the 3-year average of the 98^{th} percentile of 24-hour $PM_{2.5}$ concentrations at each population-oriented monitor within an area. Also, EPA established a new reference method for measuring $PM_{2.5}$ in the ambient air and adopted protocols for determining attainment of the new standard. EPA revised the secondary standards by making them identical to the primary standards.

On October 17, 2006, EPA finalized revisions to the 1997 primary and secondary $PM_{2.5}$ NAAQS (71 FR 61144). EPA revised the level of the 24-hour $PM_{2.5}$ standard to 35 $\mu g/m^3$, retained the level of the annual $PM_{2.5}$ standard at 15 $\mu g/m^3$, and revised the form of the annual $PM_{2.5}$ standard by narrowing the constraints on the optional use of spatial averaging. Under the new form, EPA limited the conditions under which some areas may average measurements from multiple community-oriented monitors to determine compliance (71 FR 61165-61167).

On January 15, 2013, EPA finalized its review of the 2006 PM2.5 NAAQS and lowered the primary annual standard from 15 $\mu g/m^3$ to 12 $\mu g/m^3$.

Appendix B: Response to Comments and Public Involvement Materials

Ecology received one written comment during the project's comment period from July 25 through August 27 2014. The comment, submitted anonymously, complimented Ecology's work on Hanford Air Operating Permit. This comment is outside of the scope of the infrastructure SIP submittal. No changes were made to the submittal as the result of the comment.

Ecology did not receive a request for public hearing. No hearing was held.

Ecology provides below the following materials documenting outreach and public involvement efforts:

a. A copy of the written comment received during the comment period
b. A copy of the legal notice published in the Daily Journal of Commerce announcing the start of the comment period
c. A copy of Ecology's news release
d. A copy of Ecology's public involvement calendar outlining the details of the comment period
e. A copy of Ecology's web page with a link to the public review draft
f. A copy of Ecology's air quality rules and SIP updates listserv announcement

a. Comment

b. Legal Notice

c. News Release

d. Ecology's Public Involvement Calendar Announcement

e. Ecology's Web Page Announcement

f. Ecology's Air Quality Rules an*d* SIPs Updates Listserv Announcement

Works Cited

USEPA. (2013). *Guidance on Infrastructure State Implementation Plan (SIP) Elements under Clean Air Act Sections 110(a)(1) and 110(a)(2).*

USEPA. (2008). *Integrated Science Assessment for Oxides of Nitrogen - Health Criteria.*

USEPA. (2009). *Integrated Science Assessment for Particulate Matter (Final Report).*

Washington State Department of Ecology. (2010). *2010 Washington State Ambient Air Monitoring Network Assessment.* Air Quality Program.

Washington State Department of Ecology. (2013). *2013 Washington State Ambient Air Monitoring Network Assessment.* Air Quality Program.