Area Designation Recommendation, Exceptional Events Demonstrations, and Response to Comments

For the 2024 Primary Annual $PM_{2.5}$ National Ambient Air Quality Standard

Air Quality Program

Washington State Department of Ecology
Olympia, Washington

February 2025, Publication 25-02-002

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Related Information

- Ecology Air Quality Targets Website,[1]
- EPA Exceptional Events Website,[2]
- Washington Smoke Blog[3]

Contact Information

Air Quality Program

P.O. Box 47600
Olympia, WA 98504-7600
Phone: 360-407-6800

Website[4]: Washington State Department of Ecology

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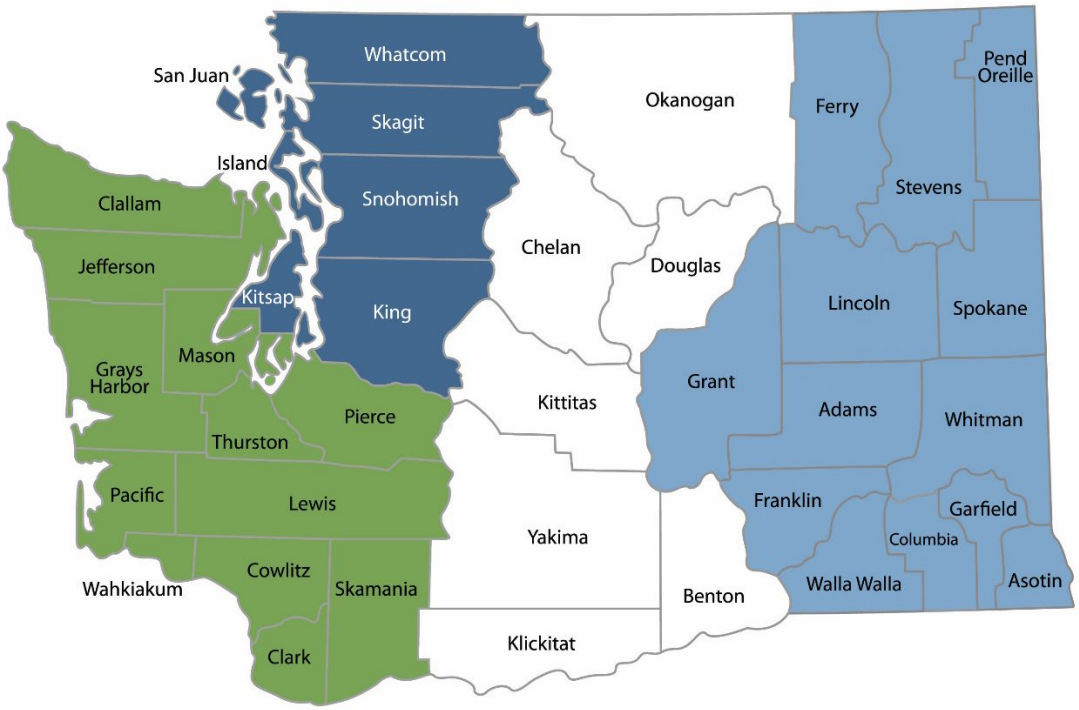
[1] www.ecology.wa.gov/Air-Climate/Air-quality/Air-quality-targets
[2] www.epa.gov/air-quality-analysis/treatment-air-quality-monitoring-data-influenced-exceptional-events
[3] www.wasmoke.blogspot.com/
[4] www.ecology.wa.gov/contact

Department of Ecology's Regional Offices

Map of Counties Served



Southwest Region 360-407-6300	Northwest Region 206-594-0000	Central Region 509-575-2490	Eastern Region 509-329-3400

Region	Counties served	Mailing Address	Phone
Southwest	Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Mason, Lewis, Pacific, Pierce, Skamania, Thurston, Wahkiakum	P.O. Box 47775 Olympia, WA 98504	360-407-6300
Northwest	Island, King, Kitsap, San Juan, Skagit, Snohomish, Whatcom	P.O. Box 330316 Shoreline, WA 98133	206-594-0000
Central	Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, Yakima	1250 West Alder Street Union Gap, WA 98903	509-575-2490
Eastern	Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman	4601 North Monroe Spokane, WA 99205	509-329-3400
Headquarters	Statewide	P.O. Box 46700 Olympia, WA 98504	360-407-6000

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DEPARTMENT OF
ECOLOGY
State of Washington

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Designation Recommendation to EPA

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47600, Olympia, WA 98504-7600 • 360-407-6000

February 7, 2025

Dan Opalski, Acting Regional Administrator
U.S. Environmental Protection Agency, Region 10
1200 Sixth Ave, Suite 155
Seattle, WA 98101

RE: Area designations for the 2024 $PM_{2.5}$ National Ambient Air Quality Standard

Dear Acting Regional Administrator Opalski:

On behalf of the Governor, I am submitting the State of Washington's recommendations for air quality area designations for the revised fine particulate matter ($PM_{2.5}$) national ambient air quality standard. The U.S. Environmental Protection Agency (EPA) strengthened the primary annual $PM_{2.5}$ standard to protect public health on February 7, 2024. The revision of the standard from 12 µg/m^3 to 9 µg/m^3 triggered a designation process outlined in EPA's *Initial Area Designations for the 2024 Revised Primary Annual Fine Particle National Ambient Air Quality Standard*[5] memorandum. The designation process laid out in section 107(d) of the Clean Air Act[6] provides states with the opportunity to make recommendations to EPA on designations within one year after the revision of the standard.

The Washington State Department of Ecology (Ecology) developed these recommendations from the most recent certified air quality monitoring data (2021-2023) available from $PM_{2.5}$ Federal Reference Method (FRM) and Federal Equivalent Method (FEM) monitors. Ecology also considered preliminary 2024 data because EPA expects to make final designation decisions based on the 2022-2024 monitor data. A summary "Recommended Designations for the annual $PM_{2.5}$ Standard" is enclosed.

Ecology recommends all counties in the State of Washington be designated as attainment/unclassifiable for the $PM_{2.5}$ standard with the exception of Omak, Washington,

[5] https://www.epa.gov/system/files/documents/2024-02/pm-naaqs-designations-memo_2.7.2024-_-jg-signed.pdf
[6] https://www.govinfo.gov/content/pkg/USCODE-2013-title42/html/USCODE-2013-title42-chap85-subchapI-partA-sec7407.htm

which we tentatively recommend be designated as attainment based on preliminary analysis of 2024 monitor data. Ecology recommendations do not apply to tribal lands, which follow a separate designation process with EPA. Several monitors located on tribal lands are close enough to non-tribal lands that we have included recommendations for these tribal land adjacent areas. In the case of Omak, Washington, a tribal monitor is representing both tribal and non-tribal lands in the same city. Further information on Omak is included below.

RECOMMENDED DESIGNATIONS

Attainment

Monitors in Clark, King, Kitsap, Kittitas, Pierce, Skagit, Snohomish, Spokane, Stevens, Whatcom, and Yakima counties meet the $PM_{2.5}$ standard. We are recommending these areas be designated attainment.

Ecology's recommendation of attainment for Stevens and Yakima counties is based on our assessment of exceptional events for 2021 and 2023. Ecology submitted initial notification to EPA for 2023 exceptional events days on July 30, 2024, for the wildfire influenced days from August 17 – 21 of 2023 at the Colville-E 1st St monitor. Ecology believes that the 2021 exceedance days in August and September at the Yakima 4th Ave and the Toppenish Ward Rd monitors[7] and in July, August, and September at the Colville E 1st St monitor were likely influenced by wildfire smoke to a degree that might otherwise trigger regulatory significance. However, Ecology has not submitted formal exceptional events demonstrations for such events because Ecology does not anticipate that events in 2021 will have regulatory significance as indicated in the EPA's memorandum, *Initial Area Designations for the 2024 Revised Primary Annual Fine Particle National Ambient Air Quality Standard*[8], issued on February 7, 2024. In the unlikely circumstance that events in 2021 are determined to have regulatory significance for final designations decisions for the 2024 revised primary annual $PM_{2.5}$ NAAQS, Ecology will work with EPA to provide additional information consistent with the requirements of the *EPA's Exceptional Events Rule*[9].

Further information on 2021 events can be found in the attached document "2021 Days Flagged for Wildfire Smoke Impacts."

The other counties in Washington State (Asotin, Benton, Chelan, Clallam, Columbia, Cowlitz, Douglas, Ferry, Franklin, Garfield, Grant, Grays Harbor, Island, Jefferson, Klickitat, Lewis, Lincoln, Mason, Pacific, Pend Oreille, San Juan, Skamania, Stevens, Thurston, Wahkiakum, Walla Walla, and Whitman) do not have regulatory $PM_{2.5}$ monitors. $PM_{2.5}$ is monitored in these areas by non-regulatory monitors due to consistently low values. Ecology recommends a designation of attainment/unclassifiable for these areas.

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[7] The Toppenish Ward Rd monitor is operated by the Yakama Nation, Ecology includes this information because it is representative of nearby non-tribal areas.

[8] https://www.epa.gov/system/files/documents/2024-02/pm-naaqs-designations-memo_2.7.2024-_-jg-signed.pdf

[9] https://www.epa.gov/air-quality-analysis/federal-register-notice-final-revisions-exceptional-events-rule

Tentative Attainment

The Omak monitor, located in Okanogan County and operated by the Confederated Tribes of the Colville Reservation Office of Environmental Trust with support from EPA and Ecology, represents a community spanning tribal and non-tribal lands. Because this monitor is a tribal monitor, EPA Region 10 is preparing Exceptional Events Demonstrations to exclude wildfire-impacted data for this monitor from the designation decision.

Ecology recognizes that if EPA were to exclude wildfire-influenced data from the 2021-2023 data set the Design Value for this monitor will still be very slightly above the new $PM_{2.5}$ standard. However, preliminary data analysis indicates that this monitor is likely to be in attainment of the new standard for the 2022-2024 data set that EPA intends to use for the final regulatory decision, in accordance with EPA's initial area designations memo listed above.

There are no major permitted sources of $PM_{2.5}$ in the Omak area. Significant non-regulatory work has been done in the region by the Okanogan River Airshed Partnership and others to reduce $PM_{2.5}$ emissions. This work has included woodstove changeout programs, green waste collection, and wood chipping. These programs address the most significant human-caused sources of $PM_{2.5}$ emissions in the county per the 2020 Emissions inventory[10] for Okanogan County.

Due to the low preliminary monitor values available for 2024, as well as the strong history of non-regulatory work addressing local $PM_{2.5}$ sources, Ecology believes this area is likely to meet the new $PM_{2.5}$ standard when EPA considers the 2022-2024 data set for its final designation decision. Ecology encourages EPA to make its final decision based on the most recent monitor data.

If the Omak monitor does not meet the new standard once all 2024 data is available in early 2025 Ecology intends to submit a boundary designation recommendation.

Thank you for your consideration of our recommendations. Please contact Kathy Taylor or her staff at (360) 584-5104 or Kathy.Taylor@ecy.wa.gov if you have questions.

Sincerely,

Casey D. Sixkiller
Director

Enclosure

cc: Kathy Taylor, Ecology

[10] https://www.epa.gov/air-emissions-inventories/2020-national-emissions-inventory-nei-data

Recommended Designations for the 2024 annual $PM_{2.5}$ Standard

The United States Environmental Protection Agency (EPA) revised the annual federal health-based standard for fine particulate matter ($PM_{2.5}$) in the ambient air to 9 micrograms per cubic meter ($\mu g/m^3$) in February 2024 to improve protection of public health. $PM_{2.5}$ refers to particulates with an aerometric diameter of 2.5 microns or less. Compliance with the $PM_{2.5}$ standard is evaluated over a three-year period by taking the mean or average of each year's mean monitored values. A design value of 9.05 $\mu g/m^3$ or higher is a violation of the annual $PM_{2.5}$ standard.

Site **Site Number**	**County**	**2021 Mean ($\mu g/m^3$)**	**2022 Mean ($\mu g/m^3$)**	**2023 Mean ($\mu g/m^3$)**	**2021-2023 Design Value ($\mu g/m^3$)**	**Designation Recommendation**
Vancouver – NE 84th Ave	Clark	5.65	7.70	6.39	6.6	Attainment
Seattle- 10th & Weller	King	6.53	10.53	7.85	8.3	Attainment
Seattle – Duwamish	King	6.64	8.78	7.74	7.7	Attainment
Seattle – Beacon Hill	King	4.35	7.01	6.02	5.8	Attainment
Bremerton – Spruce Ave	Kitsap	5.20	6.36	4.90	5.5	Attainment
Ellensburg – Ruby St	Kittitas	6.27	7.06	6.48	6.6	Attainment
Omak – 8th Ave (Confederated Tribes of the Colville Nation)	Okanogan	14.88	10.28	11.79	12.3	*** See narrative below
Tacoma – S 36th St	Pierce	6.64	8.34	6.43	7.1	Attainment
Tacoma – L St	Pierce	6.10	8.70	7.17	7.3	Attainment
Anacortes – 202 O Ave	Skagit	4.77*	5.63	5.27	5.2*	Attainment
Darrington – Fir St	Snohomish	5.56	12.16	4.22	7.3	Attainment
Marysville – 7th Ave	Snohomish	7.01	9.11	8.45	8.2	Attainment
Spokane Valley – E Broadway Ave	Spokane	8.99	7.73	7.71	8.1	Attainment
Colville – E 1st St	Stevens	8.99**	8.92	9.03**	9.0**	Attainment
Bellingham – Pacific St	Whatcom	4.02	6.09*	4.96	5.0*	Attainment
Yakima – 4th Ave	Yakima	8.96**	9.13	8.79	9.0**	Attainment
Toppenish – Ward Rd (Yakama Nation)	Yakima	9.02**	9.37**	8.51**	9.0**	Attainment

* Sites with one asterisk do not meet the minimum data completeness requirement of 50 percent data capture per calendar quarter for determination of a valid design value with the substitution tests described in 40 C.F.R. Part 50 Appendix N 4.1 (c).

**Exceptional events due to wildfires were excluded from calculations. In 2021, days flagged in AQS with wildfire-related informational flags ("IT" or "IF") were excluded in descending order until the resulting 2021 annual mean was below 9.05 ug/m3, as shown on each site's corresponding table. In 2022 and 2023, days for which Ecology or EPA Region 10 submitted exceptional events demonstrations were excluded from calculations.

***Exceptional events due to wildfires can only be excluded from design value calculations when they have regulatory significance or impact a regulatory decision. Because the 2023 design value for the Omak monitor would still be very slightly above the 2024 $PM_{2.5}$ standard even with exceptional events excluded, these events can't be excluded from the 2023 design value. Ecology anticipates that these events will have regulatory significance for the 2024 design value EPA will use to make its final designation decision.

The following monitors are excluded from this list because they were either established or discontinued during the 2021-2023 period and therefore have no creditable samples in at least one calendar quarter from 2021-2023. All sites listed below are located in counties where at least one other monitor recorded a valid 2021-2023 design value that Ecology used to determine the designation recommendation for that county. All network modifications listed below were made with approval of the EPA Regional Administrator following the requirements described in 40 C.F.R. Part 58.14, "System modification."

Site **Site Number**	**County**	**Monitor History**
Tukwila Allentown 530330069	King	Site established in April 2021.
Kent-James & Central 530332004	King	Site discontinued in June 2023.
Tacoma-Alexander Ave 530530031	Pierce	Site established in January 2022.
Spokane-Augusta Ave 530630021	Spokane	Site discontinued in March 2021.
Sunnyside-S 16th St 530770005	Yakima	Site established in April 2023.

Response to Comments

Ecology held a public comment period on the proposed area designation recommendation and exceptional events demonstrations from November 8, 2024, through December 13, 2024. During this 36-day public comment period, the public had an opportunity to review and comment on the draft designation recommendation letter, exceptional events demonstration for 2023 $PM_{2.5}$ exceedances due to wildfires at the Colville E 1st St monitor, and report of 2021 days flagged for wildfire smoke impacts. Ecology held a virtual public hearing on these documents on December 10, 2024.

Ecology notified the public about the comment period and hearing in the following ways:

- Web Site – Ecology posted notice to the Ecology webpage and Ecology's Public Involvement Calendar.
- Email Distribution List – Ecology sent out notice via the Air Quality Rules and SIP updates listserv.

Ecology provided the following ways for the public to submit comments on the proposal:

- Online through the Ecology website
- At the virtual public hearing on December 10, 2024
- Postal Mail: Caitlin Cannon, Air Quality Program, Washington State Department of Ecology, P.O. Box 47600, Olympia, WA 98504-7600

Ecology received 4 comments. Our response is below. The transcription of verbal testimony recorded at the public hearing has been edited to remove filler words such as "um" for ease of reading. The original transcription can be obtained through public records request.

Comment 1

Eli Loftis with the Okanogan Conservation District submitted the following comment:

Yes, thank you, my name is Eli Loftis, E-L-I L-O-F-T-I-S. I am the wildfire and community resiliency lead planner for the Okanogan Conservation District leading and managing the conservation district wildfire, forestry, and air quality programs. I am here to speak to express the Conservation District's support for the recommendation that Ecology is providing to the EPA. Air quality is a significant issue for Okanogan County. We are the largest county in the state with one of the least densely populated with only about 8 people per square mile. We struggle with air quality severely due to multiple point sources of $PM_{2.5}$ and PM_{10} but also due to significant wildfire events. We agree with Ecology that the 2024 data will most likely show that we are hopefully within attainment of these new federal standards. We have been a major part of the air quality and fire resiliency efforts here in our community for many years, leading community chipping events in collaboration with our other Okanogan River Airshed Partnership members which includes the Confederated Tribes of the Colville Reservation, Okanogan County Solid Waste and many others including Clean Air Methow which is a part of the Methow Valley Citizens Council. As stated, we fully support these recommendations and strongly hope that

EPA accepts them as a nonattainment declaration will have a disproportionate negative impact on some of our most vulnerable citizens and other members of our community and cause a significant regulatory burden which is unnecessary for a community of this size and area. Thank you.

Ecology's Response: Thank you for your support of our draft recommendation. Ecology recognizes the dedicated work of many organizations in Okanogan County through the Okanogan River Airshed Partnership to reduce $PM_{2.5}$ exposure and protect public health.

Comment 2

Isabelle Spohn submitted the following comment:

Thank you, Isabelle I-S-A-B-E-L-L-E Spohn S-P-O-H-N. I live in the Methow Valley and have a great interest in air quality. I fully support making a more stringent standard. We need to protect our health. Regarding the recommendation I will submit further testimony after I have seen the documents that you presented but at this point I would like to advocate for deciding after the data is in exactly whether or not we are in compliance. Thank you.

Ecology's Response: Thank you for your comment. Ecology's recommendation is based on certified air quality data from 2021-2023, along with a preliminary analysis of 2024 data. The 2024 data will be complete and certified by the time EPA announces their designation decision scheduled for early 2026. EPA expects to make their final decision based on three years of certified air quality data from 2022-2024.

Comment 3

Anna Jones with the Methow Valley Citizens Council submitted the following comment:

To Whom This May Concern at the EPA,

I am writing as the Program Manager for Clean Air Methow regarding the EPA's potential designation of Omak, WA, as a nonattainment area under the revised PM2.5 National Ambient Air Quality Standards (NAAQS). This designation carries significant implications for public health, economic development, and environmental management across the region.

While the Omak monitor provides valuable data, it is essential to consider the broader context of air quality across geographic boundaries. The Methow Valley's air quality is shaped by distinct factors, including seasonal wildfire smoke and weather patterns that differ significantly from those in Omak. Misrepresenting these conditions could result in unnecessary regulatory burdens

on communities already actively working to improve air quality.

I urge the County Commissioners to advocate for the EPA to rely on the most recent, high-quality data and to consider localized conditions and exceptional events, such as wildfire impacts, in its decision-making process. As noted in Ecology's draft recommendations, exceptional events have been flagged in the region, and their exclusion is vital to ensuring a fair assessment of air quality data.

Clean Air Methow remains committed to proactive measures that protect air quality, and we encourage the EPA to focus regulatory efforts on areas with the most acute challenges. Ensuring accurate, science-based designations will not only protect public health but also maintain community trust and foster collaborative air quality solutions.

I welcome the opportunity to discuss this issue further or provide additional context if needed. Please feel free to contact me at 509-997-0888x6 or annam@mvcitizens.org.

Sincerely,

Anna Jones
PO Box 774
Program Manager, Clean Air Methow
Twisp, WA 98856
www.mvcitizens.org
509 997-0888

Ecology's Response: Thank you for your comment. Ecology recognizes that Okanogan County is very large and has diverse terrain that creates multiple airsheds. Ecology supports a network of multiple $PM_{2.5}$ monitoring sites in Okanogan County in order to accurately characterize air quality in these distinct airsheds. At this time we are recommending attainment for all of Washington, but if EPA were to disagree we would recommend a boundary smaller than the county. In the past the EPA has agreed with Washington State recommendations for nonattainment area boundaries smaller than a county.

Comment 4

Isabelle Spohn submitted the following comment:

Thank you for your work on behalf of the public.

First, I am in total agreement with the EPA's strengthening of the primary annual PM 2.5 standard from 12 µg/m3 to 9 µg/m3. Doing what we can to protect the health of not only humans, but also wildlife, in these challenging times of changing climate is of great importance.

I'm a full-time resident and registered voter in Okanogan County, having lived here since 1978. Although I'm concerned with Air Quality in the entire county, my primary concern is for the Methow Valley because I live here. My concern also stems from our very sensitive air shed, which is subject to the frequent inversions typical of a high mountain valley, particularly during the winter. And in the upper Methow, these inversions can be as low as the roof of a home, with woodsmoke smoke sometimes entering homes in the neighborhood through closed windows. Although PM2.5 from wildfire is largely not controllable by humans, we can control to some degree the human impacts during other times of the year that contribute to the annual average.

I do agree with noting and considering exceptional events such as wildfires in your calculations regarding attainment/nonattainment issues.

The Omak Monitor: Boundaries of Attainment areas

I have read in the enclosed documents that "Consideration of geography or topography can provide additional information relevant to defining non attainment area boundaries. The EPA recommends that analyses examine the physical features of the land that might define the air shed and, therefore, affect the formation and distribution of PM2.5 concentrations over an area. Mountains or other physical features may influence the fate and transport of emissions and PM2.5 concentrations. Additional analyses may consider topographical features that cause local stagnation episodes via inversions."

However, I have also read that "The EPA recommends that the boundaries of attainment/unclassifiable areas generally not be smaller than a county."

First, we need to consider that Okanogan County is larger than 3 of the smallest states in the USA. This fact alone should indicate that special consideration of the boundaries of attainment areas in this county is appropriate. In addition, our county includes numerous air sheds, water sheds, and various ecosystems from shrub-steppe to high mountains and valleys - all of which create various and differing impacts upon meteorology and air quality.

In the case of the Omak monitor and any questions arising from its data, I contend that the Methow Valley and the Okanogan Valley are two discreet, adjacent air sheds and water sheds with very different topography and populations. They are separated by the Okanogan Range. The Methow has high mountains and is narrow and winding, creating a challenging situation for modeling and collection of data especially during winter when inversions are more severe and wood stoves are in use. Omak and the Okanogan Valley, on the other hand, is more subject to the impacts of a larger human environment. Both, of course, are affected unpredictably and often separately by PM 2.5 from wildfire.

In deciding issues of attainment/non-attainment, these two valleys should be considered separately for the above reasons.

In respect to any necessary use of baseline data, I suggest that WDOE/EPA review the air quality studies (including monitoring and computer modeling) conducted by the EPA in order to comply with Regional Forester Jeff Sirmon's 7/05/84 Record of Decision addressing the Early

Winters Winter Sports Study in regards to air quality (focusing especially upon woodstove and fireplace usage at the proposed resort.) Accurate baselines are especially important due to the potential impacts upon the adjacent Pasayten and Sawtooth Wilderness areas (Class 1air) - particularly if PSD increments are an issue in future applications.

Public Input and Advertisement of Opportunities to Comment

Thank you especially for the very useful documents that were provided for this comment period. However, should WDOE/EPA desire any substantial amount of public input from the Omak or Okanogan County areas, I would suggest advertising hearings in a manner that would encourage this input. The general populace is not accustomed to regularly viewing the website of WDOE in case there are statewide issues to which they would want to respond. A good practice would be to advertise such a hearing in the county's newspaper of record (Currently the Omak Chronicle, sometimes the Methow Valley News - on a year-to-year basis) so that the general populace would be aware. It could include reference to the WDOE website for details. I only became aware of this opportunity to comment because I listened in (over Zoom) to a recent Okanogan County Commissioners' meeting.

Thanks once again for your attention to public health and the environment in Washington State.

Sincerely yours,

Isabelle Spohn

509-997-4425

Ecology's response: Thank you for your comment. Ecology agrees that the Methow and Okanogan River Valleys represent different airsheds. Ecology supports a network of multiple $PM_{2.5}$ monitoring sites in Okanogan County in order to accurately characterize air quality in these distinct airsheds. At this time we are recommending attainment for all of Washington, but if EPA were to disagree we would recommend a boundary smaller than the county. In the past the EPA has agreed with Washington State recommendations for nonattainment area boundaries smaller than a county.

Ecology was not able to access the referenced studies in the time available, however the Washington State Air Quality Monitoring Network aligns with EPA's guidelines for $PM_{2.5}$ monitoring found in 40 C.F.R. parts 50, 53, and 58[11]. Available monitoring technology has evolved significantly since the referenced Record of Decision. EPA maintains a complete data record of $PM_{2.5}$ monitoring data submitted by Ecology since $PM_{2.5}$ monitoring began in the late 1990s, which can provide any necessary baseline data for analysis of $PM_{2.5}$ trends.

Thank you for your feedback on our public notice process. We appreciate the suggestion and will take this into consideration for future public notices.

[11] https://www.ecfr.gov/current/title-40/chapter-I

Appendix A. Exceptional Event Demonstration for 2023 $PM_{2.5}$ Exceedances Due to Wildfires at Colville E. 1st St. (AQS ID: 530650005)

Acronyms and Abbreviations

AQA – Air Quality Alert

AQI – Air Quality Index

AQS – Air Quality System

CAA – Clean Air Agency

DNR – Department of Natural Resources

DOH – Department of Health

Ecology – Department of Ecology

EER – Exceptional Events Rule

HMS – Hazard Mapping System (from NOAA)

HYSPLIT - HYbrid Single-Particle Lagrangian Integrated Trajectory

L&I – Department of Labor & Industries

MODIS - Moderate Resolution Imaging Spectroradiometer

NAAQS – National Ambient Air Quality Standards

NOAA – National Oceanic and Atmospheric Administration

Executive Summary

Washington State Department of Ecology (Ecology) found that an air quality monitoring site located in Colville, Washington was impacted by smoke from wildfires. It caused brief exceedances of the 2024 annual national ambient air quality standard for fine particles ($PM_{2.5}$ NAAQS). Colville is located in central Stevens County. Local sources of $PM_{2.5}$ pollution include residential woodburning, agricultural and transportation activities – all of them are well controlled.

The Environmental Protection Agency (EPA) wrote the Exceptional Events Rule (EER)[12] to allow states to flag air quality data as exceptional and request EPA to exclude those data from influencing decisions to control industrial or other controllable human-caused sources of pollution. An exceptional event (EE) is a natural or unusual event that can overwhelm existing pollution control strategies. Examples of exceptional events include, but are not limited to, smoke from wildland fires, dust from high winds, volcanic activities, stratospheric ozone intrusions, and pollution from traditional national, ethnic, or other cultural events (e.g., fireworks). Data that is excluded by an exceptional event demonstration remains in both the state and federal databases and is used for health-based notifications and exposure evaluations.

Ecology flagged values at the Colville (E. 1st St.) monitoring site and requests EPA concurrence that certain flagged values are exceptional events. The $PM_{2.5}$ flagged values are over 9 micrograms per cubic meter ($\mu g/m^3$) and affect Washington's attainment of the 2024 annual $PM_{2.5}$ NAAQS. Ecology demonstrates that these exceptional concentration values:

- occurred as a result of wildfire smoke
- were not reasonably controllable or preventable by the State of Washington
- are not likely to reoccur and fully meet the EER criteria for excluding monitor values from the data used to determine attainment of the NAAQS

Ecology is only requesting concurrence for days that are of regulatory significance but is also providing information for days that may become regulatorily significant in the future.

Required elements of the Exceptional Events Rule

The EER requires that demonstrations justifying data exclusion for exceptional events must include the following:

a) A narrative conceptual model that describes the event(s) causing the exceedance or violation and a discussion of how emissions from the event(s) led to the exceedance or violation at the affected monitor(s);

[12] https://www.epa.gov/air-quality-analysis/federal-register-notice-final-revisions-exceptional-events-rule

b) A demonstration that the event affected air quality in such a way that there exists a clear causal relationship between the specific event and the monitored exceedance or violation;

c) Analyses comparing the claimed event-influenced concentration(s) to concentrations at the same monitoring site at other times to support the clear causal relationship requirement;

d) A demonstration that the event was both not reasonably controllable and not reasonably preventable;

e) A demonstration that the event was a human activity that is unlikely to recur at a particular location or was a natural event; and

f) Documentation that the State followed the public comment process and conducted at least a 30-day comment period.

In addition, a state must submit the public comments with the demonstration and address in the demonstration those comments disputing or contradicting factual evidence provided in the demonstration (40 CFR 50.14 (c)(3)(v)).

Introduction

Ecology requests an exclusion of the wildfire measured exceedances of the 2024 annual $PM_{2.5}$ (fine particulate matter) National Ambient Air Quality Standards (NAAQS) at Colville, Washington for 4 days, 8/17/2023, 8/19/2023, 8/20/2023, and 8/21/2023. Information has also been included for 8/18/2023 in case this day becomes regulatorily significant in the future. This demonstration provides evidence and narrative satisfying all the requirements set forth in the Exceptional Events Rule. The exceedances were the direct result of wildfire events that affected air quality at the Colville monitor (AQS Site ID 530650005, Parameter Code 88101, Parameter Occurrence Code 5).

The regulatory significance of the requested exceptional event days was evaluated using the 2022-2023 mean $PM_{2.5}$ at the Colville monitor, calculated following the procedures described in Appendix N to 40 C.F.R. Part 50, compared to the annual $PM_{2.5}$ NAAQS of 9.0 µg/m^3. The 2022-2023 mean $PM_{2.5}$ was considered the best available surrogate for the 2024 annual design value based on currently available data, following guidance from EPA Region 10. Ecology recognizes that the 2024 annual design value will ultimately determine the regulatory significance of the requested exceptional event exclusions. Table A-1**Error! Reference source not found.** shows the 2022-2023 mean $PM_{2.5}$ calculated after excluding each of the four requested exceptional event days in descending order of daily mean $PM_{2.5}$. Exclusion of all four exceptional event days is necessary in order for the 2022-2023 mean $PM_{2.5}$ to reach at or below 9.04 µg/m^3, which is the highest mean expected to attain the 2024 annual $PM_{2.5}$ NAAQS.

Table A-1 Regulatory Significance of Requested Exceptional Events Days

Date	**Daily $PM_{2.5}$ (µg/m^3)**	**Qualifier Flags**	**Request Exclusion from the regulatory decision?**	**2022-2023 Mean after Exclusion (µg/m^3)**
8/20/2023	154.2	IF, IT	Yes	9.325
8/19/2023	140.9	IF, IT	Yes	9.143
8/21/2023	70.5	IF, IT	Yes	9.057
8/17/2023	61.6	IF	Yes	8.981

The conceptual model describes the events and how the emissions from the events led to the exceedances on the monitor each day. It demonstrates that a clear causal relationship exists between the wildfire smoke events and the monitored exceedances. Ecology compared the historical concentrations at the Colville monitor to the exceedance concentrations to support the clear causal relationship requirement. The wildfire events were both not reasonably controllable, not reasonably preventable, and were natural events. Ecology worked with its partners to promptly notify the public of the event and provided public education so individuals could reduce their exposure to wildfire smoke.

Conceptual Model

In August 2023, smoke from regional wildfires was transported to the Colville monitor. The Colville monitor recorded several daily exceedances of the annual $PM_{2.5}$ NAAQS from 8/6/2023 to 8/29/2023 as a result of wildfire smoke. The conceptual model describes the source of the fine particulate matter that impacted the monitor, the transport weather conditions that brought aerosols to the monitor, and the timing and magnitude of the events' impacts on the monitor.

Overview

Wildfires occur every year in the Pacific Northwest during summer and fall. The 2023 wildfire smoke season started early, due to a heat wave in May that affected the Pacific Northwest. Large multi-day wildfires didn't occur in Washington until July, but Canada had many large fires that started in the Spring and burned for several months. Additional fire starts due to lightning occurred throughout the summer across the region. The 2023 wildfire season had the most area burned in Canada's recorded history with more than 45 million acres burned, sending smoke to many parts of the USA. Significant Canadian smoke influenced Washington State from August 15 to August 22, which coincided with significant smoke impacts from Washington wildfires in the Cascades. Moderate smoke persisted for several more days until a frontal system in late August produced rain and cooler weather, which mostly put an end to the wildfire season. Washington saw over 151,000 acres burn in wildfires in 2023.[13] There were also 202,000 acres burned in Oregon, 87,000 acres burned in Idaho, and 7,017,000 acres burned in British Columbia.[14]

Several fires in Washington, Idaho, and British Columbia impacted the Colville monitor during the mid-August 2023 event. Colville was directly impacted by the Crater Creek fire in BC, just north of the USA/Canada border, for several days. However, many more fires influenced the area, especially from August 19 to August 22 when a low-pressure weather system (remnants of Hurricane Hilary) allowed wide-spread smoke to persist across the region. Additional fires of influence included the Ross Moore Lake fire in BC, the Lower East Adams Lake fire in BC, the Bush Creek East fire in BC, the Sourdough fire in Washington, the Airplane Lake fire in Washington, and other regional fires.

[13] https://www.nifc.gov/fire-information/statistics
[14] https://www2.gov.bc.ca/gov/content/safety/wildfire-status/about-bcws/wildfire-history/wildfire-season-summary

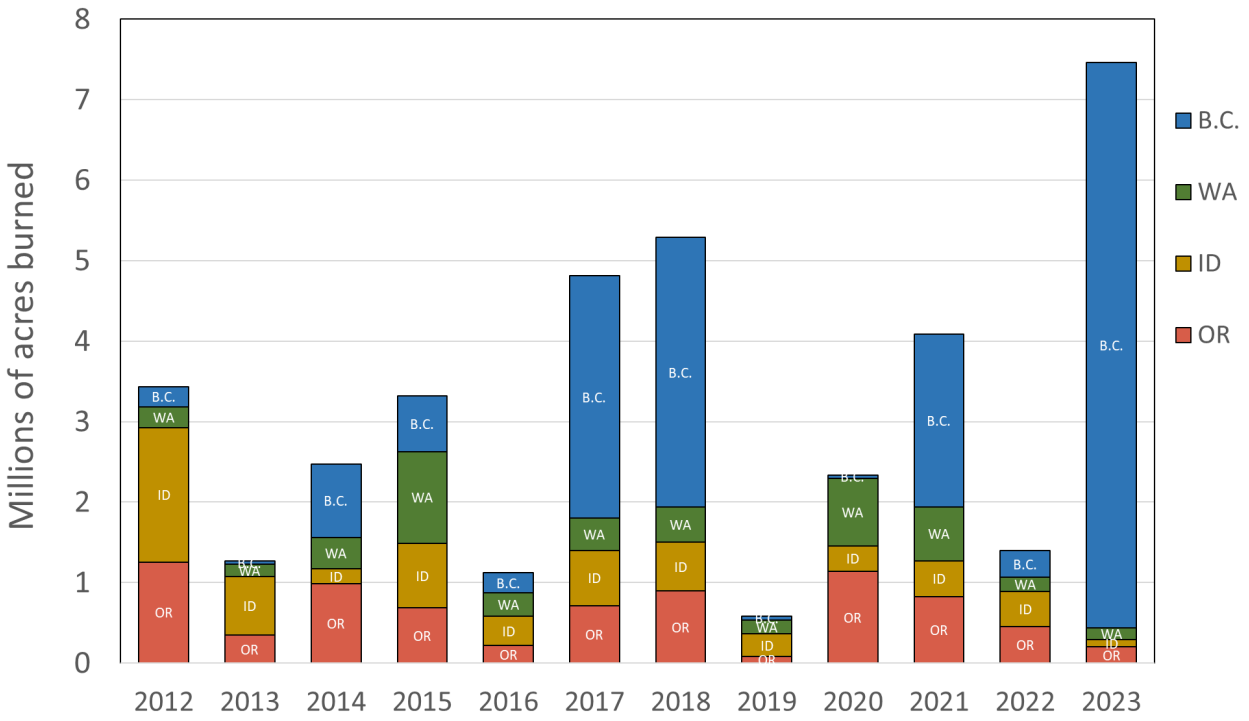

Figure A-1. Total area burned for wildfires in Oregon, Idaho, Washington, and British Columbia from 2012 to 2023 from NIFC[15] and the Government of British Columbia.[16]

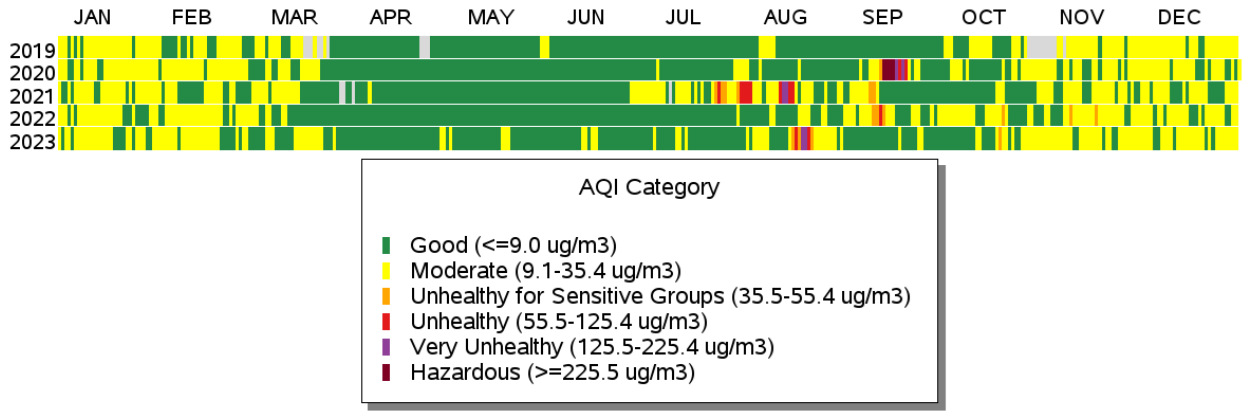

Figure A-2 $PM_{2.5}$ Daily AQI Values 2019-2023 Colville E 1st St monitor, AQS Site ID 53-065-0005[17]

General weather conditions

The first week of August 2023 included an overcast weather event that allowed haze and smoke from regional fires to persist on August 5th and 6th. Over the next week, after the residual

[15] www.nifc.gov/fire-information/statistics
[16] https://www2.gov.bc.ca/gov/content/safety/wildfire-status/about-bcws/wildfire-statistics/wildfire-averages
[17] Created with EPA's Multi-Year Tile Plot tool for Exceptional Event Analysis. https://www.epa.gov/air-quality-analysis/multiyear-tile-plot-exceptional-events-analysis

smoke cleared, temperatures increased and conditions became extremely hot and dry across the West. Strong westerly winds on August 15 allowed fires to grow quickly, increasing smoke production across the region. Significant smoke production occurred across the region for the next few days, as extreme temperature and strong winds continued. A low-pressure weather system traveled past the state on August 17, which cleared some residual smoke out, but the hot and windy conditions exacerbated fires. A large residual smoke layer was evident across most of Washington on August 19, as winds shifted and allowed smoke to pool in the Columbia Basin and persist in mountain valleys. The National Weather Service (NWS) Area Forecast Discussion (AFD) on August 20 noted remnants of Hurricane Hilary affecting the region, as shown in the Figure below. The NWS AFD went on to say "A slight cloud shield is brushing our southeast WA corner and the southern Idaho Panhandle but is thinning out. The local and regional fires can still be seen on satellite as hot spots and coincident our air quality is some of the worst in the country and near the top of the worst in the world. Not something we want to be winning at, but here we are. Northerly winds down the Okanogan Valley will begin to relax through the day today (Sunday) while the northeast wind from the Purcell Trench in northern Idaho through the West Plains and Palouse will relax and weaken by early this afternoon. However, the smoke filtering into the Inland Northwest from Canadian wildfires and local wildfires will stick around through at least mid-day Monday, per the latest HRRR smoke model."[18]

[18] https://mesonet.agron.iastate.edu/wx/afos/p.php?pil=AFDOTX&e=202308201026

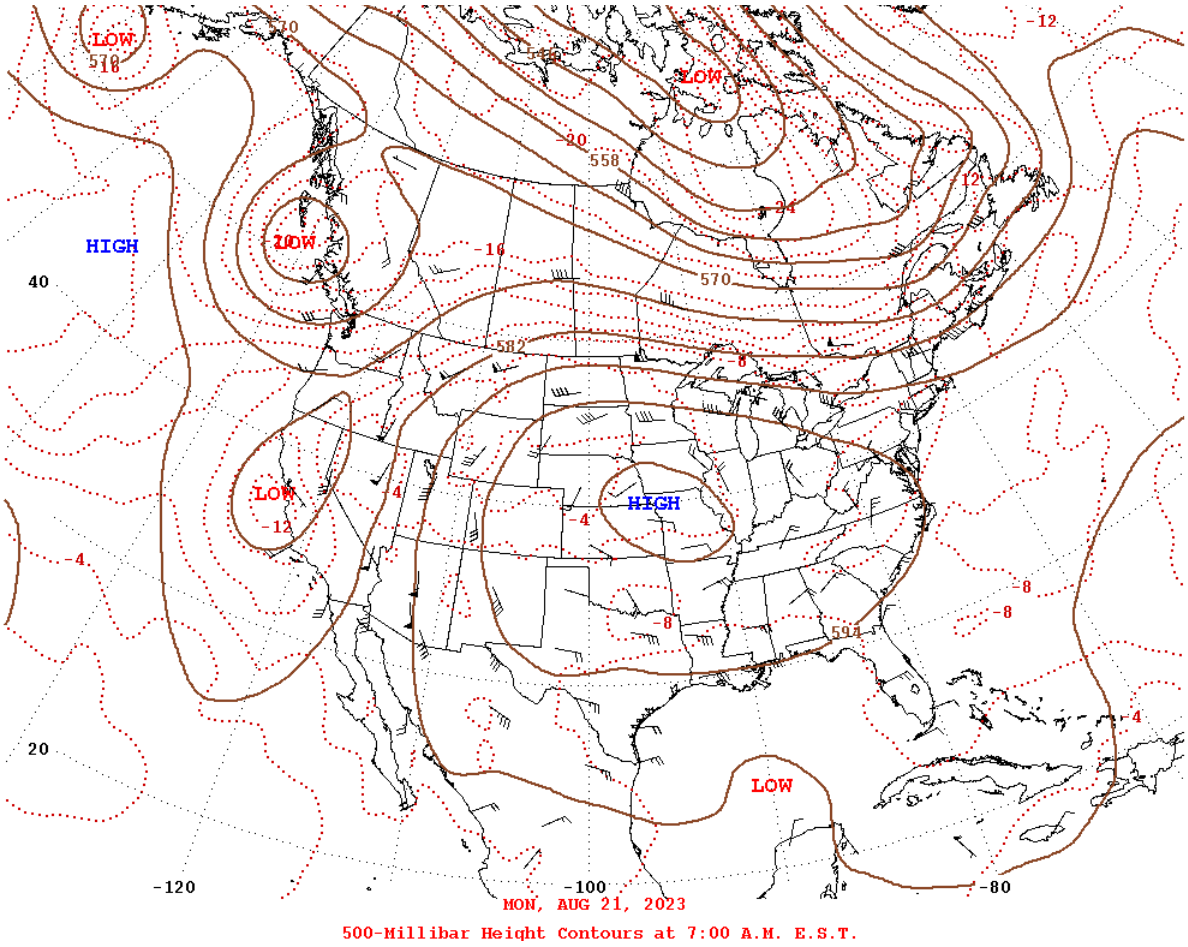

Figure A-3. 500 mb height contours on August 21, 2023 (4 a.m. PST) acquired from the NOAA Weather Prediction Center Product Archive.[19]

Source area and affected region

The Colville community in Stevens County, Washington, is a forest-oriented community (population 4,917) in a valley of the Colville River situated in the east Okanogan Highlands. Colville is the largest city in Stevens County and is about 65 miles north of Spokane. Many of the homes are heated by wood. As a result, the major contributor to the historical particulate air pollution has been residential wood combustion for home heating, especially on stagnant winter days when temperature inversions form over the small valley. In contrast, wildfire season is often at its peak in late summer in the Pacific Northwest, which can cause serious smoke impacts.

[19] https://www.wpc.ncep.noaa.gov/archives/web_pages/wpc_arch/get_wpc_archives.php

Fires

In 2023, wildfire smoke events in Washington became significant in the last week of July. Considerable fire activity in Washington and the nearby region increased in mid-August, with wildfire smoke impacting many parts of the state from August 15 to August 22, followed by moderate smoke for several more days. A frontal system in late August produced rain and cooler weather, which mostly put an end to the wildfire season.

On August 15, fires in the Cascades increased smoke production as strong westerly winds were evident across the region. On August 16, north-westerly winds transported smoke from BC fires to northeast Washington. On August 18, smoke production from BC fires was extreme and greatly influenced northeast Washington. By the morning of August 19, smoke had filled the Columbia Basin and most of the state was covered in smoke. Smoke production continued for the next few days as wide-spread smoke persisted across the region. MODIS imagery from Worldview[20] clearly shows the buildup of smoke over several days.

The Crater Creek fire was the most impactful to the Colville site during the August 2023 multi-day smoke event, but several other fires influenced the region and contributed to residual smoke. See Figure A-4 for a map of wildfires in the region; see Table A-2 for details about the most significant wildfires that impacted Colville.

[20] https://worldview.earthdata.nasa.gov/?v=-128.35916752308734,42.337961387770605,-110.62305263927004,51.196781269843925&l=Reference_Labels_15m,Reference_Features_15m,Coastlines_15m,MODIS_Combined_Thermal_Anomalies_All,MODIS_Aqua_CorrectedReflectance_TrueColor&lg=false&t=2023-08-18-T00%3A00%3A00Z

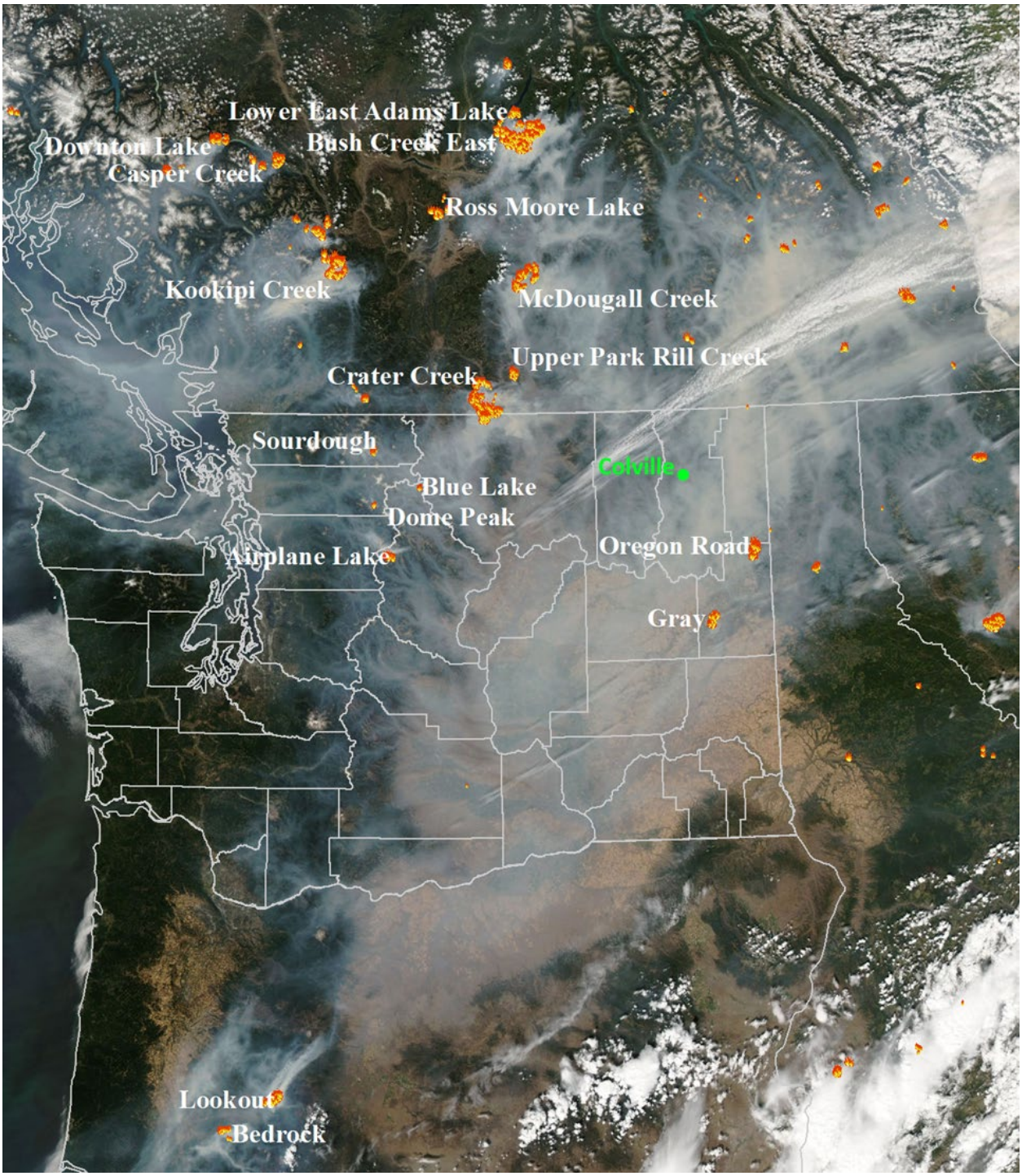

Figure A-4. Map of regional wildfires on August 19, 2023 that contributed to smoke events. The background layer is Aqua/MODIS imagery (~2 pm LT). HMS hot-spot locations are shown as red/orange fire symbols.

Table A-2. Wildfires that contributed to exceedances at Colville in 2023

Wildfire Name	Location	Discovery Date	Acres Burned
Kookipi Creek	Lytton, BC	July 8	44,590
Casper Creek	Anderson Lake, BC	July 11	27,180
Adams Lake Complex	Adams Lake, BC	July 12	64,225
Downton Lake	Mt. Penrose, BC	July 13	20,880
Ross Moore Lake	Ross Moore Lake, BC	July 21	23,304
Crater Creek	Cathedral Provincial Park, BC	July 23	100,000+
Eagle Bluff	Oroville, WA / Osoyoos, BC	July 29	16,428
McDougall Creek	Kelowna, BC	August 15	33,883
Upper Park Rill Creek	NE of Keremeos, BC	August 18	5,048
Bedrock	Lane County, OR	July 22	31,590
Lookout	Lane County, OR	August 8	25,754
Airplane Lake	Chelan County, WA	July 26	6,956
Sourdough	Whatcom County, WA	August 1	7,377
Dome Peak	Snohomish County, WA	August 9	1,477
Blue Lake	Chelan County, WA	August 14	1,074
Gray	Spokane County, WA	August 18	10,085
Oregon Road	Spokane County, WA	August 18	10,817

Clear Casual Relationship

The EER requires that a clear causal relationship exists between the event that affected air quality and the monitored exceedance. In 2024, EPA released the "$PM_{2.5}$ Wildland Fire Exceptional Events Tiering Document"[21] that provides three tiers of analyses that apply to the "clear causal relationship" criterion included in an exceptional event demonstration. The tiered approach recognizes that some wildfire events are easily recognizable, so fewer pieces of evidence are needed to show a clear causal relationship. The tiering threshold is based on the most recent 5-year period of monitoring data (2019-2023), as the lesser value of either (a) the month-specific 98th percentile for 24-hour $PM_{2.5}$data or (b) the minimum annual 98th percentile for 24-hour $PM_{2.5}$data with Informational (I) qualifiers on the monitoring data excluded.

- Tier 1: intended for wildfire events that cause unambiguous $PM_{2.5}$impacts well above historical 24-hour concentrations, thus requiring fewer pieces of evidence to establish a clear causal relationship. Tier 1 demonstrations are appropriate for 24-hour $PM_{2.5}$ greater than or equal to 1.5 times the threshold determined.
- Tier 2: should be used for events when $PM_{2.5}$ concentrations are less distinguishable from historical concentrations, and thus require more pieces of evidence than a Tier 1 analysis. Tier 2 demonstrations are appropriate for 24-hour $PM_{2.5}$ greater than or equal to the threshold but less than 1.5 times the threshold.
- Tier 3: should be used for events when $PM_{2.5}$ concentrations are near or within the range of historical concentrations, and thus require more pieces of evidence to establish the clear causal relationship than Tier 2 or Tier 1. Tier 3 demonstrations are appropriate for 24-hour $PM_{2.5}$ less than the threshold.

The "EPA $PM_{2.5}$ Tiering Tool for Exceptional Events Analysis"[22] was used to determine the thresholds at Colville for August 2023. For the month of August, the 5-year month-specific 98th percentile (13.9 ug/m^3) from 2019 to 2023 was less than the annual 5-year 98th percentile (18.0 ug/m^3). Therefore, the value of 13.9 ug/m^3 (the month-specific 98th percentile) was used as the tiering threshold for August 2023. Thus, Tier 1 demonstrations are appropriate for concentrations of 20.85 µg/m^3 or greater, while Tier 2 demonstrations are appropriate for concentrations greater than or equal to 13.9 µg/m^3 but less than 20.85 µg/m^3. A total of 7 Tier-1 exceedances and 5 Tier-2 exceedances occurred in August 2023 due to wildfire smoke.

[21] www.epa.gov/system/files/documents/2024-04/final-pm-fire-tiering-4-30-24.pdf
[22] www.epa.gov/air-quality-analysis/pm25-tiering-tool-exceptional-events-analysis

Table A-3. $PM_{2.5}$ daily average concentrations and Tiers for August 2023 at Colville

Date	Daily mean concentration (ug/m^3)	Tier	Request for exclusion from regulatory decision
8/6/2023	19.2	Tier 2	False
8/16/2023	31.4	Tier 1	False
8/17/2023	61.6	Tier 1	True (RF flag)
8/18/2023	50.9	Tier 1	False
8/19/2023	140.9	Tier 1	True (RF, RT flags)
8/20/2023	154.2	Tier 1	True (RF, RT flags)
8/21/2023	70.5	Tier 1	True (RF, RT flags)
8/22/2023	34.4	Tier 1	False
8/23/2023	16.1	Tier 2	False
8/27/2023	15.2	Tier 2	False
8/28/2023	21	Tier 2	False
8/29/2023	19.3	Tier 2	False

$PM_{2.5}$ and wind data time series

The three-tiered time series graph below shows hourly wind speed and wind direction as well as hourly $PM_{2.5}$ at the Colville monitor during the wildfire smoke event. Meteorological data were collected on site at Colville-E 1st St and submitted to EPA's AQS database. On August 16, northwesterly winds carried smoke into the Colville valley, causing hourly $PM_{2.5}$ concentrations to grow to 50 µg/m^3. Winds died down and hourly $PM_{2.5}$ exceeded 100 µg/m^3 for several hours on August 17. On the afternoon of August 17, wind speeds increased again, clearing most of the smoke from the Colville valley. On August 18, wind speeds were very strong and wildfires generated extreme smoke plumes which dispersed smoke across the region. Hourly $PM_{2.5}$ at Colville exceeded 150 µg/m^3 on the evening of August 18 but dropped down to 60 µg/m^3 in the early morning hours of August 19 as winds shifted direction and died down. Strong northwesterly winds returned on August 19, and more smoke traveled into the area, adding to the residual that was still there from the day before. Hourly $PM_{2.5}$ concentrations reached 250 µg/m^3 midday on August 19, leveling out at 200 µg/m^3 as winds died down in the evening. Hourly concentrations stayed above 100 µg/m^3 on August 20 and the morning of August 21, but a weather system decreased smoke production across the region and brought southeasterly winds. Fire activity slowed down on August 22 with cooler temperatures and moisture in the region, which allowed smoke to slowly clear out. However, hourly concentrations remained above 25 µg/m^3 on August 22 as wind speeds were relatively low.

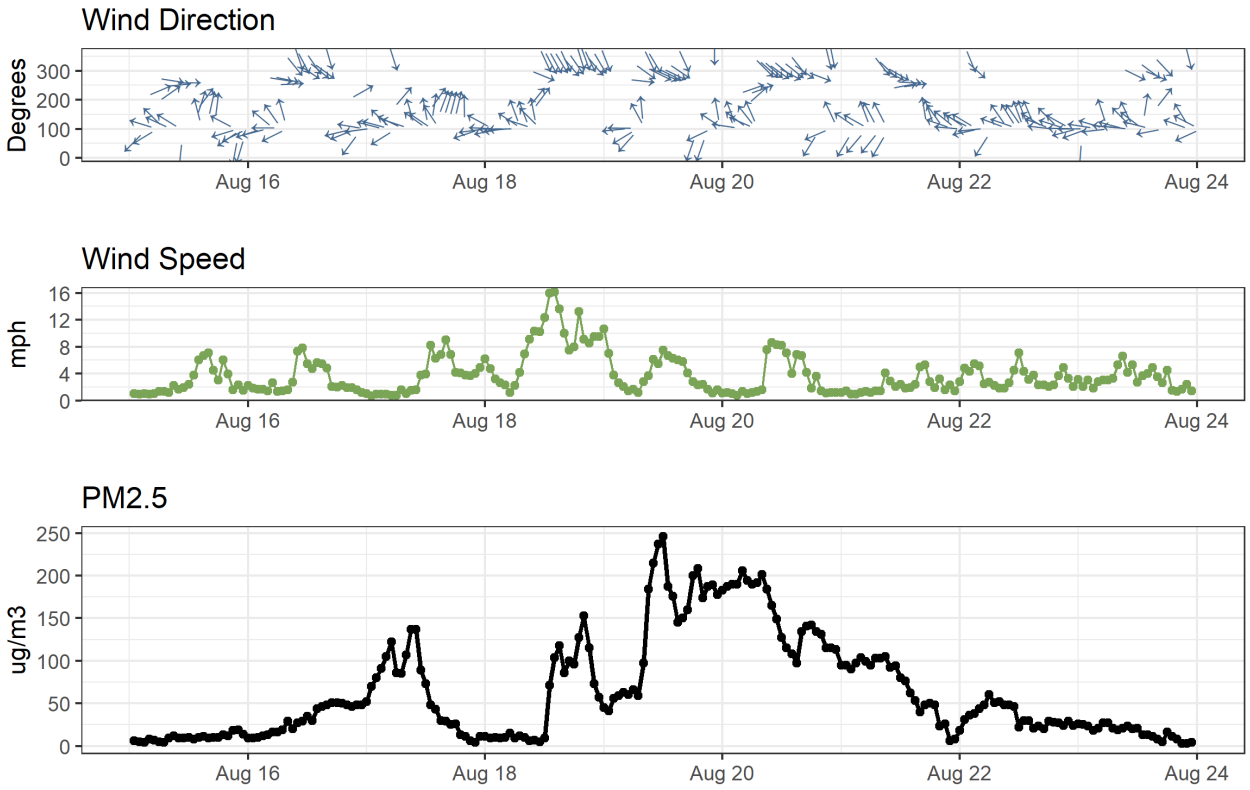

Figure A-5. Hourly $PM_{2.5}$, wind speed, and wind direction at Colville from August 15 through August 24, 2023.

Satellite data and back trajectories

Satellite imagery provides visual evidence of the size and direction of the smoke plumes that affected Colville. Both MODIS[23] and GOES[24] satellite imagery were analyzed for the wildfire season. HYSPLIT back trajectory modeling was conducted through EPA's AirNowTech website. The HYSPLIT model shows the back trajectory from the monitor to show that smoke traveled from the direction of the wildfires relative to the monitor. The HYSPLIT model also shows the trajectory of smoke at varying heights. The figures below show satellite imagery and HYSPLIT back trajectories for Colville on August 17, 18, 19, 20, and 21.

[23] worldview.earthdata.nasa.gov
[24] www.star.nesdis.noaa.gov/smcd/spb/aq/AerosolWatch/

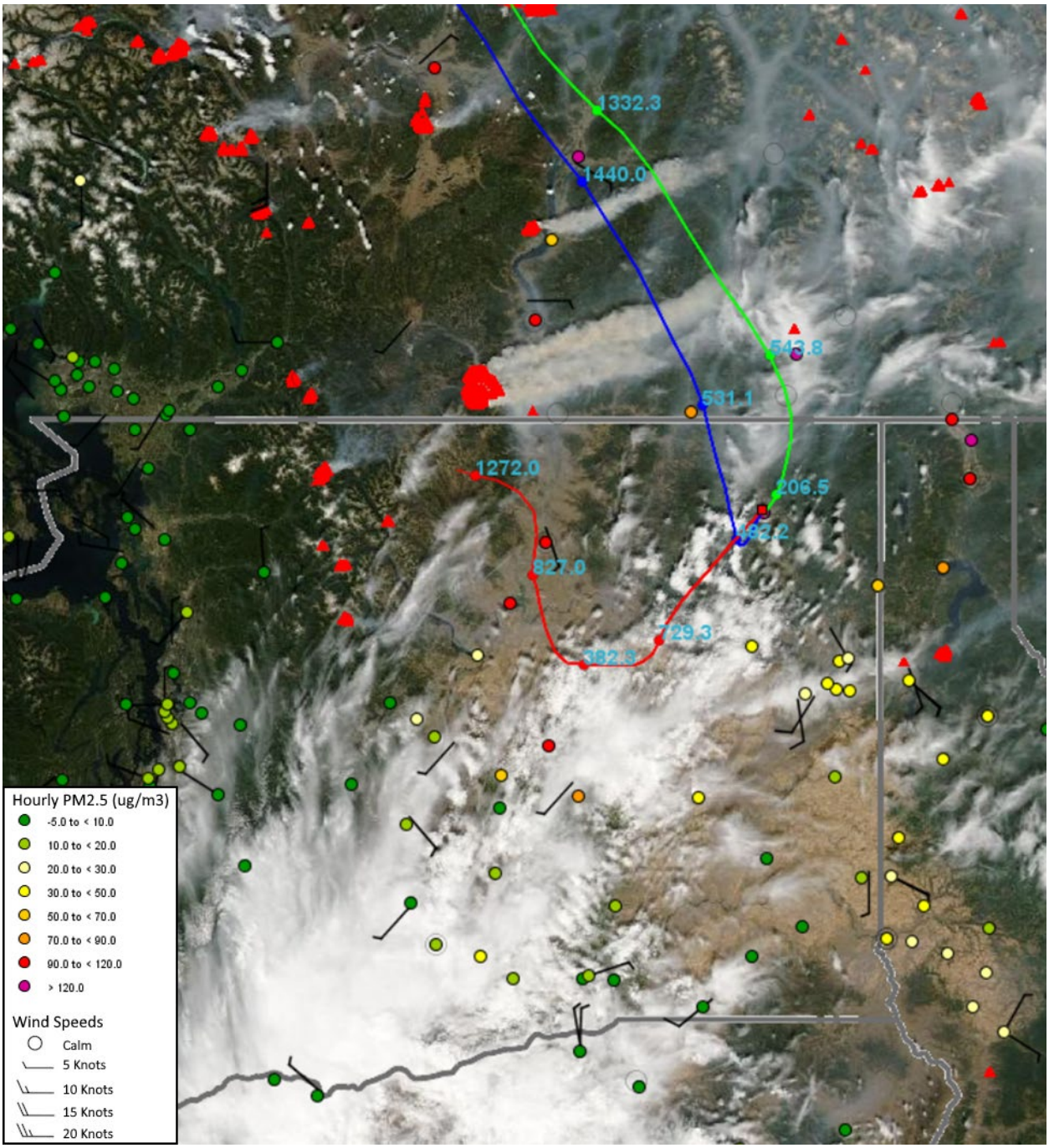

Figure A-6. HYSPLIT back-trajectories on August 17, 2023 for Colville.

24-hour back-trajectories were initiated at 200 (green), 500 (blue), and 1000 (red) meter starting heights. The trajectories, wind barbs, and $PM_{2.5}$ monitors shown are for 9 am PST, when concentrations were highest that day. Blue labels along trajectories are heights above ground level in meters. The background layer is Aqua/MODIS imagery (~2 pm LT). HMS-detected hot-spots are shown as red triangles.

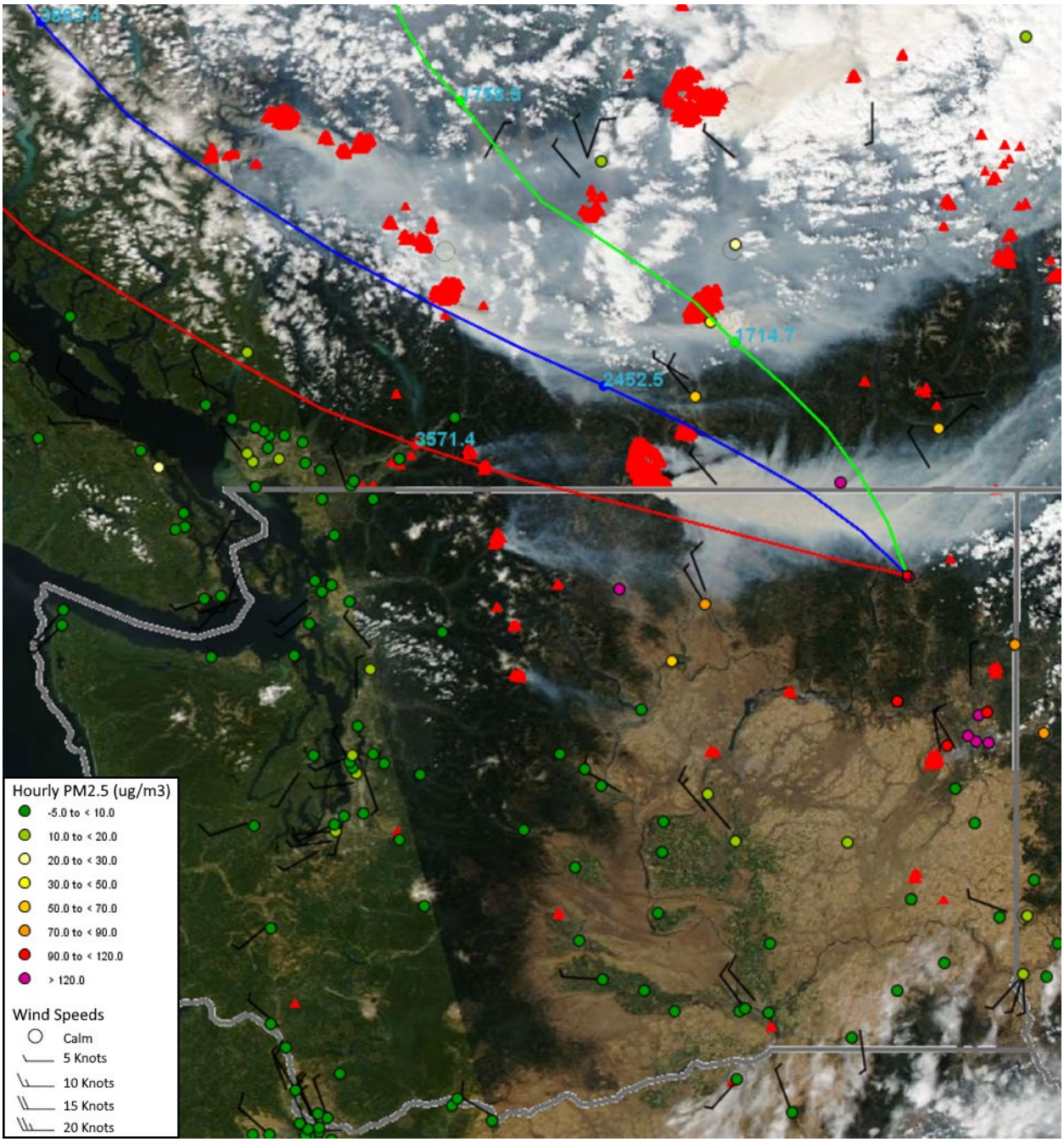

Figure A-7. HYSPLIT back trajectories on August 18, 2023 for Colville.

24-hour back-trajectories were initiated at 500 (green), 1500 (blue), and 3000 (red) meter starting heights. The trajectories, wind barbs, and $PM_{2.5}$ monitors shown are for 8 pm PST, when concentrations were highest that day. Blue labels along trajectories are heights above ground level in meters. The background layer is Aqua/MODIS imagery (~2 pm LT). HMS-detected hot-spots are shown as red triangles.

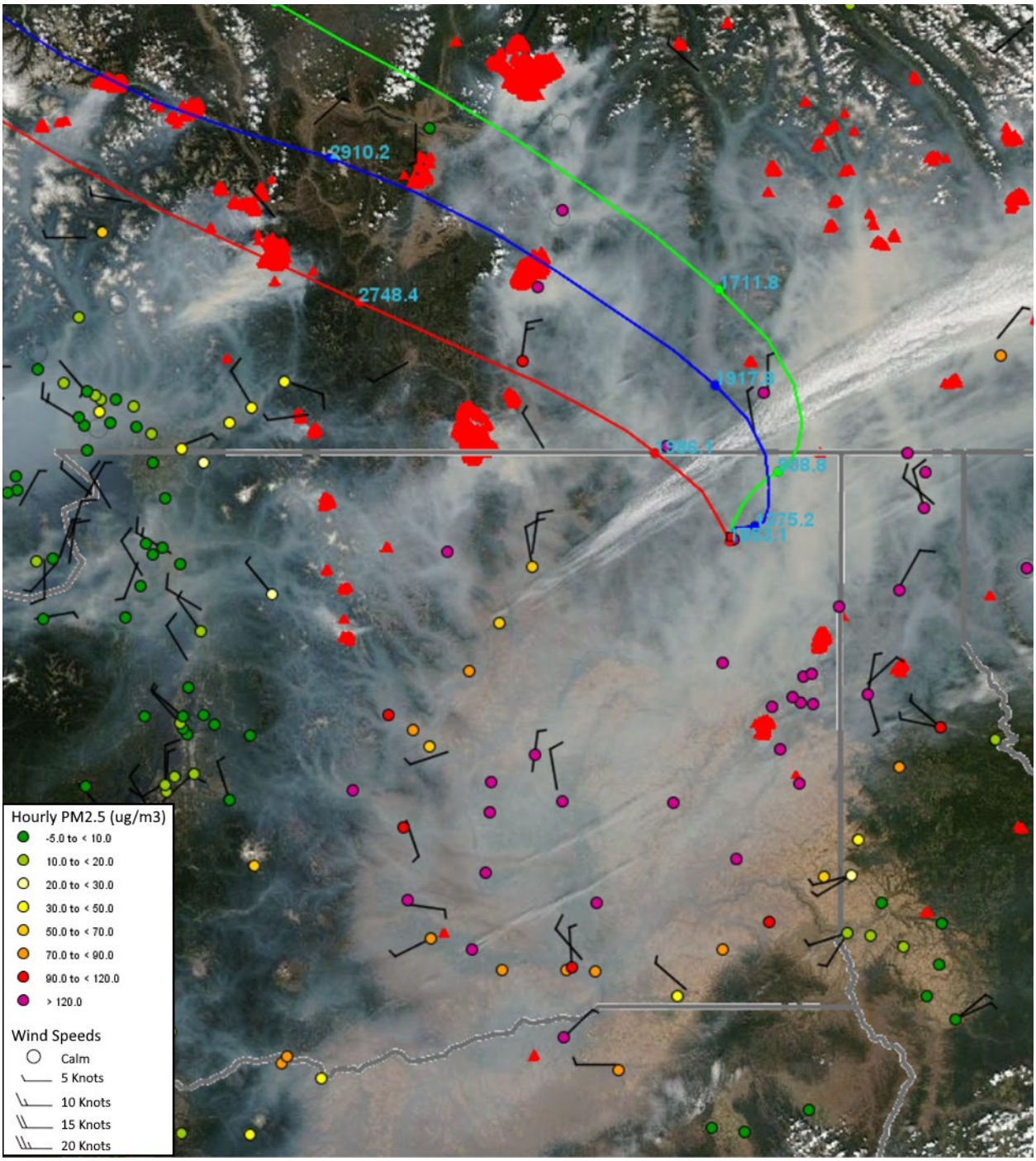

Figure A-8. HYSPLIT back trajectories on August 19, 2023 for Colville.

24-hour back-trajectories were initiated at 500 (green), 1000 (blue), and 1500 (red) meter starting heights. The trajectories, wind barbs, and $PM_{2.5}$ monitors shown are for 4 am PST, when concentrations were highest that day. Blue labels along trajectories are heights above ground level in meters. The background layer is Aqua/MODIS imagery (~2 pm LT). HMS-detected hot-spots are shown as red triangles.

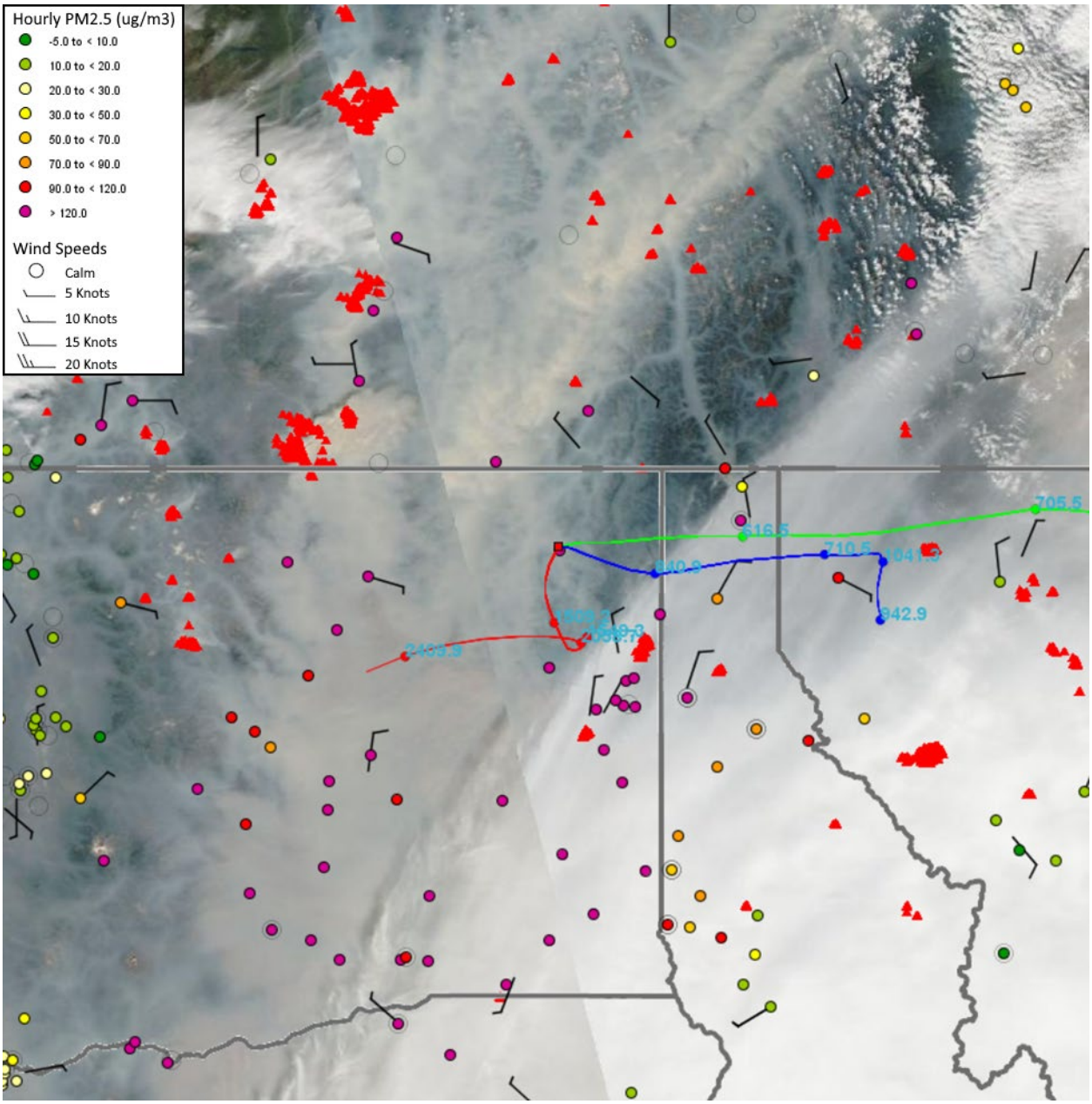

Figure A-9. HYSPLIT back trajectories on August 20, 2023 for Colville.

24-hour back-trajectories were initiated at 500 (green), 1200 (blue), and 1900 (red) meter starting heights. The trajectories, wind barbs, and $PM_{2.5}$ monitors shown are for 4 am PST, when concentrations were highest that day. Blue labels along trajectories are heights above ground level in meters. The background layer is Aqua/MODIS imagery (~2 pm LT). HMS-detected hot-spots are shown as red triangles.

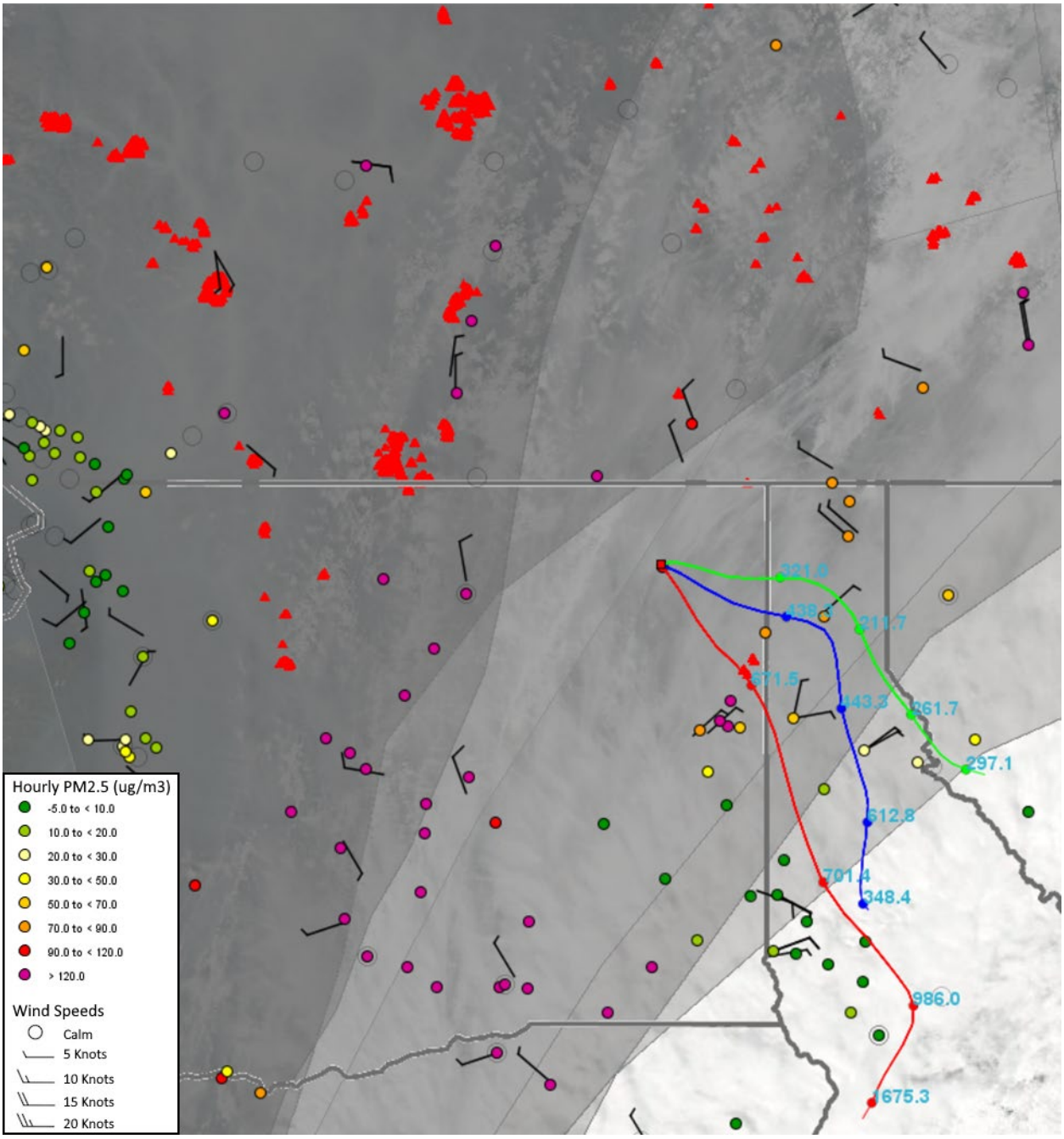

Figure A-10. HYSPLIT back trajectories on August 21, 2023 for Colville.

24-hour back-trajectories were initiated at 200 (green), 500 (blue), and 1000 (red) meter starting heights. The trajectories, wind barbs, and $PM_{2.5}$ monitors shown are for 9 am PST, when concentrations were highest that day. Blue labels along trajectories are heights above ground level in meters. The background layer is Aqua/MODIS imagery (~2 pm LT) with the HMS smoke polygon overlay. HMS-detected hot-spots are shown as red triangles.

Alternative source hypotheses

Alternative source hypotheses are an important element of the clear causal relationship demonstration. These hypotheses consider alternative sources that could cause large $PM_{2.5}$ concentrations on the days requested for exclusion, such as, prescribed burning, agricultural burning, residential wood combustion, outdoor open burning, and vehicle emissions.

Temperatures were warm during the wildfire event, thus residential wood combustion for home heating would not have contributed to large $PM_{2.5}$ concentrations. In general, the measured values during the exceedance period are well above the normal historical concentrations (see Historical Fluctuations below), thus routine anthropogenic sources (e.g. residential wood combustion, vehicles, industry, etc.) were not the cause of high $PM_{2.5}$ concentrations. DNR did not approve any prescribed burns in the region due to a fire-safety burn ban. Ecology did not approve any agricultural burns during the wildfire events.

There were no reported episodic events such as high wind dust storms, prescribed burning, or agricultural burning. Thus, Ecology concludes that the alternative hypotheses discussed above were unlikely to have impacted the monitors during the wildfire event. The smoke that caused large $PM_{2.5}$ concentrations came from regional fires within Washington, British Columbia and Idaho.

Comparison to Historical Fluctuations

To support the clear causal relationship requirement of the EER, the event-influenced concentrations at Colville were compared to historical concentrations. Evidence supports the conclusion that $PM_{2.5}$ concentrations at the monitor on the flagged days were elevated due to wildfire smoke.

The most recent 5 years of monitored concentrations at Colville, shown below, indicate that $PM_{2.5}$ remains below 15 $\mu g/m^3$ during the spring and summer months, with larger concentrations related to wildfire events. Concentrations go up slightly in the fall and winter, usually due to residential wood combustion and cold-weather inversions in the valley.

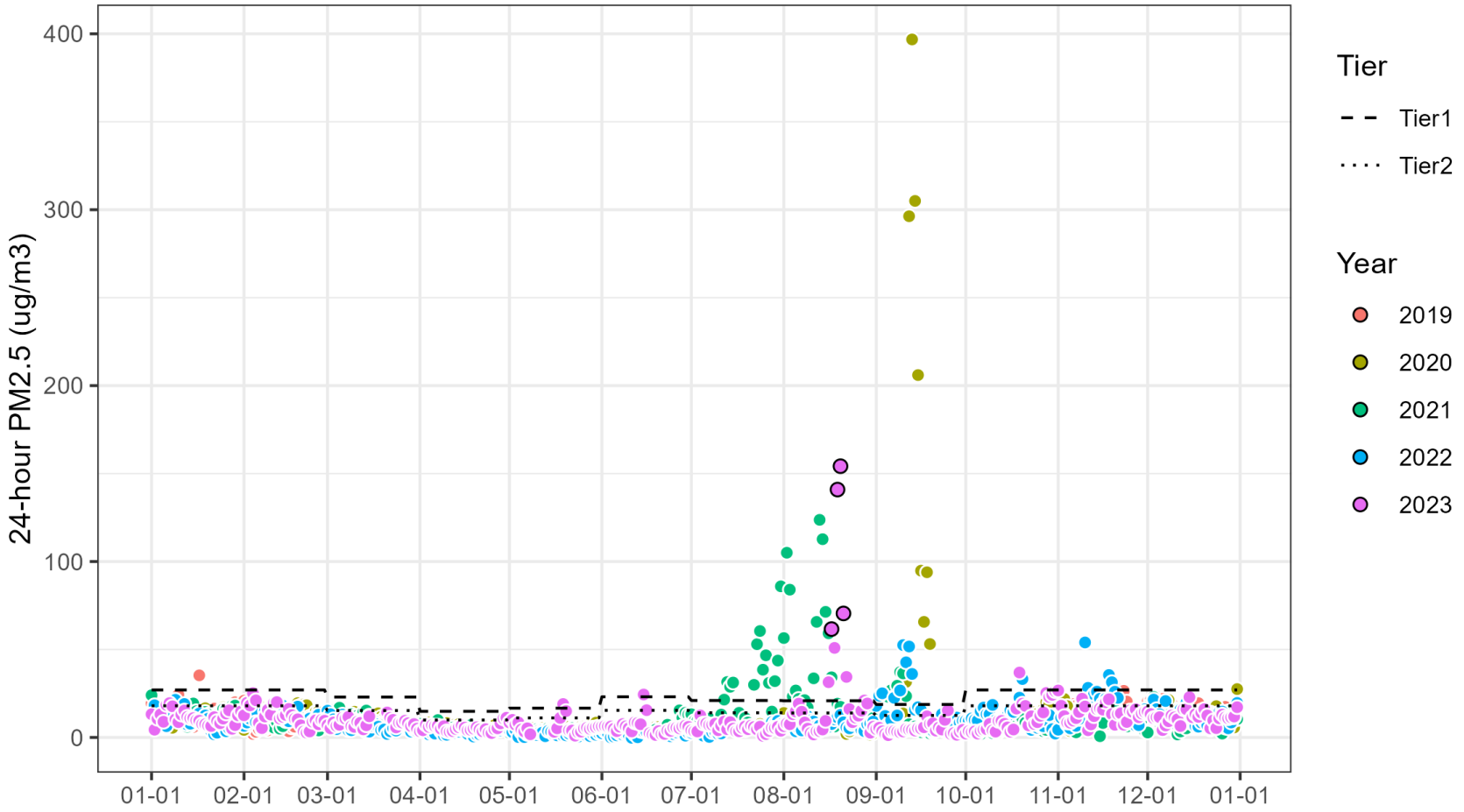

Figure A-11. Colville 24-hour $PM_{2.5}$ for the most recent 5 years.

Tiering thresholds are shown as dashed lines. Days requested for exclusion in 2023 are shown as pink circles with black outlines.

Not Reasonably Controllable or Preventable

This EER element requires a demonstration that the event was neither reasonably controllable nor preventable, and this requirement has been met for wildfire events (40 CFR 50.14(b)(4)). Ecology presents sufficient evidence in this demonstration showing the source of the event was indeed wildfires. Ecology contends that the events of August 2023 at the Colville E 1st St monitor were not reasonably controllable or preventable.

Natural Event or Human Activity Unlikely to Recur

The EER requires that agencies must document that the identified source of an exceptional event is either a natural event (NE) or a human activity unlikely to recur at the same location (HAURL) such as to affect the monitors in question again. EPA's 2016 Exceptional Events rule indicates that if an agency has adequately demonstrated that the source is a natural event or, if not natural, is a human activity unlikely recur at the same location and that there is a clear causal relationship between the identified source(s) and the affected monitor, then the HAURL/Natural Event criterion is also satisfied.

During August 2023, weather conditions in the Pacific Northwest quickly spread any fire that started or was already burning. The data included in the Conceptual Model and Clear Causal Relationship Sections demonstrate the clear causal relationship between the source of the smoke and monitor data for each day that Ecology requests concurrence. Thus, the NE/HAUR criterion is satisfied.

Mitigation

The EER requires states to take appropriate and reasonable actions to protect public health from exceedances or violations of the NAAQS (40CFR 51.930). Ecology presents evidence of prompt public notification of the event, public education so that individuals could make behavioral changes to reduce exposure to unhealthy air, and implementation of appropriate measures to protect public health from the impacts of exceptional events.

State, county, and local jurisdictions provide primary fire protection on public and private lands. The Washington State Department of Natural Resources (DNR) is the primary wildfire fighting force[25] and author of the Washington State Wildland Fire Protection 10-Year Strategic Plan.[26] Primary fire program duties on federal lands are the responsibility of the Bureau of Land Management, Bureau of Indian Affairs, National Park Service, U.S. Fish and Wildlife Service, U.S. Forest Service, and other federal partners.[27] The U.S. Fire Administration works with county and local fire departments and state forestry programs are represented by the National

[25] www.dnr.wa.gov/FightingFire
[26] www.dnr.wa.gov/publications/rp_wildfire_strategic_plan.pdf
[27] www.fs.usda.gov/managing-land/fire/partners/federal

Association of State Foresters. As partners, fire teams work together on fire management issues such as safety and planning, science, preparedness, operations, strategy development, logistics, intelligence, and emergency response. Control of large wildland fires is coordinated under the National Interagency Fire Center (NIFC). The NIFC Interagency Standards for Fire and Fire Aviation Operations (Red Book) defines the National Response Framework, National Incident Management System, and fire incident command organization.[28]

Washington State agencies (ECY, DNR, local CAAs, DOH, L&I) coordinate with the US Forest Service, EPA, and the National Weather Service to alert the public about dangerous smoke levels through social media, news releases, air quality alerts, and wildfire smoke forecasting.

Public Notification

Air quality notifications

Ecology Air Quality Program provides notification of wildfire smoke events to the public through Air Quality Alert messages distributed by the National Weather Service. Ecology coordinated with NWS to issue Air Quality Alert messages for Stevens County (and other areas) along with health information from August 17 to August 23. Air Quality Alerts were also in effect for other nearby parts of Washington on August 15 and 16. Iowa State University provides archives of all NWS text products, including the Air Quality Alerts served by the NWS Spokane office in August 2023. [29]

Washington's air monitoring network webpage[30] contains current air quality conditions and a link to 5-day smoke forecasts. The webpage features a map of air quality data for monitoring sites in the state. Each color-coded monitor shows the most recent NowCast AQI.

The Washington Smoke Blog provides current air quality conditions and fire information by displaying the fire.airnow.gov map with a 5-day smoke forecast overlay. Additional information is posted to the blog by state and federal agencies. Local smoke outlooks are also available on the blog, as provided by USFS Air Resource Advisors.[31] Ecology and DNR posted statewide smoke updates to the blog on August 1, 3, 7, 13, 15, 17, 18, 19, 21, 24, and 31.[32]

Ecology also posted daily on the Agency Twitter and Facebook with smoke updates, forecasts, trends, air quality conditions, etc. during the wildfire smoke season.

Flagging and initial notification

Ecology properly documented the exceedances of the annual $PM_{2.5}$NAAQS at the Colville monitor for August 2023. Ecology flagged the data with informational flags (i-flag) in EPA's AQS

[28] www.nifc.gov/standards
[29] mesonet.agron.iastate.edu/wx/afos/p.php?pil=AQAOTX&e=202308171454
[30] ecology.wa.gov/AirQualityWA
[31] outlooks.airfire.org/outlook
[32] wasmoke.blogspot.com/2023/08/

in May 2023 to notify EPA that wildfire events caused exceedances. Ecology discussed flagging of these $PM_{2.5}$exceedances in AQS during the regular meetings between Ecology and EPA Region 10 in May 2024. Since then, Ecology and EPA Region 10 staff engaged in regular communication, discussed regulatory significance, and that Ecology would submit this exceptional event demonstration. Ecology notified EPA of its intent to submit this demonstration during multiple regular meetings since May 2024. Through these actions, Ecology met the initial notification requirement.

Public involvement and public comments

Ecology held a public comment period on the proposed area designation recommendation and exceptional events demonstrations from November 8, 2024, through December 13, 2024. During this 36-day public comment period, the public had an opportunity to review and comment on the draft designation recommendation letter, exceptional events demonstration for 2023 $PM_{2.5}$ exceedances due to wildfires at the Colville E 1st St monitor, and report of 2021 days flagged for wildfire smoke impacts. Ecology held a virtual public hearing on these documents on December 10, 2024.

Ecology notified the public about the comment period and hearing in the following ways:

- Web Site – Ecology posted notice to the Ecology webpage and Ecology's Public Involvement Calendar.
- Email Distribution List – Ecology sent out notice via the Air Quality Rules and SIP updates listserv

Ecology provided the following ways for the public to submit comments on the proposal:

- Online
- At the virtual public hearing on December 10, 2024
- Postal Mail: Caitlin Cannon, Air Quality Program, Washington State Department of Ecology, P.O. Box 47600, Olympia, WA 98504-7600

Ecology received 4 comments. Our response is below. The transcription of verbal testimony recorded at the public hearing has been edited to remove filler words such as "um" for ease of reading. The original transcription can be obtained through public records request.

Comment 1

Eli Loftis with the Okanogan Conservation District submitted the following comment:

Yes, thank you, my name is Eli Loftis, E-L-I L-O-F-T-I-S. I am the wildfire and community resiliency lead planner for the Okanogan Conservation District leading and managing the conservation district wildfire, forestry, and air quality programs. I am here to speak to express the Conservation District's support for the recommendation that Ecology is providing to the

EPA. Air quality is a significant issue for Okanogan County. We are the largest county in the state with one of the least densely populated with only about 8 people per square mile. We struggle with air quality severely due to multiple point sources of $PM_{2.5}$ and PM_{10} but also due to significant wildfire events. We agree with Ecology that the 2024 data will most likely show that we are hopefully within attainment of these new federal standards. We have been a major part of the air quality and fire resiliency efforts here in our community for many years, leading community chipping events in collaboration with our other Okanogan River Airshed Partnership members which includes the Confederated Tribes of the Colville Reservation, Okanogan County Solid Waste and many others including Clean Air Methow which is a part of the Methow Valley Citizens Council. As stated, we fully support these recommendations and strongly hope that EPA accepts them as a nonattainment declaration will have a disproportionate negative impact on some of our most vulnerable citizens and other members of our community and cause a significant regulatory burden which is unnecessary for a community of this size and area. Thank you.

Ecology's Response: Thank you for your support of our draft recommendation. Ecology recognizes the dedicated work of many organizations in Okanogan County through the Okanogan River Airshed Partnership to reduce $PM_{2.5}$ exposure and protect public health.

Comment 2

Isabelle Spohn submitted the following comment:

Thank you Isabelle I-S-A-B-E-L-L-E Spohn S-P-O-H-N. I live in the Methow Valley and have a great interest in air quality. I fully support making a more stringent standard. We need to protect our health. Regarding the recommendation I will submit further testimony after I have seen the documents that you presented but at this point I would like to advocate for deciding after the data is in exactly whether or not we are in compliance. Thank you.

Ecology's Response: Thank you for your comment. Ecology's recommendation is based on certified air quality data from 2021-2023, along with a preliminary analysis of 2024 data. The 2024 data will be complete and certified by the time EPA announces their designation decision scheduled for early 2026. EPA expects to make their final decision based on three years of certified air quality data from 2022-2024.

Comment 3

Anna Jones with the Methow Valley Citizens Council submitted the following comment:

To Whom This May Concern at the EPA,

I am writing as the Program Manager for Clean Air Methow regarding the EPA's

potential designation of Omak, WA, as a nonattainment area under the revised PM2.5 National Ambient Air Quality Standards (NAAQS). This designation carries significant implications for public health, economic development, and environmental management across the region.

While the Omak monitor provides valuable data, it is essential to consider the broader context of air quality across geographic boundaries. The Methow Valley's air quality is shaped by distinct factors, including seasonal wildfire smoke and weather patterns that differ significantly from those in Omak. Misrepresenting these conditions could result in unnecessary regulatory burdens on communities already actively working to improve air quality.

I urge the County Commissioners to advocate for the EPA to rely on the most recent, high-quality data and to consider localized conditions and exceptional events, such as wildfire impacts, in its decision-making process. As noted in Ecology's draft recommendations, exceptional events have been flagged in the region, and their exclusion is vital to ensuring a fair assessment of air quality data.

Clean Air Methow remains committed to proactive measures that protect air quality, and we encourage the EPA to focus regulatory efforts on areas with the most acute challenges. Ensuring accurate, science-based designations will not only protect public health but also maintain community trust and foster collaborative air quality solutions.

I welcome the opportunity to discuss this issue further or provide additional context if needed. Please feel free to contact me at 509-997-0888x6 or annam@mvcitizens.org.

Sincerely,

Anna Jones
PO Box 774
Program Manager, Clean Air Methow
Twisp, WA 98856
www.mvcitizens.org
509 997-0888

Ecology's Response: Thank you for your comment. Ecology recognizes that Okanogan County is very large and has diverse terrain that creates multiple airsheds. Ecology supports a network of multiple $PM_{2.5}$ monitoring sites in Okanogan County in order to accurately characterize air quality in these distinct airsheds. At this time we are recommending attainment for all of Washington, but if EPA were to disagree we would recommend a boundary smaller than the county. In the past the EPA has agreed with Washington State recommendations for nonattainment area boundaries smaller than a county.

Comment 4

Isabelle Spohn submitted the following comment:

Thank you for your work on behalf of the public.

First, I am in total agreement with the EPA's strengthening of the primary annual PM 2.5 standard from 12 µg/m3 to 9 µg/m3. Doing what we can to protect the health of not only humans, but also wildlife, in these challenging times of changing climate is of great importance.

I'm a full-time resident and registered voter in Okanogan County, having lived here since 1978. Although I'm concerned with Air Quality in the entire county, my primary concern is for the Methow Valley because I live here. My concern also stems from our very sensitive air shed, which is subject to the frequent inversions typical of a high mountain valley, particularly during the winter. And in the upper Methow, these inversions can be as low as the roof of a home, with woodsmoke smoke sometimes entering homes in the neighborhood through closed windows. Although PM2.5 from wildfire is largely not controllable by humans, we can control to some degree the human impacts during other times of the year that contribute to the annual average.

I do agree with noting and considering exceptional events such as wildfires in your calculations regarding attainment/nonattainment issues.

The Omak Monitor: Boundaries of Attainment areas

I have read in the enclosed documents that "Consideration of geography or topography can provide additional information relevant to defining non attainment area boundaries. The EPA recommends that analyses examine the physical features of the land that might define the air shed and, therefore, affect the formation and distribution of PM2.5 concentrations over an area. Mountains or other physical features may influence the fate and transport of emissions and PM2.5 concentrations. Additional analyses may consider topographical features that cause local stagnation episodes via inversions."

However, I have also read that "The EPA recommends that the boundaries of attainment/unclassifiable areas generally not be smaller than a county."

First, we need to consider that Okanogan County is larger than 3 of the smallest states in the USA. This fact alone should indicate that special consideration of the boundaries of attainment areas in this county is appropriate. In addition, our county includes numerous air sheds, water sheds, and various ecosystems from shrub-steppe to high mountains and valleys - all of which create various and differing impacts upon meteorology and air quality.

In the case of the Omak monitor and any questions arising from its data, I contend that the Methow Valley and the Okanogan Valley are two discreet, adjacent air sheds and water sheds with very different topography and populations. They are separated by the Okanogan Range. The Methow has high mountains and is narrow and winding, creating a challenging situation for modeling and collection of data especially during winter when inversions are more severe and

wood stoves are in use. Omak and the Okanogan Valley, on the other hand, is more subject to the impacts of a larger human environment. Both, of course, are affected unpredictably and often separately by PM 2.5 from wildfire.

In deciding issues of attainment/non-attainment, these two valleys should be considered separately for the above reasons.

In respect to any necessary use of baseline data, I suggest that WDOE/EPA review the air quality studies (including monitoring and computer modeling) conducted by the EPA in order to comply with Regional Forester Jeff Sirmon's 7/05/84 Record of Decision addressing the Early Winters Winter Sports Study in regards to air quality (focusing especially upon woodstove and fireplace usage at the proposed resort.) Accurate baselines are especially important due to the potential impacts upon the adjacent Pasayten and Sawtooth Wilderness areas (Class 1air) - particularly if PSD increments are an issue in future applications.

Public Input and Advertisement of Opportunities to Comment

Thank you especially for the very useful documents that were provided for this comment period. However, should WDOE/EPA desire any substantial amount of public input from the Omak or Okanogan County areas, I would suggest advertising hearings in a manner that would encourage this input. The general populace is not accustomed to regularly viewing the website of WDOE in case there are statewide issues to which they would want to respond. A good practice would be to advertise such a hearing in the county's newspaper of record (Currently the Omak Chronicle, sometimes the Methow Valley News - on a year-to-year basis) so that the general populace would be aware. It could include reference to the WDOE website for details. I only became aware of this opportunity to comment because I listened in (over Zoom) to a recent Okanogan County Commissioners' meeting.

Thanks once again for your attention to public health and the environment in Washington State.

Sincerely yours,

Isabelle Spohn

509-997-4425

Ecology's response: Thank you for your comment. Ecology agrees that the Methow and Okanogan River Valleys represent different airsheds. Ecology supports a network of multiple $PM_{2.5}$ monitoring sites in Okanogan County in order to accurately characterize air quality in these distinct airsheds. At this time we are recommending attainment for all of Washington, but if EPA were to disagree we would recommend a boundary smaller than the county. In the past the EPA has agreed with Washington State recommendations for nonattainment area boundaries smaller than a county.

Ecology was not able to access the referenced studies in the time available, however the Washington State Air Quality Monitoring Network aligns with EPA's guidelines for $PM_{2.5}$

monitoring found in 40 C.F.R. parts 50, 53, and 58[33]. Available monitoring technology has evolved significantly since the referenced Record of Decision. EPA maintains a complete data record of $PM_{2.5}$ monitoring data submitted by Ecology since $PM_{2.5}$ monitoring began in the late 1990s, which can provide any necessary baseline data for analysis of $PM_{2.5}$ trends.

Thank you for your feedback on our public notice process. We will take this into consideration for future public notices.

Changes to document based on public comment

No changes were made to this document after the public comment period and public hearing.

Summary

With the weight of evidence discussed in this report, Ecology has shown that the fires in Washington, Idaho, and British Columbia impacted the Colville E 1st St monitor in August of 2023. Ecology therefore requests EPA's concurrence for 4 days to be flagged: 8/17/2023 (RF), 8/19/2023 (RF and RT), 8/20/2023 (RF and RT), and 8/21/2023 (RF and RT). Ecology requests that these values not be used to calculate the relevant design values for the 2024 $PM_{2.5}$ NAAQS revision designation cycle.

Ecology has also submitted data for 8/18/2023 which does not currently have regulatory significance to qualify for exclusion in case this day becomes regulatorily significant in the future.

[33] https://www.ecfr.gov/current/title-40/chapter-I

Appendix B. 2021 Days Flagged for Wildfire Smoke Impacts

Executive Summary

The Washington State Department of Ecology (Ecology) found that air quality monitoring sites located in Yakima and Stevens Counties were impacted by smoke from wildfires in 2021. The smoke caused brief exceedances of the 2024 annual national ambient air quality standard for fine particles ($PM_{2.5}$ NAAQS).

Ecology's recommendation of attainment for Yakima and Stevens Counties is based on Ecology's assessment of exceptional events for 2021, 2022, and 2023. Ecology submitted initial notification for 2021 smoke-impacted days on July 30, 2024. Ecology believes that the 2021 exceedance days in August and September at the Yakama 4th Ave and Toppenish Ward Rd monitors and in July, August, and September at the Colville E 1st St monitor were likely influenced by wildfire smoke to a degree that might otherwise trigger regulatory significance. However, Ecology has not submitted formal exceptional events demonstrations for such events because Ecology does not anticipate that events in 2021 will have regulatory significance as indicated in the EPA's memorandum, *Initial Area Designations for the 2024 Revised Primary Annual Fine Particle National Ambient Air Quality Standard*[34], issued on February 7, 2024. In the unlikely circumstance that events in 2021 are determined to have regulatory significance for final designations decisions for the 2024 revised primary annual $PM_{2.5}$ NAAQS, Ecology will work with the EPA to provide additional information consistent with the requirements of the EPA's Exceptional Events Rule[35].

[34] https://www.epa.gov/system/files/documents/2024-02/pm-naaqs-designations-memo_2.7.2024-_-jg-signed.pdf
[35] https://www.epa.gov/air-quality-analysis/federal-register-notice-final-revisions-exceptional-events-rule

Introduction

Ecology recognizes that wildfire smoke-impacted exceedances of the 2024 annual $PM_{2.5}$ (fine particulate matter) National Ambient Air Quality Standards (NAAQS) in 2021 at the Yakima 4th Ave monitor, Toppenish Ward Rd monitor, and Colville E 1st St monitor. Ecology does not anticipate that these events will have regulatory significance; however, further information is provided on these days below.

Yakima 4th Ave

The 2021 annual mean concentration at Yakima-4th Ave (AQS ID: 530770009) for Ecology's designation recommendation was calculated by excluding the following wildfire smoke-impacted days in descending order until the resulting mean was below 9.05 ug/m3.

Date	Daily $PM_{2.5}$ ($\mu g/m^3$)	Qualifier Flags	Request Exclusion from the regulatory decision?	Resulting Annual Mean (ug/m3)
8/13/2021	134.3	IT	No	10.68
8/24/2021	99.0	IT	No	10.47
9/7/2021	88.6	IT	No	10.28
8/19/2021	86.0	IT	No	10.10
9/10/2021	81.7	IT	No	9.92
9/9/2021	80.9	IT	No	9.74
9/2/2021	78.2	IT	No	9.57
8/20/2021	69.4	IT	No	9.42
8/14/2021	69.0	IT	No	9.26
8/25/2021	67.6	IT	No	9.11
8/17/2021	64.7	IT	No	8.96

Table B-4 Smoke impacted days at Yakima - 4th Ave

Toppenish Ward Rd

The 2021 annual mean concentration at Toppenish-Ward Rd (Yakama Nation, AQS ID: 530770015) was calculated by excluding the following wildfire smoke-impacted days in descending order until the resulting mean was below 9.05 ug/m3.

Date	Daily $PM_{2.5}$ ($\mu g/m^3$)	Qualifier Flags	Request Exclusion from the regulatory decision?	Resulting Annual Mean (ug/m3)
8/13/2021	104.4	IT	No	11.29
8/20/2021	92.5	IT	No	11.09

Date	Daily $PM_{2.5}$ ($\mu g/m^3$)	Qualifier Flags	Request Exclusion from the regulatory decision?	Resulting Annual Mean (ug/m3)
8/14/2021	90.8	IT	No	10.88
9/7/2021	86.3	IT	No	10.69
8/19/2021	68.5	IT	No	10.54
9/10/2021	65.8	IT	No	10.40
9/9/2021	65.1	IT	No	10.25
8/28/2021	62.7	IT	No	10.12
8/12/2021	57.4	IT	No	9.99
8/17/2021	53.0	IT	No	9.87
8/1/2021	50.2	IT	No	9.76
8/2/2021	47.0	IT	No	9.66
9/4/2021	43.9	IT	No	9.57
8/25/2021	42.4	IT	No	9.48
8/27/2021	41.5	IT	No	9.39
8/30/2021	41.5	IT	No	9.29
8/21/2021	40.9	IT	No	9.20
8/26/2021	39.9	IT	No	9.11
9/2/2021	38.3	IT	No	9.02

Table B-5 Smoke impacted days at Toppenish - Ward Rd

Colville E 1st St

The 2021 annual mean concentration at Colville-E 1st St (AQS ID: 530650005) was calculated by excluding the following wildfire smoke-impacted days in descending order until the resulting mean was below 9.05 ug/m3.

Date	Daily $PM_{2.5}$ ($\mu g/m^3$	Qualifier Flags	Request Exclusion from the regulatory decision?	Resulting Annual Mean (ug/m3)
8/13/2021	123.7	IT	No	11.12
8/14/2021	112.7	IT	No	10.86
8/2/2021	105	IT	No	10.62
7/31/2021	85.9	IT	No	10.43
8/3/2021	84	IT	No	10.24

Date	Daily $PM_{2.5}$ ($\mu g/m^3$	Qualifier Flags	Request Exclusion from the regulatory decision?	Resulting Annual Mean (ug/m3)
8/15/2021	71.4	IT	No	10.08
8/12/2021	65.7	IT	No	9.94
7/24/2021	60.5	IT	No	9.80
8/16/2021	59.2	IT	No	9.67
8/1/2021	56.5	IT	No	9.54
7/23/2021	53	IT	No	9.42
7/26/2021	46.7	IT	No	9.32
7/30/2021	43.7	IT	No	9.23
7/25/2021	38.5	IT	No	9.14
9/9/2021	37.1	IT	No	9.07
9/10/2021	36.4	IT	No	8.99

Table B-6 Smoke impacted days at Colville - E 1st St

Wildfire Flagging information for 2021

The Pacific Northwest experienced record temperatures during the summer of 2021, accompanied by several bouts of thunderstorms and lightning. The combination of hot/dry weather and lightning led to many large wildfires in British Columbia, Washington, Idaho, Oregon, and California, which caused excessive smoke in the region. During July, August and September of 2021, the State of Washington experienced significant wildfire smoke events, which resulted in exceedances of $PM_{2.5}$, PM10, and Ozone. Table B-4. below lists the wildfire events that caused smoke that impacted monitors in the State of Washington.

Name	Location	Discovery Date	Total Acres
Lick Creek fire (Dry Gulch)	Garfield/Asotin counties, WA	7/7/2021	80,421
Green Ridge fire	Columbia/Garfield counties, WA	7/7/2021	42,722
Snake River Complex	Nez Perce county, ID	7/7/2021	109,444
Cedar Creek fire	Mazama, WA	7/8/2021	55,572
Crazy Creek Gorge fire	Sicamous, BC	7/10/2021	10,850
Thomas Creek fire	Penticton, BC	7/11/2021	26,190
Chuweah Creek fire	Nespelem, WA	7/12/2021	36,752

Name	Location	Discovery Date	Total Acres
Summit Trail fire	Ferry county, WA	7/12/2021	49,329
Red Apple fire	Wenatchee, WA	7/13/2021	12,228
Dixie fire	Plumas county, CA	7/13/2021	963,309
WhiteRock Lake fire	Kelowna, BC	7/13/2021	201,350
Cub Creek 2 fire	Winthrop, WA	7/16/2021	70,186
Nk'Mip Creek fire	Osoyoos, BC	7/20/2021	47,780
Trestle Creek complex	Kaniksu NF, ID	7/20/2021	6,631
Walker Creek fire	Wauconda, WA	8/3/2021	23,331
Whitmore fire	Omak Lake, WA	8/3/2021	58,280
Hamilton fire	E. of Nespelem, WA	8/3/2021	1,207
Schneider Springs fire	Yakima county, WA	8/4/2021	101,633
Muckamuck fire	Conconully, WA	8/4/2021	13,298
Chickadee Creek fire	Loomis, WA	8/4/2021	5,854
Spur fire	Wauconda, WA	8/5/2021	12,596
Bulldog Mountain	Boyds, WA	8/5/2021	6,209
Mack Mountain	Boyds, WA	8/5/2021	1,234
TwentyFive Mile fire	Lake Chelan, WA	8/15/2021	21,380

Table B-7 2021 Wildfire information

Satellite Images

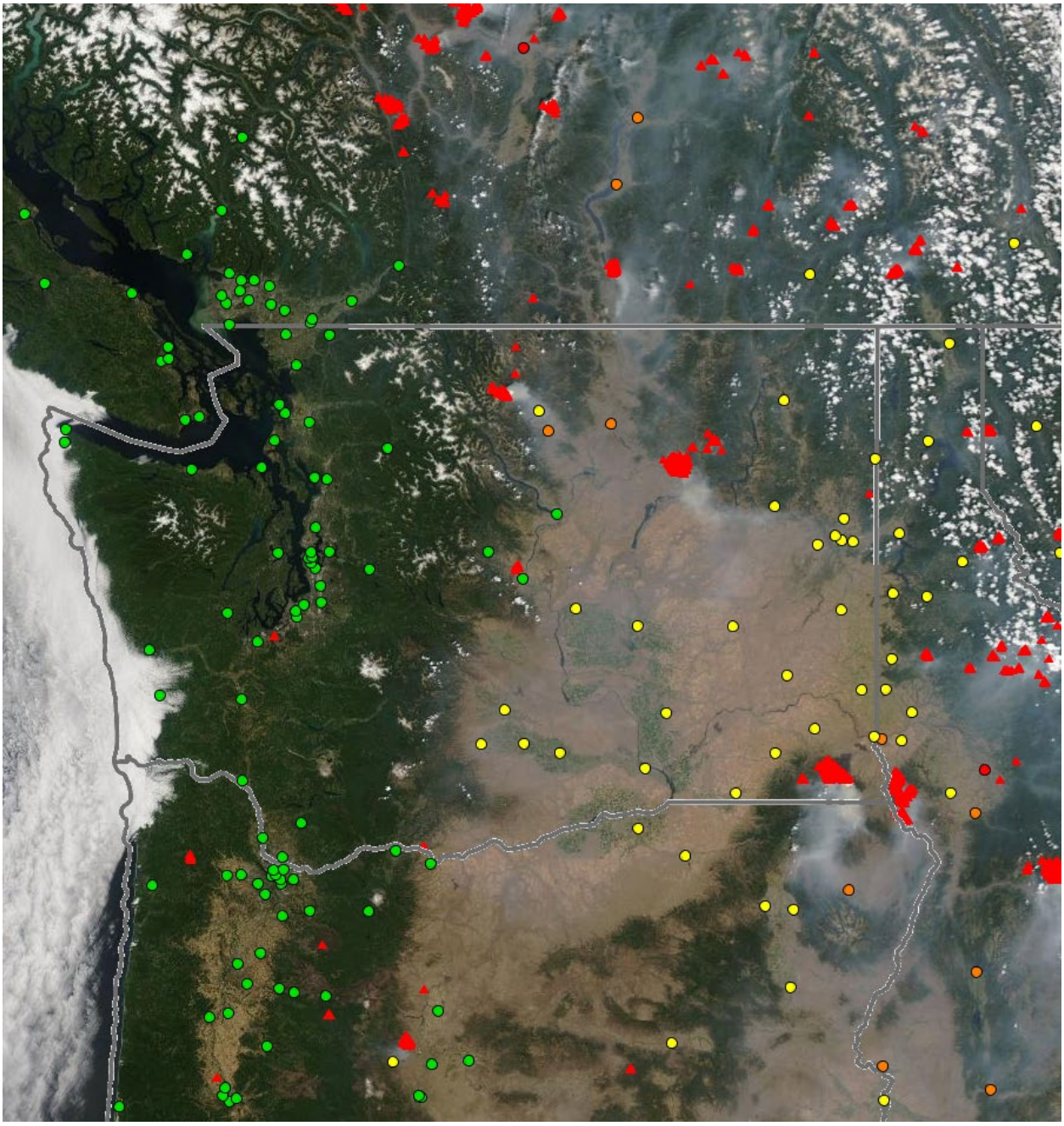

Figure B-12 July 13, 2021 – MODIS/Aqua Image overlayed with HMS hot spots (red triangles) and 24-hour $PM_{2.5}$ observed at monitors.

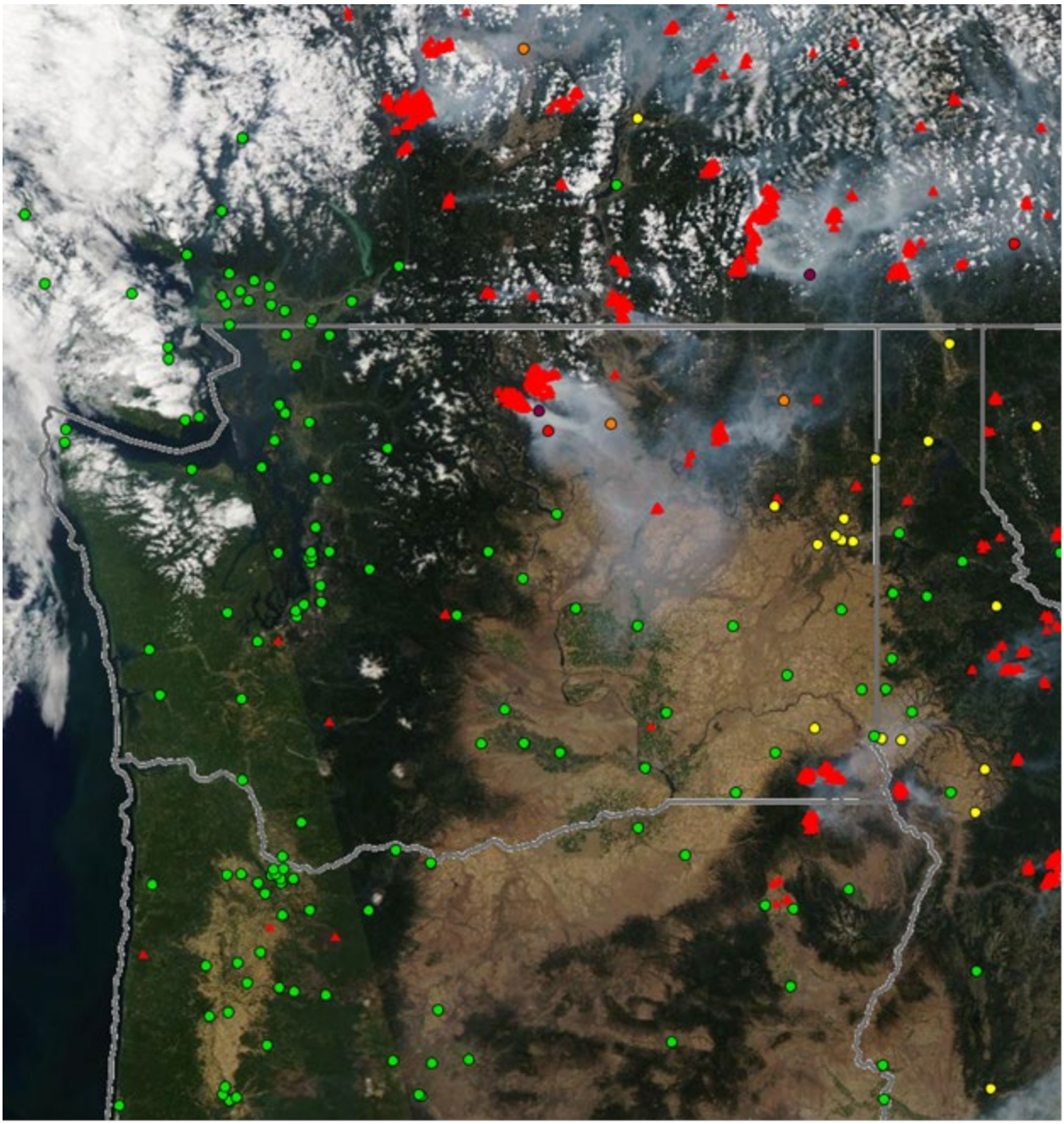

Figure B-13 July 23, 2021 – MODIS/Aqua Image overlayed with HMS hot spots (red triangles) and 24-hour $PM_{2.5}$ observed at monitors.

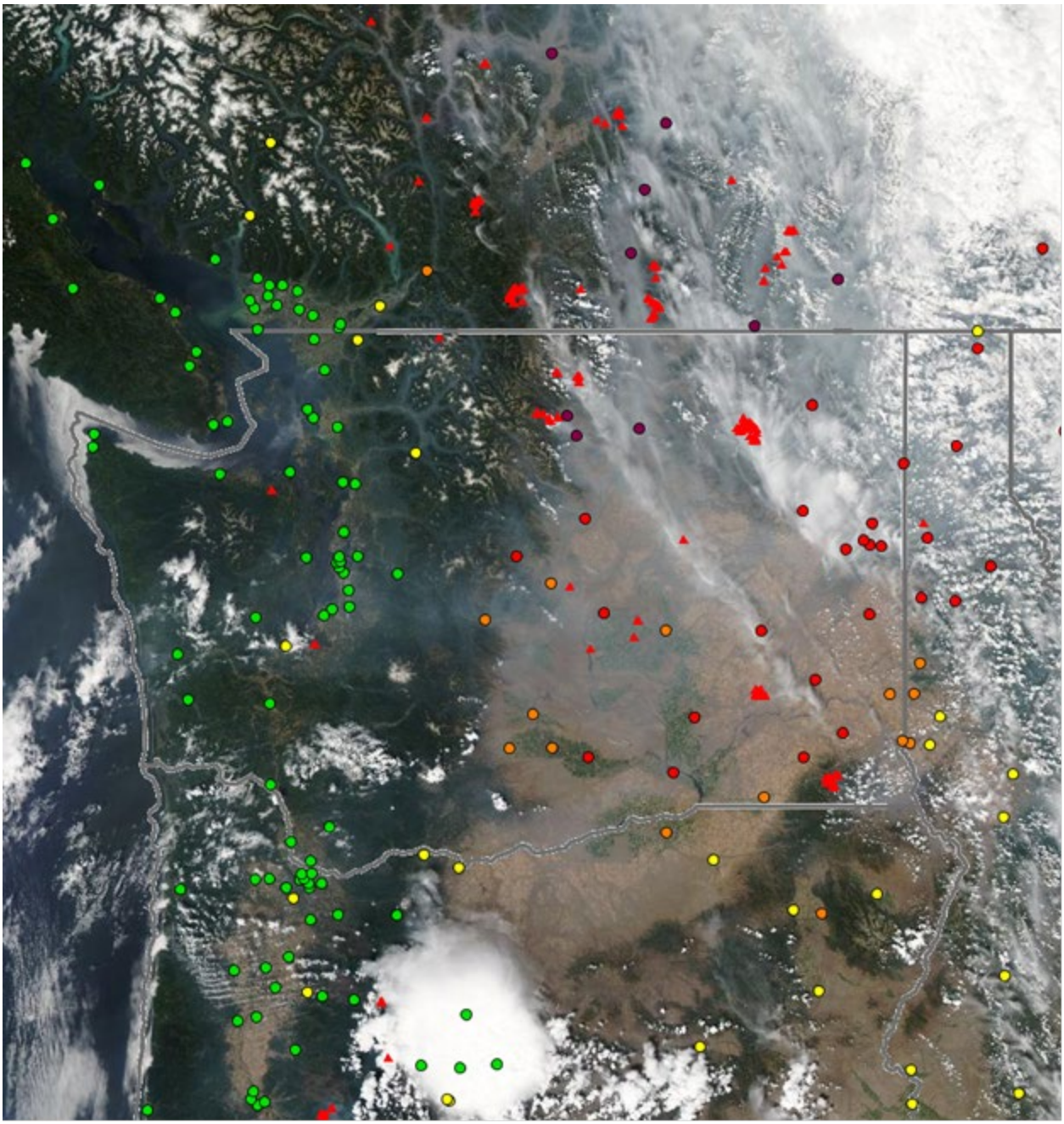

Figure B-14 August 2, 2021 – MODIS/Aqua Image overlayed with HMS hot spots (red triangles) and 24-hour $PM_{2.5}$ observed at monitors.

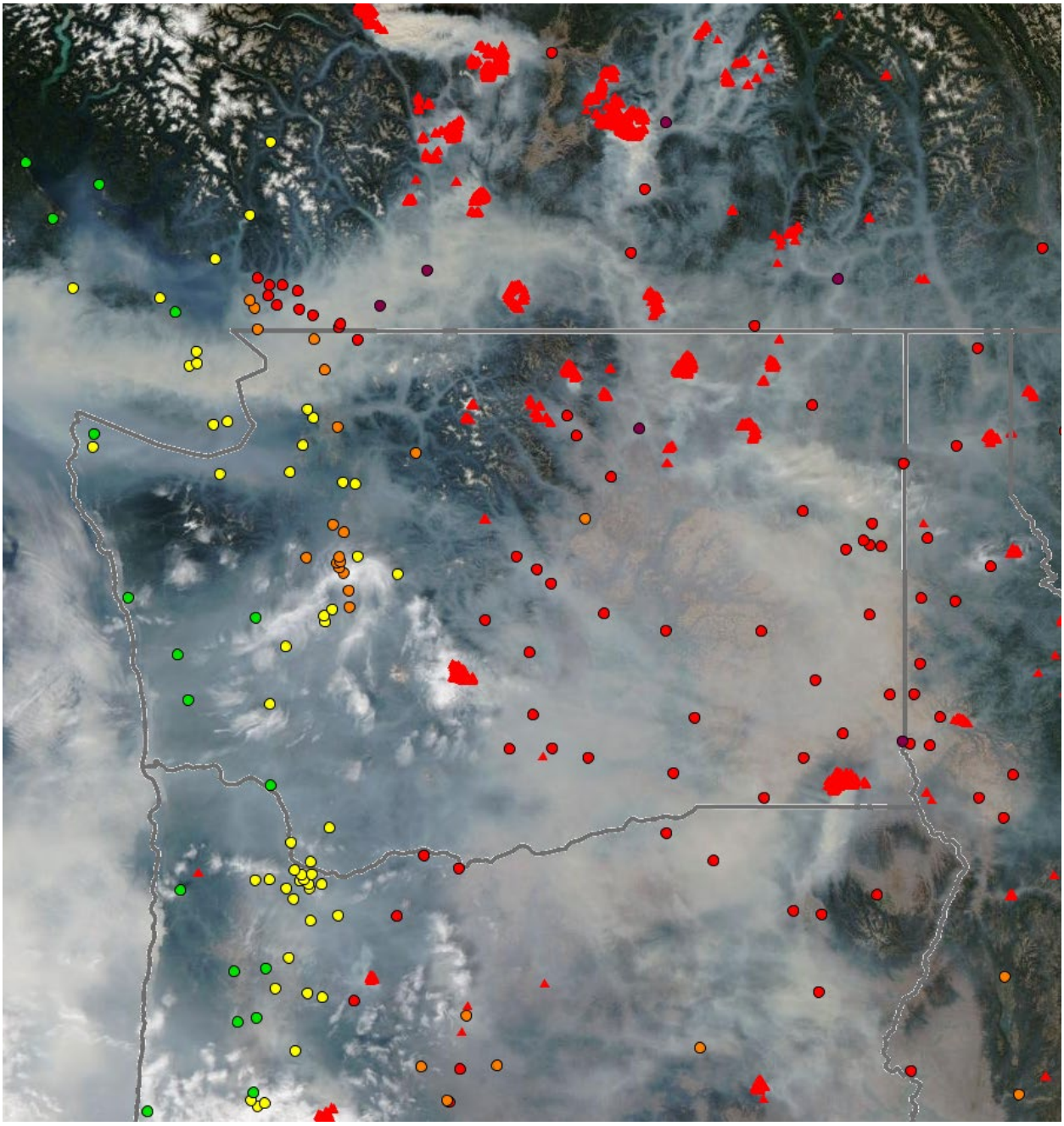

Figure B-15 August 13, 2021 – MODIS/Aqua Image overlayed with HMS hot spots (red triangles) and 24-hour $PM_{2.5}$ observed at monitors.

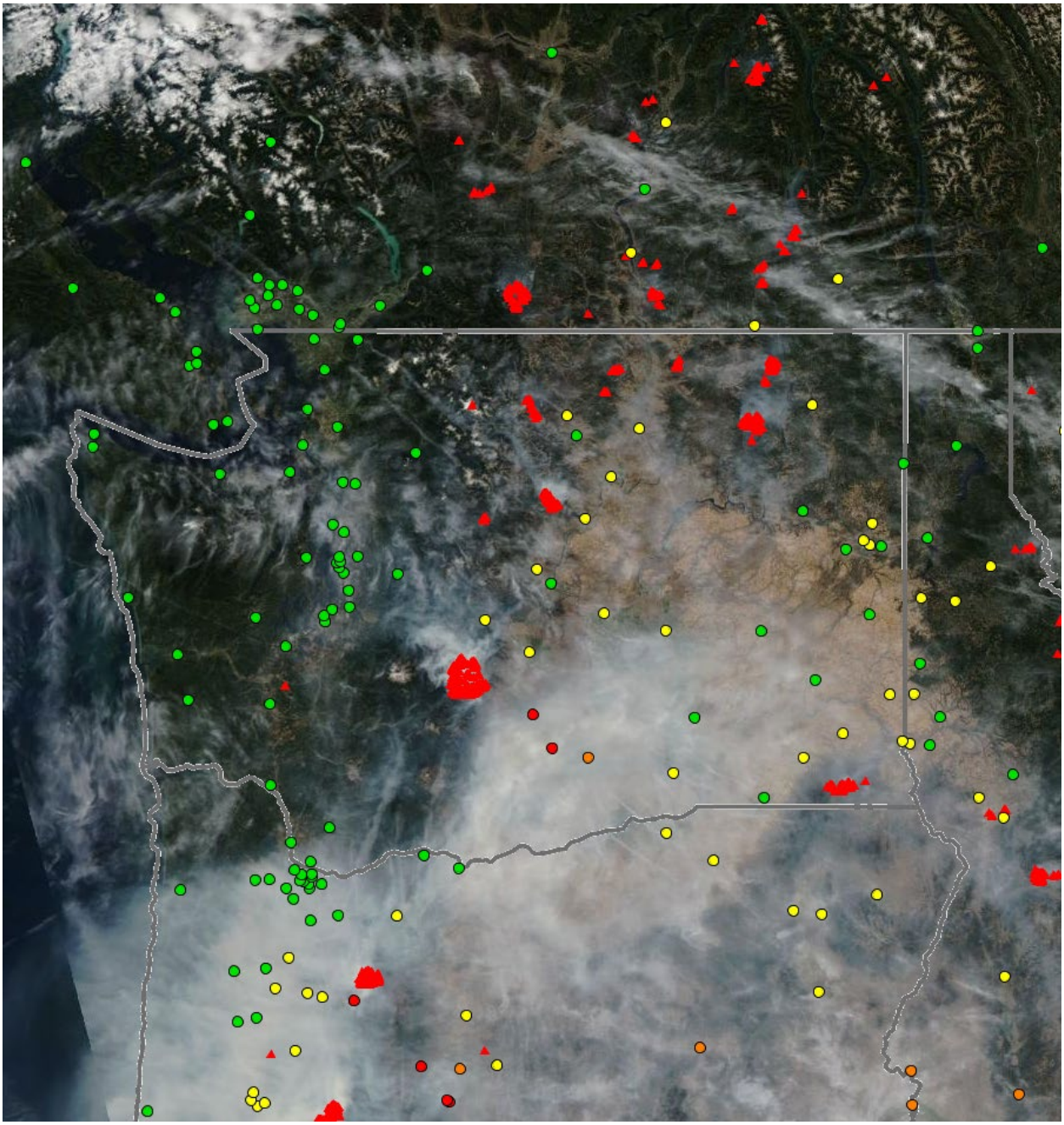

Figure B-16 September 7, 2021 – MODIS/Aqua Image overlayed with HMS hot spots (red triangles) and 24-hour $PM_{2.5}$ observed at monitors.

Summary

The information in this report demonstrates that wildfire smoke-influenced monitor concentrations in 2021. Ecology does not anticipate that these days will have regulatory significance for area designations for the 2024 annual $PM_{2.5}$ NAAQS. This information has been provided to give context to Ecology's recommendations for this designation decision.

If these events do become regulatorily significant Ecology will submit further information demonstrating that these days meet the requirements of the Exceptional Events Rule.

Appendix C. Signed Designation Recommendation Letter and Enclosure

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47600, Olympia, WA 98504-7600 • 360-407-6000

February 7, 2025

Dan Opalski, Acting Regional Administrator
U.S. Environmental Protection Agency, Region 10
1200 Sixth Ave, Suite 155
Seattle, WA 98101

RE: Area designations for the 2024 $PM_{2.5}$ National Ambient Air Quality Standard

Dear Acting Regional Administrator Opalski:

On behalf of the Governor, I am submitting the State of Washington's recommendations for air quality area designations for the revised fine particulate matter ($PM_{2.5}$) national ambient air quality standard. The U.S. Environmental Protection Agency strengthened the primary annual $PM_{2.5}$ standard to protect public health on February 7, 2024. The revision of the standard from 12 µg/m³ to 9 µg/m³ triggered a designation process outlined in EPA's *Initial Area Designations for the 2024 Revised Primary Annual Fine Particle National Ambient Air Quality Standard*[1] memorandum. The designation process laid out in section 107(d) of the Clean Air Act[2] provides states with the opportunity to make recommendations to EPA on designations within one year after the revision of the standard.

The Washington State Department of Ecology developed these recommendations from the most recent certified air quality monitoring data (2021–2023) available from $PM_{2.5}$ Federal Reference Method (FRM) and Federal Equivalent Method (FEM) monitors. Ecology also considered preliminary 2024 data because EPA expects to make final designation decisions based on the 2022–2024 monitor data. A summary "Recommended Designations for the annual $PM_{2.5}$ Standard" is enclosed.

Ecology recommends all counties in the state be designated as attainment/unclassifiable for the $PM_{2.5}$ standard with the exception of Omak, Washington, which we tentatively recommend be designated as attainment based on preliminary analysis of 2024 monitor data. Ecology recommendations do not apply to tribal lands, which follow a separate designation process with EPA. Several monitors located on tribal lands are close enough to non-tribal lands that we have included recommendations for these tribal land adjacent areas. In the case of Omak,

[1] https://www.epa.gov/system/files/documents/2024-02/pm-naaqs-designations-memo_2.7.2024-_-jg-signed.pdf
[2] https://www.govinfo.gov/content/pkg/USCODE-2013-title42/html/USCODE-2013-title42-chap85-subchapI-partA-sec7407.htm

Washington, a tribal monitor is representing both tribal and non-tribal lands in the same city. Further information on Omak is included below.

RECOMMENDED DESIGNATIONS

Attainment

Monitors in Clark, King, Kitsap, Kittitas, Pierce, Skagit, Snohomish, Spokane, Stevens, Whatcom, and Yakima counties meet the $PM_{2.5}$ standard. We are recommending these areas be designated attainment.

Ecology's recommendation of attainment for Stevens and Yakima counties is based on our assessment of exceptional events for 2021 and 2023. Ecology submitted initial notification to EPA for 2023 exceptional events days on July 30, 2024, for the wildfire influenced days from August 17–21 of 2023 at the Colville-E 1st St monitor. Ecology believes that the 2021 exceedance days in August and September at the Yakima 4th Ave and the Toppenish Ward Rd monitors[3] and in July, August, and September at the Colville E 1st St monitor were likely influenced by wildfire smoke to a degree that might otherwise trigger regulatory significance. However, Ecology has not submitted formal exceptional events demonstrations for such events because Ecology does not anticipate that events in 2021 will have regulatory significance as indicated in the EPA's memorandum, *Initial Area Designations for the 2024 Revised Primary Annual Fine Particle National Ambient Air Quality Standard*[4], issued on February 7, 2024. In the unlikely circumstance that events in 2021 are determined to have regulatory significance for final designations decisions for the 2024 revised primary annual $PM_{2.5}$ NAAQS, Ecology will work with EPA to provide additional information consistent with the requirements of the *EPA's Exceptional Events Rule*[5].

Further information on 2021 events can be found in the attached document "2021 Days Flagged for Wildfire Smoke Impacts."

The other counties in Washington State (Asotin, Benton, Chelan, Clallam, Columbia, Cowlitz, Douglas, Ferry, Franklin, Garfield, Grant, Grays Harbor, Island, Jefferson, Klickitat, Lewis, Lincoln, Mason, Pacific, Pend Oreille, San Juan, Skamania, Stevens, Thurston, Wahkiakum, Walla Walla, and Whitman) do not have regulatory $PM_{2.5}$ monitors. $PM_{2.5}$ is monitored in these areas by non-regulatory monitors due to consistently low values. Ecology recommends a designation of attainment/unclassifiable for these areas.

Tentative Attainment

The Omak monitor, located in Okanogan County and operated by the Confederated Tribes of the Colville Reservation Office of Environmental Trust with support from EPA and Ecology,

[3] **The Toppenish Ward Rd monitor is operated by the Yakama Nation, Ecology includes this information because it is representative of nearby non-tribal areas**
[4] https://www.epa.gov/system/files/documents/2024-02/pm-naaqs-designations-memo_2.7.2024-_-jg-signed.pdf
[5] https://www.epa.gov/air-quality-analysis/federal-register-notice-final-revisions-exceptional-events-rule

represents a community spanning tribal and non-tribal lands. Because this monitor is a tribal monitor, EPA Region 10 is preparing Exceptional Events Demonstrations to exclude wildfire impacted data for this monitor from the designation decision.

Ecology recognizes that if EPA were to exclude wildfire influenced data from the 2021–2023 data set the Design Value for this monitor will still be very slightly above the new $PM_{2.5}$ standard. However, preliminary data analysis indicates that this monitor is likely to be in attainment of the new standard for the 2022–2024 data set that EPA intends to use for the final regulatory decision, in accordance with EPA's initial area designations memo listed above.

There are no major permitted sources of $PM_{2.5}$ in the Omak area. Significant non-regulatory work has been done in the region by the Okanogan River Airshed Partnership and others to reduce $PM_{2.5}$ emissions. This work has included woodstove changeout programs, green waste collection, and wood chipping. These programs address the most significant human-caused sources of $PM_{2.5}$ emissions in the county per the 2020 Emissions inventory[6] for Okanogan County.

Due to the low preliminary monitor values available for 2024, as well as the strong history of non-regulatory work addressing local $PM_{2.5}$ sources, Ecology believes this area is likely to meet the new $PM_{2.5}$ standard when EPA considers the 2022–2024 data set for its final designation decision. Ecology encourages EPA to make its final decision based on the most recent monitor data.

If the Omak monitor does not meet the new standard once all 2024 data is available in early 2025 Ecology intends to submit a boundary designation recommendation.

Thank you for your consideration of our recommendations. Please contact Kathy Taylor or her staff at 360-584-5104 or Kathy.Taylor@ecy.wa.gov if you have questions.

Sincerely,

Casey D. Sixkiller
Director

Enclosure

cc: Kathy Taylor, Ecology

[6] https://www.epa.gov/air-emissions-inventories/2020-national-emissions-inventory-nei-data

Recommended Designations for the 2024 annual PM2.5 Standard

The United States Environmental Protection Agency (EPA) revised the annual federal health-based standard for fine particulate matter ($PM_{2.5}$) in the ambient air to 9 micrograms per cubic meter ($\mu g/m^3$) in February 2024 to improve protection of public health. $PM_{2.5}$ refers to particulates with an aerometric diameter of 2.5 microns or less. Compliance with the $PM_{2.5}$ standard is evaluated over a three-year period by taking the mean or average of each year's mean monitored values. A design value of 9.05 $\mu g/m^3$ or higher is a violation of the annual $PM_{2.5}$ standard.

Site Site Number	County	2021 Mean ($\mu g/m^3$)	2022 Mean ($\mu g/m^3$)	2023 Mean ($\mu g/m^3$)	2021–2023 Design Value ($\mu g/m^3$)	Designation Recommendation
Vancouver – NE 84th Ave	Clark	5.65	7.70	6.39	6.6	Attainment
Seattle- 10th & Weller	King	6.53	10.53	7.85	8.3	Attainment
Seattle – Duwamish	King	6.64	8.78	7.74	7.7	Attainment
Seattle – Beacon Hill	King	4.35	7.01	6.02	5.8	Attainment
Bremerton – Spruce Ave	Kitsap	5.20	6.36	4.90	5.5	Attainment
Ellensburg – Ruby St	Kittitas	6.27	7.06	6.48	6.6	Attainment
Omak – 8th Ave (Confederated Tribes of the Colville Nation)	Okanogan	14.88	10.28	11.79	12.3	*** See narrative below
Tacoma – S 36th St	Pierce	6.64	8.34	6.43	7.1	Attainment
Tacoma – L St	Pierce	6.10	8.70	7.17	7.3	Attainment
Anacortes – 202 O Ave	Skagit	4.77*	5.63	5.27	5.2*	Attainment
Darrington – Fir St	Snohomish	5.56	12.16	4.22	7.3	Attainment
Marysville – 7th Ave	Snohomish	7.01	9.11	8.45	8.2	Attainment
Spokane Valley – E Broadway Ave	Spokane	8.99	7.73	7.71	8.1	Attainment
Colville – E 1st St	Stevens	8.99**	8.92	9.03**	9.0**	Attainment
Bellingham – Pacific St	Whatcom	4.02	6.09*	4.96	5.0*	Attainment
Yakima – 4th Ave	Yakima	8.96**	9.13	8.79	9.0**	Attainment
Toppenish – Ward Rd (Yakama Nation)	Yakima	9.02**	9.37**	8.51**	9.0**	Attainment

* Sites with one asterisk do not meet the minimum data completeness requirement of 50 percent data capture per calendar quarter for determination of a valid design value with the substitution tests described in 40 C.F.R. Part 50 Appendix N 4.1 (c).

**Exceptional events due to wildfires were excluded from calculations. In 2021, days flagged in AQS with wildfire-related informational flags ("IT" or "IF") were excluded in descending order until the resulting 2021 annual mean was below 9.05 ug/m3, as shown on each site's corresponding table. In 2022 and 2023, days for which Ecology or EPA Region 10 submitted exceptional events demonstrations were excluded from calculations.

***Exceptional events due to wildfires can only be excluded from design value calculations when they have regulatory significance or impact a regulatory decision. Because the 2023 design value for the Omak monitor would still be very slightly above the 2024 $PM_{2.5}$ standard even with exceptional events excluded, these events can't be excluded from the 2023 design value. Ecology anticipates that these events will have regulatory significance for the 2024 design value EPA will use to make its final designation decision

The following monitors are excluded from this list because they were either established or discontinued during the 2021–2023 period and therefore have no creditable samples in at least one calendar quarter from 2021–2023. All sites listed below are located in counties where at least one other monitor recorded a valid 2021–2023 design value that Ecology used to determine the designation recommendation for that county. All network modifications listed below were made with approval of the EPA Regional Administrator following the requirements described in 40 C.F.R. Part 58.14, "System modification."

Site Site Number	County	Monitor History
Tukwila Allentown 530330069	King	Site established in April 2021.
Kent-James & Central 530332004	King	Site discontinued in June 2023.
Tacoma-Alexander Ave 530530031	Pierce	Site established in January 2022.
Spokane-Augusta Ave 530630021	Spokane	Site discontinued in March 2021.
Sunnyside-S 16th St 530770005	Yakima	Site established in April 2023.

Appendix D. Public Notice Material

Cannon, Caitlin (ECY)

From: Washington Department of Ecology <waecy@public.govdelivery.com>
Sent: Friday, November 8, 2024 9:56 AM
To: Cannon, Caitlin (ECY)
Subject: Courtesy Copy: Washington SIP: Comment on draft PM2.5 NAAQS Designation Recommendation and Exceptional Events Demonstration and participate in a public hearing

This is a courtesy copy of an email bulletin sent by Caitlin Cannon.

This bulletin was sent to the following groups of people:

Subscribers of ECY-AQ-RULE-AND-SIP-UPDATES (1494 recipients)

DEPARTMENT OF ECOLOGY
State of Washington

We invite you to comment on our draft Designation Recommendation and Exceptional Events Demonstration for Fine Particle Pollution (PM2.5) National Ambient Air Quality Standards (NAAQS) to EPA and participate in a public hearing on December 10, 2024

Public Comment Period and Public Hearing

PM2.5 NAAQS Designation Recommendation and Exceptional Events Demonstration

Ecology has prepared a draft Designation Recommendation for EPA's 2024 PM2.5 NAAQS. This recommendation includes a letter to EPA recommending that Washington State meets the new lower standard and an Exceptional Events Demonstration requesting that EPA Exclude certain wildfire-impacted data from their regulatory decision. We have also

prepared a report on wildfire impacted data from 2021 which is not eligible for an Exceptional Events Demonstration.

These documents are available for public review through December 13, 2024 at the following locations:

- **Online:**
  - Designation Recommendation Letter
  - Exceptional Events Demonstration for Colville E 1st St Monitor
  - Wildfire Smoke Impacted Days 2021
- **Printed copy available upon request**

Why is this important?

In February 2024, EPA lowered the PM2.5 Annual Primary NAAQS from 12 micrograms per cubic meter ($\mu g/m^3$) to 9 $\mu g/m^3$ to better protect human health. After EPA lowers a NAAQS, they designate all areas in the country as either in "attainment" of the standard, in "nonattainment" of the standard, or as "unclassifiable" due to insufficient air quality data. Any areas of Washington that may be designated as nonattainment as a result of the new standard will be required to be brought into attainment through a revision to the State Implementation Plan (SIP). Before EPA finalizes the designations, Ecology must submit a Designation Recommendation to EPA, which is due by February 2025.

PM2.5 is a common air pollutant that comes from human sources, including residential wood heating and vehicle exhaust, as well as natural sources, especially wildfires. EPA allows air quality data impacted by natural events that cannot be reasonably controlled (notably, wildfire) to be excluded from their designation decision through an Exceptional Event Demonstration. This process does not remove the data from the record, it merely excludes the data from the regulatory decision.

Learn More

- National Ambient Air Quality Standards
- The Designation Process
- Exceptional Events
- PM2.5 Nationally
- PM2.5 in Washington State
- Washington's State Implementation Plan (SIP)

Send us your comments by December 13, 2024

Please send us your written comments by December 13, 2024.

Comment or View Comments Online

Submit or View Comments

Comment By Mail

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

Mailed comments must be postmarked by December 13, 2024.

Join us for a virtual Public Information Session

November 20, 2024 from Noon to 1:30 PM

Register

Participate in a virtual Public Hearing on this recommendation

December 10th, 2024 at 4:00 PM

Register

ADA Accommodations

To request accommodations and services to support your participation in the document review or the virtual hearing contact Ecology at (360) 407-6831 or ecyadacoordinator@ecy.wa.gov. Persons with impaired hearing may call Washington Relay Service at 711. Persons with a speech disability may call TTY at 800-833-6384.

Chinese

国家环境保护局降低了细颗粒物或 PM2.5 的国家环境空气质量标准。华盛顿州生态管理署正在向美国环保局提交一份关于华盛顿地区是否符合这一新标准的建议。

对此建议的评论截止日期为December 13, 2024

公开听证会日期：December 10, 2024

如需了解更多信息，或要求口译员请致电 Caitlin Cannon 360-489-4046

Korean

환경보호청(EPA)은 미세먼지(PM2.5)에 대한 국가 대기질 기준을 낮췄습니다. 주 환경부는 워싱턴 지역이 이 새로운 기준을 충족하는지 여부에 대한 권고안을 EPA에 제출하고 있습니다.

이 권장사항에 대한 의견은 December 13, 2024까지 제출해야 합니다.

공청회날짜: December 10, 2024

자세한 내용은Caitlin Cannon에게360-489-4046로 전화하여 통역을 요청하세요.

Spanish

La Agencia de Protección Ambiental (EPA, por sus siglas en inglés) ha reducido los Estándares Nacionales de Calidad del Aire Ambiental para partículas finas, o PM2.5. El Departamento de Ecología está presentando una recomendación a la EPA sobre si las áreas en Washington cumplen con este estándar nuevo.

Comentarios sobre esta recomendación se aceptarán hasta: December 13, 2024

Audiencia Pública Fecha: December 10, 2024

Para más información, por favor llame a Caitlin Cannon al 360-489-4046 y solicite un intérprete.

Vietnamese

Cơ quan Bảo vệ Môi trường đã hạ Tiêu chuẩn Chất lượng Không khí Môi trường Quốc gia đối với các hạt mịn hoặc PM2.5. Bộ Môi Sinh đang đệ trình đề xuất lên EPA về việc liệu các khu vực của Washington có đáp ứng tiêu chuẩn mới này hay không.

Ý kiến về đề xuất này phải được nộp trước December 13, 2024

Buổi điều trần cho công chúng Ngày: December 10, 2024

Để biết thêm thông tin, vui lòng gọi cho Caitlin Cannon số 360-489-4046 và yêu cầu thông dịch viên.

Caitlin Cannon
Environmental Planner 3
caitlin.cannon@ecy.wa.gov
360-489-4046