

# CONCISE EXPLANATORY STATEMENT

## Wildfire Smoke: EPA AQI Alignment

Chapter 296-820 WAC, Wildfire Smoke, and  
Chapter 296-307 WAC, Safety Standards for Agriculture, Part G-1.

Public Hearing: December 4, 2024

Adoption: April 15, 2025

Effective: May 16, 2025

---

---

### *Table of Contents*

I.	Purpose of Rulemaking.....	Page 2
	A. Background.....	Page 2
	B. Summary of the Rulemaking Activities.....	Page 2
II.	Changes to the Rules.....	Page 2
III.	Comments on Proposed Rule.....	Page 3
	A. Comment Period.....	Page 3
	B. Public Hearing.....	Page 3
	C. Summary of Comments Received and L&I's Response.....	Page 3-12

## **I. Purpose of Rulemaking**

The adopted language was originally filed as a CR-105, under [WSR 24-11-143](#). Labor & Industries (L&I) received a timely objection to that expedited rulemaking filing requiring L&I to file a CR-102 ([WSR 24-21-090](#)) and engage in the standard rulemaking process under the Administrative Procedures Act. Below is a summary of the adopted changes:

- Updated references to the AQI values throughout chapter 296-820 WAC and WAC 296-307-09805 through 296-307-09860 to align with recent EPA updates. This includes adding AQI values to a level previously considered “Beyond the AQI” by the EPA.
- Made housekeeping changes and minor updates to the appendices found in both chapters to reflect EPA revisions including updating the equation for calculating the AQI (non-mandatory).

### **A. Background**

This rulemaking was conducted to update the Air Quality Index (AQI) values referenced in the wildfire smoke rules to reflect changes the Environmental Protection Agency (EPA) made to the AQI that became effective on May 6, 2024. Employers are allowed to use the approximate corresponding AQI values for the ease of compliance with the requirements in the rules; this ensures that the regulated community will be able to comply with the rule requirements when using data sources that do not display the hourly PM<sub>2.5</sub> concentrations.

### **B. Summary of the rulemaking activities**

L&I completed rulemaking on the hazards of wildfire smoke exposure to outdoor workers, which became effective on January 15, 2024. During the course of that multi-year rulemaking project, L&I became aware that the EPA was working to update the AQI breakpoints, which would change the AQI values referenced in the wildfire smoke rules. Throughout stakeholdering, L&I communicated that if the EPA made updates to the AQI, L&I would update the wildfire smoke rules to ensure the regulated community has accurate information. This rulemaking updates L&I’s current wildfire smoke rule to correctly reflect the recent revisions to the AQI.

## **II. Changes to the Rules (Proposed rule versus rule adopted)**

### **WAC 296-307-09815 Identification of harmful exposures.**

- Removed reference to the Washington department of labor and industries PM<sub>2.5</sub> Air Quality Map from subsection (1)(c); the map was removed from the department’s website and is no longer a resource.

**WAC 296-820-815 Identification of harmful exposures.**

- Removed reference to the Washington department of labor and industries PM<sub>2.5</sub> Air Quality Map from subsection (1)(c); the map was removed from the department’s website and is no longer a resource.

**III. Comments on Proposed Rule**

**A. Comment Period**

The formal public comment period for this rulemaking began on October 18, 2024, and ended December 11, 2024. L&I received a total of two written comments and 1 person provided oral testimony during the public hearing.

**B. Public Hearing**

<b>Date:</b>	<b>Time:</b>	<b>Location:</b>	<b>Attendance</b>	<b>Testified:</b>
December 4, 2024	11:00 a.m.	Virtual via Zoom	23	1

**C. Summary of Comments Received and L&I’s Responses**

Below is a summary of the comments L&I received, both through testimony and written comments, and the responses.

General Comments	L&I Response
<p><b>Centering outdoor workers in this rule is critical in adequately protecting workers.</b></p> <p>The rule is currently centered around employers and employer’s apparent (economic) feasibility for implementing workplace protections. While WISHA regulation supersedes that of OSHA for Washington State as long as standards are equal to or more stringent than OSHA, the proposed rule</p>	<p>Thank you for your comment. This comment is outside the scope of the rule. The scope of this rulemaking was limited to address changes in the Air Quality Index (AQI) breakpoints made by the U.S. Environmental Protection Agency (EPA) on May 6, 2024. The requirements of the wildfire smoke rule are based on PM<sub>2.5</sub> concentrations, and includes an equivalent AQI to the PM<sub>2.5</sub> concentration threshold to assist employers in complying with the rule. These exposure thresholds were</p>

neither provides an explanation for “infeasibility,” nor provides data whereby OSHA’s general threshold policy for economic feasibility could be determined. The following rationale for action thresholds are provided in the Cost Benefit Analysis (CBA) for this rule.

The accumulation of research demonstrates adverse health effects at lower PM<sub>2.5</sub> levels than previously identified and therefore the adjustment of EPA’s AQI accordingly, notably lowering the lower breakpoint for the Hazardous AQI Category from 250 µg/m<sup>3</sup> to 225.5+ µg/m<sup>3</sup>, and considering everything above 225.5+ µg/m<sup>3</sup> hazardous. The Cost Benefit Analysis (CBA) accompanying Chapter 296-820 WAC and Chapter 290-307 WAC Table 2.1 estimates of 7.7% of time spent by outdoor workers in conditions with PM<sub>2.5</sub> concentrations 35.5-250 µg/m<sup>3</sup>, 0.3% of time spent outdoors by workers in conditions with PM<sub>2.5</sub> concentrations 250-500.3 µg/m<sup>3</sup> and 0.0% of time spent outdoors by workers in conditions with PM<sub>2.5</sub> concentrations 500-554.9 µg/m<sup>3</sup>. Given the lowering of the lower breakpoint for the Hazardous Category, and removal of the upper break point, it is unclear as to why the CR-102 does not adjust its recommendations to employers accordingly, especially given the findings of the CBA.

Please provide an explanation as to why these protective efforts are considered “infeasible?”

We recommend that the proposed rule both re-evaluate its recommendations for workers exposed to wildfire smoke between PM<sub>2.5</sub> concentration levels 35.5-225.5+ µg/m<sup>3</sup> and initiation of a Respiratory Protection Program (RPP) at the Hazardous breakpoint. While it is noted per **Figure 3:**

established in the permanent rule adopted December 14, 2023, and effective January 14, 2024. In setting the thresholds in the permanent rule, L&I followed the requirement under the Washington Industrial Safety and Health Act (WISHA), RCW 49.17.040(4), to “[p]rovide for the promulgation of health and safety standards and the control of conditions in all workplaces concerning...harmful physical agents which shall set a standard which most adequately assures, to the extent feasible, on the basis of the best available evidence, that no employee will suffer material impairment of health or functional capacity.” This mandate requires L&I to consider both the critical need to protect workers along with the technological and economic feasibility of the rule. In determining the exposure thresholds and other requirements for the rules, L&I considered the wildfire smoke regulations from California and Oregon, and the current best evidence on wildfire smoke exposure, in addition to stakeholder input and comments. L&I must also determine that the rules are least burdensome alternative under the Administrative Procedure Act (APA) that still achieves the goals and objectives of WISHA.

As discussed in the Cost Benefit Analysis to the L&I’s 2024 permanent rules, L&I’s rules do not include mandatory respirator requirements absent the elements of a complete respirator protection program, including fit testing and medical surveillance, and instead requires employers directly distribute respirators to employees when wildfire smoke level are at 250.5 µg/m<sup>3</sup> (updated AQI 351) to 500.3 µg/m<sup>3</sup> (updated AQI 848). L&I took this course to address stakeholder input and the risk of additional harm to some workers from respirator use without a medical evaluation and other respiratory program elements that would ensure safe

<p><b>Concentration inside respirator</b> the benefits of an unfitted N95 are less than a Fit-tested N95, nevertheless benefits exist that assumes 50% PM<sub>2.5</sub> penetration, acknowledging the variability from person to person. As such, additional/alternative protections measures should be provided to employers for intervention at lower PM<sub>2.5</sub> levels.</p>	<p>and effective use. At this time, it is unknown if workers who have a respirator on their person at these levels are less likely to wear them than when there is a requirement in rule for employers to mandate workers wear them.</p> <p>The permanent rule in 2024 followed emergency rules in 2022 and 2023, both of which had some different thresholds then were adopted in the permanent rule, with the most stringent requirements being the permanent 2024 rule. L&amp;I believes that it is important for both outdoor workers and their employers to understand the current requirements and get experience implementing them before initiating further changes. Information on how the rule implementation is working in practice in Washington and Oregon will be helpful to future changes. As such, L&amp;I will continue to evaluate the effectiveness of the rule, monitor the public and occupational health evidence as it progresses, and as we get additional data, we will determine when the underlying rule should be reevaluated. However, we appreciate the forward thinking on this approach and look forward to continuing to collaborate on how messaging for occupational exposures and L&amp;I rule requirements fit into the messaging for the general public.</p>
<p><b>Center outdoor workers to inform updates to the rule.</b> Convening and engaging partners to get input on the rule, with a primary focus on outdoor workers, would help develop interventions and exposure controls that prioritize the needs of workers and enhance effectiveness.</p>	<p>Thank you for the comment. L&amp;I will continue to evaluate the effectiveness of the rule, monitor the public and occupational health evidence as it progresses, and as we get additional data, we will determine when the underlying rule should be reevaluated. We are committed to engaging with all interested and impacted parties and will continue to coordinate with agencies like the Washington State Department of Health when L&amp;I engages in updates to the underlying rule, including how messaging for occupational exposures and L&amp;I rule requirements fit into the messaging for the general public.</p>

<p><b>L&amp;I’s Cost Benefit Analysis does not adequately capture all benefits of the rule.</b></p> <p>In the Concise Explanatory Statement and Cost Benefit Analysis (CBA) for this rule, L&amp;I notes requiring respiratory protection at concentrations lower than 500 ug/m<sup>3</sup> is infeasible. It notes an estimated annual cost to all impacted businesses of \$10.7 - \$14.6 million and an estimated benefit of \$17.6 - \$27.8 million in “addition to other significant but unquantifiable benefits. Therefore, <b>L&amp;I concludes the probable benefits of these adopted rules exceed their probable cost.</b>”</p> <p>The CBA does not adequately reflect the true benefits of the rule. While the CBA identifies many qualitative benefits, e.g., improved employee wellness at worksites, avoidance of pain and suffering, and impact to productivity loss and quality of life, these are not included in the final CBA determination. <b>“The wildfire smoke rules’ tangible and intangible benefits associated with prevented health effects are expected to be greater than those costs identified in this analysis.”</b> Including a more thorough accounting of this and other benefits may shift the balance in terms of what is a ‘feasible’ PM<sub>2.5</sub> threshold for requiring respirators, as well as other recommendations and/or requirements.</p> <p>Additionally, given the lowering of the breakpoint of the Hazardous Category to 225.5 µg/m<sup>3</sup> and the previous recommendation to adjust implementation of the RPP accordingly, it is likely the CBA’s estimates will need to be reevaluated.</p>	<p>Thank you for your comment. There is no CBA for this rulemaking.</p> <p>This relates to the underlying rule effective in January 2024 and CBA posted to the L&amp;I website in December 2023. The underlying rulemaking was not based solely on economic feasibility, although that is required of us under the Regulatory Fairness Act (RFA) and Administrative Procedure Act (APA). WISHA mandates L&amp;I adopt health and safety standards and the control for harmful physical agents which “to the extent feasible, on the basis of the best available evidence, that no employee will suffer material impairment of health or functional capacity.” In determining the exposure thresholds and other requirements for the rules, L&amp;I considered the wildfire smoke regulations from California and Oregon, and the current best evidence on wildfire smoke exposure, in addition to stakeholder input and comments. L&amp;I must also determine that the rules are least burdensome alternative under the APA that still achieves the goals and objectives of WISHA.</p>
---	--

<p>Please provide a more thorough CBA that is inclusive of tangible and intangible benefits and the lower Hazardous Category PM<sub>2.5</sub> concentration.</p>	
<p><b>L&amp;I's proposed updates to the AQI reference values cited in the rule are inconsistent with EPA's changes.</b></p> <p>The EPA lowered PM<sub>2.5</sub> concentrations for three of the AQI breakpoints based on an accumulation of scientific evidence indicating the previous breakpoints were not adequately health protective. The intent from EPA was to lower PM<sub>2.5</sub> concentration breakpoints to better protect people, especially sensitive groups such as outdoor workers, from the health risks from PM<sub>2.5</sub> exposure.</p> <p>The action thresholds in the CR-102 rule are tied to PM<sub>2.5</sub> concentrations, and the addition of AQI values is meant to aid in communication. Maintaining the AQI values and adjusting the PM<sub>2.5</sub> concentrations, consistent with the 2024 EPA's changes will be easier for employers interpreting the rule. Since the AQI is primarily a communication tool, it makes sense, both from a communication and a scientific standpoint, to maintain the AQI Category and Index Value and adjust the PM<sub>2.5</sub> concentrations accordingly. Note - throughout the CR-102 proposed rule, 250.5 ug/m<sup>3</sup> remains the upper level of the AQI Hazardous category. The current EPA breakpoint has been lowered to 225 ug/m<sup>3</sup>. As such, outdoor activities above this cut point are considered hazardous for everyone.</p> <p>Please provide an explanation as to why the CR-102 maintains the AQI Category and Index Values and not adjust AQI Category breakpoints to ensure consistency with EPA's science-based changes and those used by DOH in its wildfire smoke guidance resources.</p>	<p>Thank you for your comment. The scope of this rulemaking was limited to address changes in the Air Quality Index (AQI) breakpoints made by the U.S. Environmental Protection Agency (EPA) on May 6, 2024. The requirements of the wildfire smoke rule are based on PM<sub>2.5</sub> concentrations, and includes an equivalent AQI to the PM<sub>2.5</sub> concentration threshold to assist employers in complying with the rule. These exposure thresholds established in the permanent rule adopted December 14, 2023, and effective January 15, 2024.</p> <p>L&amp;I's underlying rule has been in effect since January 2024. The permanent rule in 2024 followed emergency rules in 2022 and 2023, both of which had some different thresholds then were adopted in the permanent rule, with the most stringent requirements being the permanent 2024 rule. L&amp;I believes that it is important for both outdoor workers and their employers to understand the current requirements and get experience implementing them before initiating further changes. Information on how the rule implementation is working in practice in Washington and Oregon will be helpful to future changes. As such, L&amp;I will continue to evaluate the effectiveness of the rule, monitor the public and occupational health evidence as it progresses, and as we get additional data, we will determine when the underlying rule should be reevaluated. However, we appreciate the forward thinking on this approach and look forward to continuing to collaborate on how messaging for occupational exposures and L&amp;I rule requirements fit into the messaging for the general public.</p>

<p><b>L&amp;I's PM<sub>2.5</sub> action thresholds are not adequately protective according to a large volume of epidemiologic evidence.</b></p> <p>The proposed action thresholds appear arbitrarily chosen and not grounded in epidemiologic evidence, the large volume of which suggests negative health impacts associated with PM<sub>2.5</sub> exposure increase rapidly at low levels of PM<sub>2.5</sub> and start to taper off at higher levels. As such, the proposed wildfire smoke rule should have stronger required actions at lower thresholds than are currently in the rule, consistent with the science as noted in the table below.</p> <p>The proposed rule is inconsistent with health-based standards by which Health Officers make recommendations and requirements in our local health jurisdictions, which are based on the 2024 updated EPA thresholds and the DOH Wildfire Smoke Guidance for Local Public Health Officers, summarized HERE, and guide our work with other local partners, specifically schools. Consistency across agencies is essential to ensure employee safety and health.</p> <p>Lowering thresholds will increase consistency with WA DOH wildfire smoke guidance, some of which is already used informally in the occupational health community.</p> <p>Please provide an explanation as to why the L&amp;I's proposed rule breakpoints have not been adjusted to reflect changes made by the EPA.</p>	<p>Thank you for your comment. This comment is outside the scope of the rule. The scope of this rulemaking was limited to address changes in the Air Quality Index (AQI) breakpoints made by the U.S. Environmental Protection Agency (EPA) on May 6, 2024. The requirements of the wildfire smoke rule are based on PM<sub>2.5</sub> concentrations, and includes an equivalent AQI to the PM<sub>2.5</sub> concentration threshold to assist employers in complying with the rule. These exposure thresholds established in the permanent rule adopted December 14, 2023, and effective January 15, 2024.</p> <p>The permanent rule in 2024 followed emergency rules in 2022 and 2023, both of which had some different thresholds then were adopted in the permanent rule, with the most stringent requirements being the permanent 2024 rule. L&amp;I believes that it is important for both outdoor workers and their employers to understand the current requirements and get experience implementing them before initiating further changes. Information on how the rule implementation is working in practice in Washington and Oregon will be helpful to future changes. As such, L&amp;I will continue to evaluate the effectiveness of the rule, monitor the public and occupational health evidence as it progresses, and as we get additional data, we will determine when the underlying rule should be reevaluated. However, we appreciate the forward thinking on this approach and look forward to continuing to collaborate on how messaging for occupational exposures and L&amp;I rule requirements fit into the messaging for the general public.</p>
<p><b>Work together to update the action thresholds in the rule to reflect the epidemiologic evidence.</b> We'd like to work together to come up with lower thresholds for required protections that align with scientific evidence, DOH wildfire</p>	<p>Thank you for the comment. L&amp;I will continue to evaluate the effectiveness of the rule, monitor the public and occupational health evidence as it progresses, and as we get additional data, we will determine when the underlying rule should be reevaluated. We are committed to engaging with all interested</p>

<p>smoke guidance, and with Oregon and California respirator requirements in their rules.</p>	<p>and impacted parties and will continue to coordinate with agencies like the Washington State Department of Health when L&amp;I engages in updates to the underlying rule.</p>
<p><b>Categories of workers should not be excluded from the rule.</b></p> <p>Workers performing prescribed burns are excluded from the rule. This would appear to be an arbitrary elimination of a sensitive group exposed to a significant amount of wood smoke. There is no explanation for this exclusion. It is recommended these individuals be included under the protections of the rule.</p> <p>Please provide an explanation as to why these workers are excluded from the proposed rule.</p>	<p>Thank you for your comment. This comment is related to the underlying rule. This adopted rulemaking is about aligning AQI equivalents to the original thresholds established in the first rulemaking.</p> <p>The unique hazards associated with wildland fire operations are covered in chapter 296-305 WAC, Safety standards for firefighters. It is L&amp;I's interpretation that employees engaged in wildland fire operations are not covered under the scope of the wildfire smoke rule when chapter 296-305 WAC is applicable. To provide further clarity, L&amp;I has added an exemption for workers performing prescribed burns under WAC 296-820-805(4). If wildland firefighters are performing work that is outside the scope of chapter 296-305 WAC and outside of prescribed burn work, they would be covered by chapter 296-820 WAC rule during those tasks. Workers engaged in prescribed burning activities will be evaluated in future rulemakings.</p>
<p><b>Include prescribed burners.</b> These workers experience significant smoke exposure and coverage under this rule in the future would better protect their occupational safety and health.</p>	<p>Thank you for your comment. This comment is related to the underlying rule. This adopted rulemaking is about aligning AQI equivalents to the original thresholds established in the first rulemaking.</p> <p>The unique hazards associated with wildland fire operations are covered in chapter 296-305 WAC, Safety standards for firefighters. It is L&amp;I's interpretation that employees engaged in wildland fire operations are not covered under the scope of the wildfire smoke rule when chapter 296-305 WAC is</p>

	<p>applicable. To provide further clarity, L&amp;I has added an exemption for workers performing prescribed burns under WAC 296-820-805(4). If wildland firefighters are performing work that is outside the scope of chapter 296-305 WAC and outside of prescribed burn work, they would be covered by chapter 296-820 WAC rule during those tasks. Workers engaged in prescribed burning activities will be evaluated in future rulemakings.</p>
<p><b>L&amp;I's required protections fall behind Oregon and California's protections for outdoor workers.</b></p> <p>Oregon and California require (or will soon require) outdoor workers to wear respirators at lower PM<sub>2.5</sub> concentrations. For example, Oregon requires respirators to be worn at 200 ug/m<sup>3</sup>, and the California legislature passed a bill in 2022 requiring Cal/OSHA to propose rulemaking by December 01, 2025 that requires farmworkers to wear respirators at an AQI of 301 (225.5 ug/m<sup>3</sup>). L&amp;I should consider updating their rule to be more consistent with neighboring states. Please provide an explanation as to why the proposed rule does not consider adjusting its guidance to reflect those of neighboring states, especially given that many of these outdoor workers travel between states.</p>	<p>Thank you for your comment. This comment is related to the underlying rule. It was stated clearly in the CR-102 that we were not reevaluating the underlying rule language and only updating the AQI equivalency. This adopted rulemaking is about aligning AQI equivalents to the original thresholds established in the first rulemaking.</p> <p>Oregon's OSHA's rule set the thresholds in µg/m<sup>3</sup> of PM<sub>2.5</sub> and included the corresponding AQI as it existed on the rule adoption date of May 2022. In June 2024, Oregon OSHA issued a guidance document regarding the EPA rule change with a crosswalk from the AQI level references in their rule with the updated AQI levels under the EPA's 2024 rule. Oregon OSHA did not change the thresholds in their rules. <a href="https://osha.oregon.gov/OSHARules/interps/TG-2024-01.pdf">https://osha.oregon.gov/OSHARules/interps/TG-2024-01.pdf</a></p> <p>Both Oregon and Washington require use of respirators, with a full respiratory protection program at 500.4 µg/m<sup>3</sup> (AQI 849).</p> <p>Oregon OSHA's wildfire smoke rules require mandatory respirator use without a full respiratory protection program, including fit testing or medical clearance, at 200.9 µg/m<sup>3</sup> to 500.3 µg/m<sup>3</sup> (updated AQI levels of 277 to 848). L&amp;I</p>

	<p>previously considered policy options that would require respirators be worn by workers without fit-testing or medical evaluations.</p> <p>California OSHA's wildfire smoke rule use the AQI as the trigger and their webpage and rule still reference the previous AQI levels and categories. Their rule has voluntary respirators at the AQI of 151 until an AQI of 500. However, the California Legislature directed California OSHA to review the wildfire smoke rules with regard to farmworkers, and in part, to consider requiring respirators without fit testing or medical evaluations at an AQI of 301 or more. California OSHA is directed to provide proposed rule changes to California's Occupational Safety and Health Standard's Board by December 1, 2025, and the Occupational Safety and Health Standard's Board is directed to review and consider adopting the proposed changes by December 31, 2025. L&amp;I will be monitoring these activities.</p> <p>As discussed in the Cost Benefit Analysis to the L&amp;I's 2024 permanent rules, L&amp;I's rules do not include mandatory respirator requirements absent the elements of a complete respirator protection program, including fit testing and medical surveillance, and instead requires employers directly distribute respirators to employees when wildfire smoke level are at <math>250.5 \mu\text{g}/\text{m}^3</math> (updated AQI 351) to <math>500.3 \mu\text{g}/\text{m}^3</math> (updated AQI 848). L&amp;I took this course to address stakeholder input and the risk of additional harm to some workers from respirator use without a medical evaluation and other respiratory program elements that would ensure safe and effective use. At this time, it is unknown if workers who have a respirator on their person at these levels are less likely</p>
--	--

	<p>to wear them than when there is a requirement in rule for employers to mandate workers wear them.</p> <p>L&amp;I's underlying rule has been in effect since January 2024. The permanent rule in 2024 followed emergency rules in 2022 and 2023, both of which had some different thresholds then were adopted in the permanent rule, with the most stringent requirements being the permanent 2024 rule. L&amp;I believes that it is important for both outdoor workers and their employers to understand the current requirements and get experience implementing them before initiating further changes. Information on how the rule implementation is working in practice in Washington and Oregon will be helpful to future changes. As such, L&amp;I will continue to evaluate the effectiveness of the rule, monitor the public and occupational health evidence as it progresses, and as we get additional data, we will determine when the underlying rule should be reevaluated. However, we appreciate the forward thinking on this approach and look forward to continuing to collaborate on how messaging for occupational exposures and L&amp;I rule requirements fit into the messaging for the general public.</p>
--	--