



Breathing freely:

Options to advance environmental justice and health equity for Yakima County farmworkers

Ethan Hume

December 5, 2025

Acknowledgements

A huge thanks to the Washington Conservation Association and the University of Washington for making this project possible, and especially to Katie Fields for her mentorship and guidance along the way. This has been an incredible opportunity for me to dive into the environmental policy space and develop a whole suite of new skills. Thank you!

Executive Summary

This report explores four potential policy alternatives which are designed to advance environmental justice and health outcomes for farmworkers. Although these policies are penned with a particular emphasis on Yakima County farmworkers, they are general enough to advance health equity for outdoor workers across Washington. Three of the four take advantage of the existing Labor & Industries (L&I) smoke rule as an entry point for future policy revisions.

The first option is a direct revision of the L&I smoke rule. This rule sets particulate matter thresholds at which action must be taken to protect outdoor employee health. The proposed revision lowers the thresholds for each directed action to align with scientific evidence and federal guidelines. It also takes inspiration from similar rulemaking in Oregon and California, bringing Washington State policy in line with our West Coast peers.

The second policy alternative requires employers to file smoke response plans with Washington L&I. Smoke response plans are required to be kept on-site under the L&I smoke rule, but evidence suggests that filing occupational safety response plans with state agencies increases accountability and adherence. This policy is modeled after the California Injury and Illness Protection Program (IIPP) as well as existing EPA requirements for chemical safety.

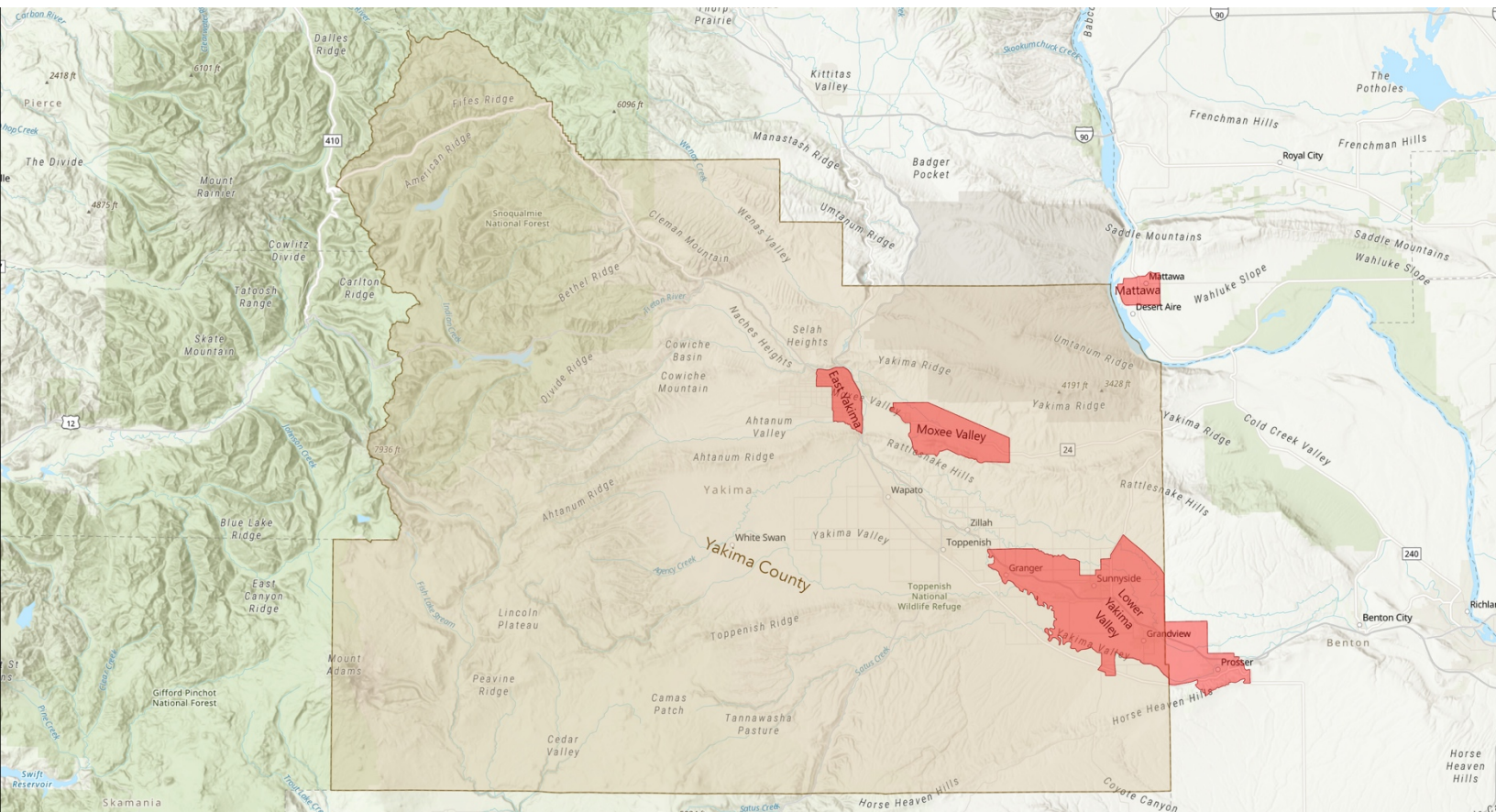
The third policy proposes increased enforcement of the L&I smoke rule. At present, enforcement is sparse and usually initiated when employees document complaints with L&I. Placing the onus on farmworkers – often immigrants who are not native English speakers – to report unsafe working conditions likely prevents many such conditions from being brought to the agency’s attention. Similar policy was found to be highly effective in boosting compliance with California’s IIPP.

The final policy establishes a state *promotores* program. This is a culturally relevant peer education and outreach program focused on educating farmworkers about the health impacts of wildfire smoke, their rights as employees, and mitigation strategies. These programs exist in Washington as grassroots efforts and community organizations. Formalizing a state program with community input and stable funding will increase the reach and sustainability of these efforts.

Problem Statement

The greater Yakima region experiences a very high level of fine particulate matter (PM_{2.5}) pollution as compared to other areas in Washington¹, which is linked to elevated incidence of lung disease and all-cause mortality². Wildfire smoke is a chief driver of PM_{2.5} in the region¹, and is more damaging to health than other forms of particulate pollution³.

In the Yakima area, farmworkers are at disproportionate risk of experiencing these negative health impacts. They work long days outdoors inhaling smoke during fire season, and are already at risk from many occupational hazards like heat illness and physical injury. Many of the existing policies do not adequately protect farmworkers from wildfire smoke and air pollution.



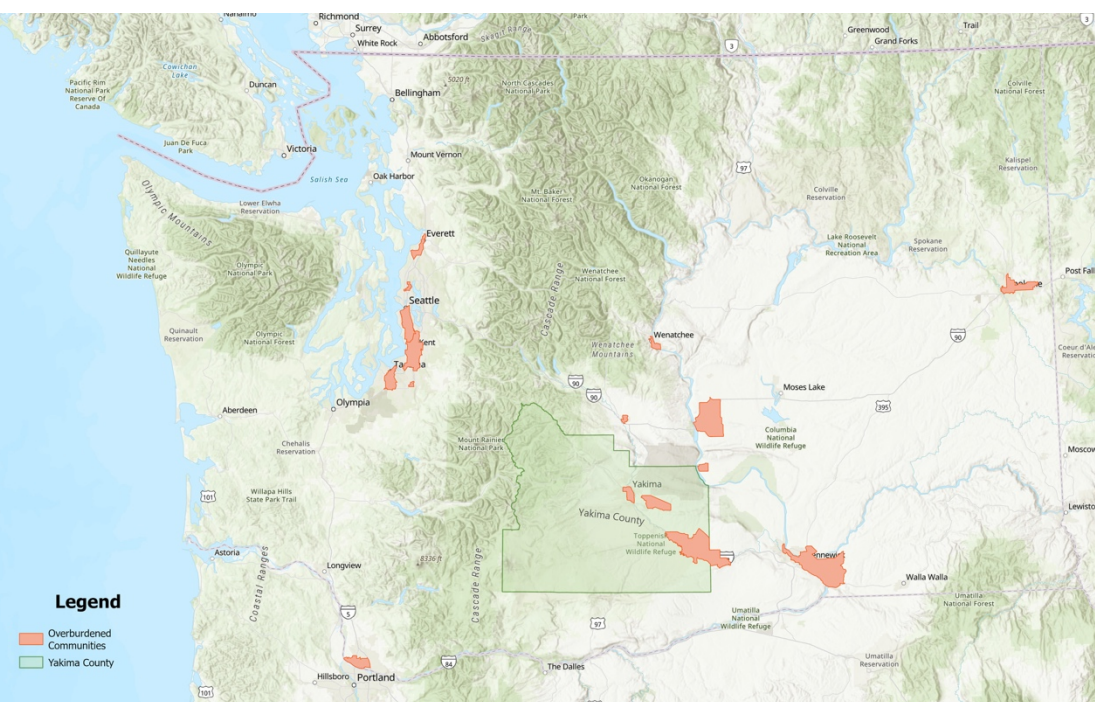
Wildfire smoke policy represents a major gap in ensuring environmental justice goals are met for farmworkers in the greater Yakima region.

Background

In 2021, the Washington Legislature passed the Climate Commitment Act (CCA), which directed the Department of Ecology to define communities which are overburdened by criteria air pollutants. This iterative process incorporated community input on the burden of air pollution in Washington alongside a data-driven framework for community identification. Selected overburdened communities (OBCs) had an elevated level of criteria air pollution and met at least **one** of the following criteria:

- Had either a 9 or a 10 ranking on the Washington [Environmental Health Disparities \(EHD\) map](#).
- Were at or above the 90th percentile of census block groups for the EJScreen Demographic Index*.
- Are Tribal land.

** This resource was discontinued by the Trump Administration on February 6, 2025*



Through this process, sixteen communities were identified including four surrounding Yakima: East Yakima, Lower Yakima Valley, Moxee Valley, and Mattawa. The map at the left shows the current OBCs throughout Washington. On the previous page, a map focuses on the four OBCs in and around Yakima County.

Of note, Ecology did not include wildfire smoke as one of the

indicators for inclusion in the Improving Air Quality in Overburdened Communities Program. While it was considered, Ecology ultimately determined that wildfire smoke fell under the jurisdiction of Washington Department of Natural Resources. There are also significant challenges associated with determining what portion of PM_{2.5} is wildfire derived. Ecology does maintain information on the relative contribution of wildfire smoke to air pollution in each OBC, which can be found in the OBC [StoryMap](#).

While there was interest in considering outdoor labor as a risk factor that contributed to OBC status, Ecology determined that insufficient data existed to support inclusion as a dimension of

analysis. However, epidemiological evidence suggests that farmworkers in Yakima County may be exposed *orders of magnitude* more smoke than in the general population. In the years 2010 – 2018, Yakima farmworkers were exposed to 29.5 thousand hours of wildfire smoke. The second-most exposed farmworker group, Grant County farmworkers, were exposed to less than 10 thousand hours of smoke⁴. Fortunately, several OBCs were identified in Yakima County despite not considering outdoor worker population as an inclusion criterion.

In a survey of 305 Yakima County residents which asked about issues of environmental justice, Empowering Latina Leadership & Action (ELLA) identified common themes in many responses. One was that people throughout the community were being adversely impacted by smoke. Said one resident, “So much smoke and burning is really affecting people”.

East Yakima and the Lower Yakima Valley experience high rates of asthma, chronic obstructive pulmonary disease (COPD), and cardiovascular diseases, all of which are associated with exposure to wildfire smoke as well as ambient PM_{2.5}⁵⁻⁷. The number of wildfire smoke days is expected to increase year over year as the effects of climate change continue to worsen⁸. This region is largely agricultural, and agricultural laborers are especially at risk for poor health outcomes from wildfire smoke exposure⁹⁻¹¹.

Farmworkers spend entire days outdoors in the path of smoke plumes and can inhale many times the maximum ‘safe’ limit of particulate matter set by the EPA⁹. Regulatory approaches to limiting exposure to harmful particulate matter often give the impression there is a ‘safe’ or ‘acceptable’ level of exposure. This is not true – in fact, exposure to any degree is associated with adverse health outcomes^{12,13}, making the high level of smoke contact for farmworkers even more concerning. There is a growing body of evidence suggesting that this wildfire-sourced particulate matter is much more toxic than general particulate matter³, meaning the impacts of fire on farmworker health could be more than earlier research would indicate.

“So much smoke and burning is really affecting people”

Policy Landscape

Although the involved communities have only been defined as ‘overburdened’ in the current manner since the passage of the CCA, concerns around smoke burden and environmental justice are not new in Greater Yakima or Washington State.

Many policies have been implemented over the years which impact the smoke burden for farmworkers, Yakima County residents, and all Washingtonians. Some have been focused and others far-reaching.

Further policy opportunities exist to close inequities in downstream health outcomes for vulnerable communities. These policies must be rooted in principles of environmental justice to ensure that groups like Yakima laborers achieve the same health outcomes as more privileged counterparts. In the ELLA environmental justice survey, one farmworker summarized this need when sharing his thoughts on what environmental justice meant to him: “Justice is when you’re fighting for something to be done in a different way”



Policy Recommendation 1:

Lower the AQI thresholds for encouraging and mandating respirator use for outdoor workers

In 2021, after a particularly severe 2020 wildfire season, the Washington State Department of Labor Industries (L&I) enacted a temporary emergency rule, WAC 296-62-085, to establish regulations around outdoor worker protections. This rule was revised and made permanent in 2023 as WAC 296-307-098. Among the guidance contained in the legislation were AQI thresholds for encouraging, providing, and/or mandating appropriate respiratory protection. **Table 1** illustrates the required responses for employers at varying levels of PM_{2.5} concentration or AQIs.

Daily PM_{2.5} concentration data for Yakima County, sourced from the Environmental Protection Agency (EPA) Daily Outdoor Air Quality Data tool¹⁴, were used to calculate the number of days spent in each air quality category. This sum is included in the rightmost column of **Table 1**.

The EPA recommends sensitive groups, which include outdoor workers¹⁵, limit outdoor activity duration and intensity when the AQI reaches 101 (or PM_{2.5} = 35.5). It recommends moving activities indoors if they are long or intense, such as an agricultural workday, when the AQI reaches 151 (or PM_{2.5} = 57). By AQI 301 (or PM_{2.5} = 251), all individuals are recommended to move indoors and sensitive groups are recommended to limit physical activity even indoors. Each EPA recommendation is matched to the corresponding L&I requirement in **Table 1**.

Oregon experiences similar wildfire smoke events to Washington State, and has a similar agricultural economy in rural areas. The Oregon Occupational Safety and Health Administration (OSHA) has written an equivalent policy regarding wildfire smoke with more conservative thresholds. Washington L&I should, at minimum, align respiratory protection thresholds with those set by Oregon to better protect agricultural workers and communities.

The threshold for mandatory N95 respirator use by employees per Oregon OSHA is AQI 276 (or PM_{2.5} = 200.9)¹⁶. At this first Oregon threshold, respirators must be distributed by the employer and worn by the employee, but do not need to be fit tested nor are medical evaluations required. However, both requirements must be fulfilled, along with all others in a full respiratory protection program, at a threshold of AQI 849 (or PM_{2.5} = 500.4). These guidelines are more conservative than the Washington L&I guidelines presented in **Table 1**.

Similarly, the threshold for mandatory N95 respirator use by employees in California is AQI 500 (or PM_{2.5} = 325.4)¹⁷, compared to the equivalent threshold of AQI 849 (or PM_{2.5} = 500.4) in Washington State.

Table 1: WAC 296-307-098 required employer responses against EPA recommendations, and actual days in Yakima County (2020 – 2024) at given concentration

Concentration PM _{2.5} (µg m ⁻³)	Air Quality Index (AQI)	Employer Response	EPA Recommendation	Days, 2020 – 2024
20.5	72	Employers encouraged to provide N95 respirators at no cost upon employee request.	Moderate (AQI 51 – 100): Air quality is acceptable. However, there may be a risk for some people, particularly those who are unusually sensitive to air pollution. [1,840 days]	353 days
35.5	101	Employers must provide N95 respirators at no cost and must encourage use. May directly distribute respirators but do not need to.	Unhealthy for Sensitive Groups (AQI 101 – 150): Members of sensitive groups may experience health effects. The general public is less likely to be affected. [63 days]	127 days
			Unhealthy (AQI 151 – 200): Some members of the general public may experience health effects; members of sensitive groups may experience more serious health effects. [48 days]	
			Very Unhealthy (AQI 201 – 300): Health alert: The risk of health effects is increased for everyone. [15 days]	

			Hazardous (AQI 301+): Health warning of emergency conditions: everyone is more likely to be affected. [12 days]	
250.5	351	Employers must directly distribute N95 respirators and must encourage use.	Hazardous (AQI 301+): Health warning of emergency conditions: everyone is more likely to be affected. [12 days]	11 days
500.4	849	Employees must be enrolled in complete respiratory protection programs. N95 respirators or better must be distributed and are required to be worn.	Hazardous (AQI 301+): Health warning of emergency conditions: everyone is more likely to be affected. [12 days]	0 days
555	957	Same as previous, except P100 respirators or better must be used.	Hazardous (AQI 301+): Health warning of emergency conditions: everyone is more likely to be affected. [12 days]	0 days

The thresholds described under WAC 296-307-098 do not align with the Air Quality Guide for Particle Pollution¹⁵ published by the EPA. Moderate air quality per the EPA begins at AQI 51, well below the first threshold set by the WAC. The second threshold set by the WAC comprises the remaining four EPA categories without requiring respirator use or even requiring direct distribution by employers.

The WAC is the least protective regulation amongst the West Coast states regarding outdoor worker protections in the event of particulate matter exposure, and does not align with federal guidance on protective measures. Labor & Industries, along with the cooperation of other relevant departments like Ecology and the Department of Health, should revise the language in WAC 296-307-098 to align with epidemiological literature, EPA guidelines, and the realities of

particulate matter concentration in Washington State. **Table 2** is one recommendation for an updated set of response thresholds for respiratory protection amongst agricultural workers.

It aligns each L&I requirement to the EPA recommendations directly. It also requires, rather than encourages, that employers must provide N95 respirators at no cost on request once AQI reaches a moderate level. The rightmost column shows this revision is better aligned with the reality of particulate matter concentrations in Yakima County. Rather than the most protective requirements of the WAC never being triggered from 2020 – 2024, the revised requirements would have been triggered on just over a dozen days. Implementing these changes would have only a small impact on employer’s operational costs, but could be highly protective for outdoor worker health and wellbeing.

Table 2: Proposed thresholds aligned with EPA recommendations, compared to actual days in Yakima County (2020 – 2024) at given concentration

Concentration PM _{2.5} (µg m ⁻³)	Air Quality Index (AQI)	Employer response	EPA Recommendation	Days, 2020 – 2024
12.5	51	Employers must provide N95 respirators at no cost, upon employee request.	Moderate (AQI 51 – 100): Air quality is acceptable. However, there may be a risk for some people, particularly those who are unusually sensitive to air pollution.	1,840 days
35.5	101	Employers must provide N95 respirators at no cost and must encourage use. May directly distribute respirators but do not need to.	Unhealthy for Sensitive Groups (AQI 101 – 150): Members of sensitive groups may experience health effects. The general public is less likely to be affected.	63 days
55.5	151	Employers must directly distribute N95 respirators and must encourage use.	Unhealthy (AQI 151 – 200): Some members of the general public may experience health effects; members of sensitive groups may experience more serious health effects.	48 days

150	201	Employees must be enrolled in complete respiratory protection programs. N95 respirators or better must be distributed and are required to be worn.	Very Unhealthy (AQI 201 – 300): Health alert: The risk of health effects is increased for everyone.	15 days
250	301+	Employees must be enrolled in complete respiratory protection programs. P100 respirators or better must be distributed and are required to be worn.	Hazardous (AQI 301+): Health warning of emergency conditions: everyone is more likely to be affected.	12 days

Policy Recommendation 2:

Require that employers file wildfire smoke response plans with Washington State Labor & Industries

Currently, WAC 296-307-098 regulates protections for outdoor workers under heavy smoke conditions and requires only that employers keep a copy of their wildfire smoke response plan on file¹⁸. These plans are to be tailored to the workplace in question and accessible to employees. They include information on:

- Symptoms of exposure to wildfire smoke
- Employee rights when experiencing detrimental health effects from wildfire smoke
- The methods by which the employer will determine PM_{2.5} concentration and communicate this measure to employees
- The employer's plan to limit exposure to harmful concentrations of smoke
- Instructions for respirator use

The Environmental Protection Agency requires written Risk Management Plans (RMPs) to be submitted directly to the EPA by responsible firms²⁰. RMPs describe the potential chemical and physical hazards present at a worksite and the employer's plan to prevent illness or injury to workers. This drives greater accountability for those firms which bear a responsibility for worker health and wellbeing and allows for more tailored education and enforcement by the EPA. Washington L&I should require the same from employers who fall under the scope of the L&I smoke rule, and maintain an internal database of individualized employer response plans to aid in education and enforcement actions.

Managing smoke exposure does not occur in a vacuum – especially in the Lower Yakima Valley, intentional agricultural or silvicultural burning is a driving factor of PM concentration¹. Agricultural burning for disposal of crop residue and clearing of field stubble is regulated by the Washington Department of Ecology, while silvicultural burning for fuel reduction and management is regulated by the Washington Department of Natural Resources (DNR). Inter-agency cooperation between Ecology, DNR, and Washington L&I can help accelerate the reduction in acute harm from smoke exposure. To this end, it is recommended to align contingency plan reporting requirements across the agencies. DNR requires that burners file smoke plans with the agency before conducting a prescribed burn²¹, which must align with the requirements of the statewide Smoke Management Plan and relevant WAC 332-24-201. Labor & Industries should similarly require employers to file wildfire smoke response plans directly to their agency to demonstrate compliance with the L&I smoke rule.

Estimated costs for this policy are low, although some administrative overhead may exist. Alone, this policy does not necessitate further enforcement activities and requires only a small revision of existing policy in WAC 296-307-098.

Policy Recommendation 3:

Increase the number of spot inspections performed by Washington State Labor & Industries at outdoor work sites

Current enforcement of L&I rules like the smoke rule is sporadic and complaint-driven²². This is concerning, since it depends on agricultural workers knowing about what rules exist to protect them and to whom they should report violations. This is a major barrier for a largely Spanish-speaking demographic. A 2023 survey by the Washington State Institute for Public Policy found that 44% of farmworkers who could not speak English reported they were “never offered a mask during intervals with smoke,”¹¹ but that almost double the amount of English-speaking workers had been offered a mask. This indicates that the smoke rule may not be followed by all employers, and more often impacts non-English speakers who would be less likely to report labor violations to L&I. When respondents were asked why they may not have reported workplace safety concerns in the past, WSIPP found that 33% of respondents either weren’t aware that they could. 40% didn’t know how to do so. 40% indicated they were afraid of being arrested or deported if they chose to report workplace hazards. Complaint-driven workplace safety programs are resulting in severe underreporting of employee concerns.

Routine inspections of labor sites increase compliance with state occupational safety regulations. In the 1990’s, California introduced a workplace safety program called the California Injury and Illness Protection Program (IIPP). Mendeloff et al. found in 2011 that since the IIPP’s introduction, overall compliance with several of the program requirements had not improved. However, “once an establishment has been cited for an IIPP violation, the likelihood of finding another IIPP violation at that establishment declines substantially”¹⁹. The authors found that this to be true even when the annual likelihood of inspection was only 5%. This suggests that even minimal enforcement visits lead to improved outcomes.

L&I should be performing routine spot inspections of a subset of agricultural and other outdoor worksites each smoke season to ensure compliance with the L&I smoke rule. These site visits can serve as education in addition to enforcement. A quote given to Cascade PBS by Jan Himebaugh with the Building Industry Association of Washington purports the rule is highly ambiguous and “...we know what happens when ambiguity happens. My members don’t know how to comply and they get fined.”²² Framing L&I visits as educational in nature, and offering employers a chance to correct infractions before punitive measures are taken, would make this policy change more feasible.

Estimated costs for this policy are moderately high, given the potential need for multiple new FTE hires by L&I to support the work. However, ensuring the smoke rule is followed will mean a significant return on investment in terms of increased worker health and productivity²³.

Policy Recommendation 4:

Introduce a *promotores* program focused on occupational health

The majority of farmworkers in Washington State speak only Spanish or primarily Spanish¹¹, which can limit the ability of laborers to understand and use health guidance that is delivered in English or is highly technical²⁴. Wildfire smoke exposure is one of many occupational hazards that farmworkers experience. The WSIPP survey found major barriers to risk awareness and reporting in agricultural labor¹¹. A lack of knowledge around how to protect oneself from wildfire smoke, and report when the wildfire smoke rule isn't being observed, is likely present on many worksites. Addressing this gap requires a specialized, community-centered approach.

Community health workers or *promotores de salud* are lay health workers who are members of the communities they work in. They serve as educators and as links to health or social services²⁵. *Promotores* were named as a potential solution by farmworkers interviewed on current wildfire smoke protections in Washington State²⁶. In this study by researchers at WSU and UW, respondents noted that both employers and supervisors lacked knowledge on how to respond to risks like wildfire smoke and that outside resources would be beneficial. *Promotores* models are also recommended additions to smoke response plans in California²⁷⁻²⁹.

This policy would implement a *promotores* model focused on outreach and education around occupational hazards like extreme heat and wildfire smoke for farmworkers. Potential vehicles for this program include a joint administration by Labor & Industries and Department of Health, which already maintains training media for community health workers and *promotores*.

These programs already exist in many parts of Washington, but are often led at a county or organizational level with grant funding.^{30,31} Some of these programs focus on preventive care like immunizations, breast cancer screenings, and pediatric wellbeing. Existing infrastructure and stakeholders should be leveraged when developing a robust, long-lived *promotores* program that targets occupational exposures to smoke. Although not explicitly *promotores* programs, several community-based organizations are performing educational outreach to affected communities, including farmworkers. For example, The Community for the Advancement of Family Education distributes box fans for home air filtration, holds bilingual workshops for families and neighbors, and participates in several policy working groups on EJ issues³². The Latino Community Fund conducts wildfire risk home assessments and community projects in addition to educational events³³. These programs are examples of the stakeholder interest and activation level in this space. Collaboration and engagement with these groups would be crucial to developing an effective, culturally informed *promotores* program.

This policy intervention would incur moderate costs, including those for the initial training and supervisory scaffolding. Additionally, funding to compensate *promotores* could be high depending on the scale of the program. California's Medi-Cal reimbursement rates for community health workers and *promotores* is currently set at \$26.66 per direct patient contact³⁴. Since this model would use a one-to-many outreach style without direct individual intervention, an hourly rate may be more appropriate.

Conclusions

Washington State has made great strides in advancing environmental justice and health equity for at-risk groups over the past decade. Despite this continued commitment, certain segments of the population continue to bear a disproportionate burden of wildfire smoke exposure. Among this subgroup are outdoor workers, especially farmworkers, who face compounded risks of occupational hazards and renewed marginalization in 2025. Nowhere in Washington is this more pronounced than in Yakima County, where farmworkers are exposed to smoke at levels an order of magnitude higher than any other county.

In order to uphold the State's commitment to advancing its environmental justice goals, further action is needed to protect these workers. This report has laid out four potential options with varying costs and feasibility. These policy options are non-exhaustive, and represent only a starting place from which further equity-driven solutions can and should be built.

**“Justicia es cuando estás luchando
porque algo se haga de una manera diferente”**

“Justice is when you're fighting
for something to be done in a different way”

References

1. Washington State Department of Ecology. Overburdened Communities Highly Impacted by Air Pollution. ArcGIS StoryMaps. March 1, 2023. Accessed August 20, 2025. <https://storymaps.arcgis.com/stories/c10bdbfc69984a9d85346be1a23f6338>
2. Gao Y. Research on the Harm Degree of PM2.5 Atmospheric Particulate Pollution to Human Health. *IOP Conf Ser Earth Environ Sci*. 2021;692(3):032014. doi:10.1088/1755-1315/692/3/032014
3. Aguilera R, Corringham T, Gershunov A, Benmarhnia T. Wildfire smoke impacts respiratory health more than fine particles from other sources: observational evidence from Southern California. *Nat Commun*. 2021;12(1):1493. doi:10.1038/s41467-021-21708-0
4. Austin E, Kasner E, Seto E, Spector J. Combined burden of heat and particulate matter air quality in WA agriculture. *J Agromedicine*. 2021;26(1):18-27. doi:10.1080/1059924X.2020.1795032
5. Liu JC, Pereira G, Uhl SA, Bravo MA, Bell ML. A systematic review of the physical health impacts from non-occupational exposure to wildfire smoke. *Environ Res*. 2015;136:120-132. doi:10.1016/j.envres.2014.10.015
6. Reid CE, Brauer M, Johnston FH, Jerrett M, Balme JR, Elliott CT. Critical Review of Health Impacts of Wildfire Smoke Exposure. *Environ Health Perspect*. 2016;124(9):1334-1343. doi:10.1289/ehp.1409277
7. Cascio WE. Wildland fire smoke and human health. *Sci Total Environ*. 2018;624:586-595. doi:10.1016/j.scitotenv.2017.12.086
8. Westerling AL, Hidalgo HG, Cayan DR, Swetnam TW. Warming and Earlier Spring Increase Western U.S. Forest Wildfire Activity. *Science*. 2006;313(5789):940-943. doi:10.1126/science.1128834
9. Manrique AF, Clarke K, Lednický J, Sabo Attwood T, Coker ES. Assessing Personal PM2.5 Exposure and Respiratory Virus Infections among Farmworkers in the Southeastern United States. *ISEE Conf Abstr*. 2021;2021(1). doi:10.1289/isee.2021.P-645
10. Lee G. *Impact of Smoke From Wildfire and Agricultural Burning on Farmworker Health and Behavior*. Ph.D. University of California, Davis; 2024. Accessed August 6, 2025. <https://www.proquest.com/docview/3116480315/abstract/1E44C25261984E9CPQ/1>
11. *The Needs of Farmworkers in Washington State*. Washington State Institute for Public Policy; 2025.
12. Barnett AG. It's safe to say there is no safe level of air pollution. *Aust N Z J Public Health*. 2014;38(5):407-408. doi:10.1111/1753-6405.12264

13. Marks GB. Misuse of Pollution Reference Standards: No Safe Level of Air Pollution. *Am J Respir Crit Care Med.* 2022;205(9):984-985. doi:10.1164/rccm.202201-0160ED
14. US EPA O. Download Daily Data. August 18, 2016. Accessed September 10, 2025. <https://www.epa.gov/outdoor-air-quality-data/download-daily-data>
15. Air quality Guide for Particle Pollution, February 2023, EPA-452/F-23-002. Accessed August 20, 2025. https://www.airnow.gov/sites/default/files/2023-03/air-quality-guide-for-particle-pollution_0.pdf
16. Oregon OSHA. *Key Requirements: Oregon OSHA's Permanent Rules for Protection from Wildfire Smoke.*; 2024. Accessed September 10, 2025. <https://osha.oregon.gov/OSHAPubs/factsheets/fs92.pdf>
17. Cal/OSHA, California S of. Wildfire Smoke Emergency Standard. Accessed August 20, 2025. <https://www.dir.ca.gov/dosh/doshreg/Protection-from-Wildfire-Smoke/Wildfire-smoke-emergency-standard.html>
18. WAC 296-307-098: Accessed August 20, 2025. <https://app.leg.wa.gov/wac/default.aspx?cite=296-307-098>
19. Mendeloff J, Gray WB, Haviland AM, Main R, Xia J. An Evaluation of the California Injury and Illness Prevention Program: (525442012-001). Published online 2012. doi:10.1037/e525442012-001
20. Accidental Release Prevention Requirements: Risk Management Programs Under the Clean Air Act; Safer Communities by Chemical Accident Prevention. Federal Register. August 31, 2022. Accessed August 29, 2025. https://www.federalregister.gov/documents/2022/08/31/2022-18249/accidental-release-prevention-requirements-risk-management-programs-under-the-clean-air-act-safer?utm_source=chatgpt.com
21. Washington State Department of Natural Resources. *Smoke Management Plan.*; 2022.
22. What WA's new wildfire smoke rules might mean for outdoor workers. Cascade PBS. August 2, 2023. Accessed October 8, 2025. <https://www.cascadepbs.org/investigations/2023/08/what-was-new-wildfire-smoke-rules-might-mean-outdoor-workers/>
23. Kerwin Julien, Tracy West, Kat Gregersen. *L&I Wildfire Smoke Rulemaking - Preliminary Cost-Benefit Analysis.*
24. Harwell EL, LePrevost CE, Cofie LE, Lee JGL. Community Health Workers' Role in Addressing Farmworker Health Disparities. *J Agromedicine.* 2022;27(4):391-401. doi:10.1080/1059924X.2022.2040069
25. MHP Salud. Who Are Promotores and Community Health Workers? MHP Salud. Accessed October 21, 2025. <https://mhpsalud.org/programs/who-are-promotores-as-chws/>

26. Parker M, Ybarra-Vega MJ, Postma J. Agricultural Worker Perspectives on Climate Hazards and Risk Reduction Strategies. *J Agromedicine*. 2024;29(3):333-343. doi:10.1080/1059924X.2023.2299378
27. Baker B, Dinh Y, Foxfoot IR, Ortiz E, Sells A, Anderson SE. Social Inequity and Wildfire Response: Identifying Gaps and Interventions in Ventura County, California. *Fire*. 2024;7(2):41. doi:10.3390/fire7020041
28. Herbert N, Beckman C, Cannedy C, et al. Improving adaptation to wildfire smoke and extreme heat in frontline communities: evidence from a community-engaged pilot study in the San Francisco Bay Area. *Environ Res Lett*. 2023;18(7):074026. doi:10.1088/1748-9326/acddf9
29. California Department of Public Health. Wildfire Health Plan Initiative. Accessed October 21, 2025. <https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHIB/CPE>
30. Courtney R. Promotoras Making Healthy Connections. Good Fruit Grower. April 25, 2025. Accessed October 21, 2025. <https://goodfruit.com/promotoras-making-healthy-connections/>
31. Promotora program - King County, Washington. Accessed October 21, 2025. <https://www.kingcounty.gov/en/dept/dph/health-safety/health-centers-programs-services/access-outreach-program/promotora>
32. Community for the Advancement of Family Education. *Environmental Justice Program Newsletter*. CAFE; 2025. https://www.canva.com/design/DAGyBshoF_Y/oXO4NQk-wb0b1by5syx-vg/view?utlId=h95ec56d1cf#1
33. Environmental Justice. Latino Community Fund of Washington. Accessed December 5, 2025. https://www.latinocommunityfund.org/environmental_justice
34. Goldstein A. Community Health Workers Gain Recognition in California. California Health Care Foundation. January 25, 2024. Accessed October 21, 2025. <https://www.chcf.org/resource/community-health-workers-gain-recognition-california/>