

Rivera, Eva

From: 350 Yakima Climate Action <350yakimaclimateaction@gmail.com>
Sent: Wednesday, October 14, 2026 12:41 PM
To: Ask Planning; Preston, Bill; Martin, Trevor
Cc: Ray Paolella; Bob Cox; Felipe Rodriguez-Flores
Subject: Comments on Yakima's draft Comprehensive Plan 2050 by 350 Yakima Climate Action - Part 1 of 2
Attachments: 350 Yakima Comments on Comp Plan 2050 & SEPA Documents.pdf; Overburdened Communities Highly Impacted by Air Pollution.pdf; East Yakima Environmental Justice Report 2025.pdf; ClimateActionPlan_Full_2023.pdf; Award Letter WODT.pdf

Dear Planning Commission,

Attached is a letter from 350 Yakima Climate Action with comments on the City's draft Comprehensive Plan 2050, along with 10 attachments.

NOTE: Due to the length of attachments, we are sending attachments in two separate emails.

Please include these in the public record today.

Thank you,

Coleen Anderson
350 Yakima Climate Action
346 N 24th Avenue
Yakima, WA 98902
360-731-4555

cc: Ray Paolella
Felipe Rodriguez Flores
Bob Cox

--
350 Yakima Climate Action acknowledges we live and work on the ancestral lands of the fourteen Confederated Tribes and Bands of the Yakama Nation. The people of the Yakama Nation inhabited more than 12 million acres across Adams, Benton, Chelan, Douglas, Franklin, Grant, Kittitas, Klickitat, and Yakima Counties. We thank the caretakers of this land who have lived here and continue to live here since time immemorial.

October 13, 2026

City of Yakima Planning Commission
Planning Division
129 N. 2nd Street
Yakima, WA 98901

RE: Yakima Comprehensive Plan 2050 and State Environmental Policy Act (SEPA)

Dear City of Yakima Planning Commission and Planning Division:

City of Yakima's Notice of Public Hearing/Notice of Environmental Review (9/24/2026) requests comments on the: (1) proposed Yakima Comprehensive Plan 2050 and (2) SEPA Environmental Checklist and proposed Determination of Non-Significance (DNS). Please accept these comments from 350 Yakima Climate Action relating to SEPA Review of the GMA-required Climate Resiliency Subelement and the Transportation Element's required Multimodal and Active Transportation provisions since the transportation sector produces about half of all climate-warming greenhouse gas emissions in Washington State. Please include this letter and all the attachments in the October 14, 2026 Public Hearing Record.

Growth Management Act (GMA) Requirements

The City of Yakima must adopt a *resiliency subelement* as part of the City's GMA Comprehensive Plan Update.

The resiliency subelement must equitably enhance resiliency to, and avoid or substantially reduce the adverse impacts of, climate change in human communities and ecological systems through goals, policies, and programs consistent with the best available science and scientifically credible climate projections and impact scenarios that moderate or avoid harm, enhance the resiliency of natural and human systems, and enhance beneficial opportunities. The resiliency subelement must prioritize actions that benefit overburdened communities that will disproportionately suffer from compounding environmental impacts and will be most impacted by natural hazards due to climate change.

Under state law, the resiliency subelement must have specific goals, policies, and programs to:

- (A) Identify, protect, and enhance natural areas to foster resiliency to climate impacts, as well as areas of vital habitat for safe passage and species migration;
- (B) Identify, protect, and enhance community resiliency to climate change impacts, including social, economic, and built environment factors, that support adaptation to climate impacts consistent with environmental justice; and
- (C) Address natural hazards created or aggravated by climate change, including sea level rise, landslides, flooding, drought, heat, smoke, wildfire, and other effects of changes to temperature and precipitation patterns.

According to Department of Commerce Guidance, the City of Yakima can meet GMA's "minimum requirements" by including in the comprehensive plan "*at least one climate resilience policy for each climate-related hazard (e.g., sea level rise and drought) that is relevant to the jurisdiction.*" Washington Department of Commerce, Climate Element Planning Guidance (Growth Management Services, December 2025):

<https://deptofcommerce.app.box.com/s/glw5yo8jvfsd40eoa4kdsx0fzde3s9ji>

State Environmental Policy Act (SEPA) Requirements

Under RCW Chapter 43.21C and WAC Chapter 197-11, the City of Yakima is required to conduct the SEPA process to analyze direct, indirect, and cumulative impacts of Comprehensive Plan Amendments on public safety, public health, the natural environment, and the built environment. SEPA documents must address probable impacts of future project actions allowed/anticipated by the Comprehensive Plan Amendments. If the proposed Comprehensive Plan Amendments may have a probable significant adverse environmental impact, the SEPA Responsible Official must issue a Determination of Significance (DS) and an Environmental Impact Statement is required.

SEPA Environmental Checklist Inadequate

The SEPA Environmental Checklist (Sept. 24, 2026) is woefully inadequate and should be rewritten to bring it into compliance with state law.

The Environmental Checklist fails to mention the required *Resiliency Subelement*.

The Environmental Checklist fails to discuss efforts to equitably enhance resiliency to, and avoid or substantially reduce the adverse impacts of, climate change in human communities and ecological systems through goals, policies, and programs consistent with the best available science and scientifically credible climate projections and impact

scenarios that moderate or avoid harm, enhance the resiliency of natural and human systems.

The Environmental Checklist fails to discuss:

- Overburdened Communities -- RCW 36.70A.030(31)
- Environmental Justice -- RCW 36.70A.030(17)
- Highly Impacted Communities – RCW 19.405.020(22)
- Vulnerable Populations disproportionately impacted by environmental harms -- RCW 36.70A.030(52)
- Vital habitat for safe passage/species migration -- RCW 36.70A.070(9)(e)
- Best Available Science -- RCW 36.70A.070(9)(e)

The Environmental Checklist mentions “climate goals and policies” but does not discuss the application of policies to avoid or substantially reduce the adverse impacts of climate change in highly impacted human communities with vulnerable populations.

Probable Significant Adverse Environmental Impacts

1. Climate Resiliency: East Yakima Overburdened Community Highly Impacted by Air Pollution

The East Yakima Overburdened Community is delineated in the attached “East Yakima Community 2025 Environmental Justice Report” and “2025 Report: Overburdened Communities Highly Impacted by Air Pollution.”

These reports were produced as a collaboration between the State Departments of Health and Ecology, and the reports contain Best Available Science and present scientifically credible climate projections and impact scenarios. Additional Best Available Science and climate impact scenarios are presented in the attached “Climate Action Plan for the City of Yakima (November 2023)” developed by the Sustainable Yakima Committee.

The East Yakima Overburdened Community has the highest estimated number of deaths per population associated with yearly PM 2.5 air pollution exposure in the entire State of Washington: 78 deaths per 100,000 population. The Lower Yakima Valley Overburdened Community Has the next highest estimated number of deaths per population associated with yearly PM 2.5 air pollution exposure: 56 deaths per 100,000 population.

The Environmental Checklist and Draft Comprehensive Plan 2050 contain no discussion of the very significant adverse climate change impacts in Overburdened Communities. The Environmental Checklist and Draft Comprehensive Plan 2050 have

no goals or policies to identify, protect, and enhance resiliency to climate change impacts on Overburdened Communities. There are no goals or policies to address natural hazards created or aggravated by climate change.

2. Climate Resiliency: Climate-Related Drought

Yakima heavily relies on water resources for agricultural activities and water supply for its residents. However, climate change has led to changes in the timing and intensity of precipitation, reducing snowpack in the mountains, altering the natural water flow regime, and affecting the availability of water during the dry season. This results in water scarcity, impacting agricultural productivity and the availability of drinking water. Drought is a serious hazard arising from climate change that could have profound deleterious impacts on the Yakima Valley economy. Changes in temperature and precipitation patterns due to climate change can alter growing seasons and affect crop yields. Warmer temperatures and increased risks of pests and diseases can pose significant challenges to agricultural production.

3. Community Resiliency: Active Transportation

The East Yakima Overburdened Community currently has inadequate access to green space and outdoor recreation on both sides of the Yakima and Naches River riparian corridors, including access to about 100 acres of public recreational lands at the rivers' confluence and William O. Douglas Hillclimb. The proposed multimodal level of service standards compromise public safety goals by allowing shared uses of City streets lanes by motor vehicles, pedestrians, and bicycles without requiring dedicated space/separation for non-motorized active transportation.

4. Determination of Significance

Due to probable, significant adverse climate impacts, the SEPA Responsible Official is required to issue a Determination of Significance. An environmental impact statement must be prepared for the proposed Comprehensive Plan Amendments. Discussions should include significant direct, indirect, and cumulative environmental impacts, significant irrevocable commitments of natural resources, reasonable alternatives including mitigation measures, and significant environmental impacts which cannot be mitigated. RCW 43.21C.030, RCW 43.21C.031.

Suggested Revisions to Yakima Comprehensive Plan 2050

The proposed Comprehensive Plan 2050 has no identifiable *Resiliency Subelement* and fails to discuss efforts to equitably enhance resiliency to, and avoid or substantially reduce the adverse impacts of, climate change in human communities and ecological systems through goals, policies, and programs consistent with the best available

science and scientifically credible climate projections and impact scenarios that moderate or avoid harm, enhance the resiliency of natural and human systems.

The proposed Comprehensive Plan 2050 fails to identify, protect, and enhance community resiliency to climate change impacts, including social, economic, and built environment factors, that support adaptation to climate impacts consistent with environmental justice. The proposed plan does not address potential high-risk landslides where the City proposes to operate and maintain abandoned railroad tracks for public use in Selah Gap. The plan does not have a resilience policy for climate-related drought hazards arising from declining mountain snowpacks that alter the natural water flow regime that City residents and the agricultural economy rely on.

To equitably enhance resiliency to the adverse impacts of climate change in human communities and ecological systems and to avoid worsening localized climate impacts in overburdened communities, the Comprehensive Plan should include specific goals and policies to identify, protect, and enhance resiliency to climate change impacts in human communities and ecological systems and address natural hazards created or aggravated by climate change, as recommended in the “Climate Action Plan for the City of Yakima (November 2023)” developed by the Sustainable Yakima Committee based on Best Available Science (Attached).

The Yakima Greenway and William O. Douglas Trail that serve the residents of the East Yakima Overburdened Community should be completed and maintained to provide Vulnerable Populations with access to green space and outdoor recreation on both sides of the Yakima and Naches River riparian corridors, including access to about 100 acres of public recreational lands at the rivers confluence and William O. Douglas Hillclimb. Safe pedestrian and bicycle connections to the City’s Lower Cowiche Canyon/William O. Douglas Trail should be prioritized for recreational access and commuting by residents in East Yakima. Consistent with evolving state transportation standards to protect public safety, multimodal levels of service in the Transportation Element should be revised to require spatial separation between active transportation and motorized vehicles. Future transportation projects should have dedicated, protected pedestrian, bicycle, and ADA facilities.

Additional specific policies should be considered in the Comprehensive Plan to address Climate Resiliency:

- Solar panels on every public building.
- Work toward transitioning public transportation to electric.
- Require trees be planted with all new development. For example, in San Antonio, Texas, before any development of property a tree application must be submitted. See [Tree Preservation - City of San Antonio](#)

- The City should plant more trees in overburdened communities. See Health Disparities Map at [Environmental Health Disparities \(EHD\) Map](#)
- The City should plant more trees than currently exist along creeks and rivers and especially along salmon streams and riparian areas
- Build/designate cooling/warming centers and make sure the community knows where they are, especially the houseless. See information here: [How to Turn Facilities into Public Cooling Centers During Extreme Heat - Facilities Management Advisor](#)
- Protect and conserve water by putting limits on the amount of irrigation water and restricting specific activities—such as limiting outdoor lawn watering schedules, banning runoff, or adjusting pricing tiers to discourage heavy usage. See what they did in California: [CA adopts mandatory water conservation rules - CalMatters](#)
- Build/designate fresh air centers during poor air quality days and make sure the community knows where they are, especially those highly impacted by air pollution such as outdoor workers, unhoused populations and tribes
- Protect workers from wildfire smoke. See: [Portal for Protection from Wildfire Smoke](#)
- **Use portable air cleaners:** During poor air quality days, deploy portable HEPA air purifiers in rooms where large numbers of people gather if central HVAC upgrades are not immediately possible.
- Frontline communities may live in homes that aren't properly sealed, don't have access to air purifiers, and often cannot afford to stay inside on poor air quality days due to work that exposes them to the poor air quality. We need to be sure they can access clean air spaces.
- All tribes are considered overburdened communities, so these measures should be in all tribal lands.
- Work with community-based organizations to ensure proper training and education on being prepared for poor air quality and how to use a mask. Ensure that outreach is done in a culturally competent and humble way and in each participant's native language. [Read about Emergency Operations Plans and cultural competence.](#)
- Maintain a supply of NIOSH-certified N95 respirator masks to be distributed to underserved and vulnerable community members during times of poor air quality. Ozone levels are increased by chemical reaction on hot days.
- Add poor air quality prevention to your [Hazard Mitigation Plan](#). Create and or develop a response protocol for poor air quality days in partnership with frontline communities.
- Establish more robust communication to let people know about health hazards from poor air quality. For example, if more people knew the health risks of jogging on poor air quality days, they wouldn't do it.
- The Yakima County Health District does not take responsibility for sharing important health messages. The City should encourage robust communication on poor air quality days.

- Create clean air centers in frontline communities. Use spaces that are already common gathering spots.
- Create a free air purifier program to distribute air purifiers to frontline communities, [like this program in the City of Ashland](#).
- Measures should be taken to protect outdoor workers during poor air quality and excessive heat days. Create model laws to protect frontline communities from poor air quality. For example, [The Farmworker Smoke Protection Act of 2019, which requires the Occupational Safety and Health Administration \(OSHA\)](#) to address the exposure of farmworkers to wildfire smoke. OSHA will now require employers to offer protective equipment and offer training on how to use it. This is a good start. However, we need enforcement mechanisms to make sure workers are safe and have ways to take time off if they shouldn't be outside.
- Standards should be adopted to control PM2.5 pollution from industrial dairies and other industrial polluters.
- Farmers should be encouraged to utilize no-till farming practices to keep down the dust from the tilling of fields.
- Adopt measures that will require and help farmers plant cover crops when their fields are fallow. See: [The Scientific Case for Paying Farmers to Use Cover Crops and No-Till - National Farmers Union](#)
- The City should consider adopting standards or controls on industrial dairies' unlimited, unmetered use of water
- Apply for grants from the Dept. of Commerce for money available through the Climate Commitment Act to help pay for these measures. See: [Climate Planning Grants – Washington State Department of Commerce](#)

The public should have documents to inform review of the Comprehensive Plan Update and Proposed Determination of Nonsignificance (DNS). Critical documents such as the Proposed Determination of Nonsignificance (DNS), six appendices and Planning Commission 10/14/2026 agenda are not available online, including the "Climate Vulnerability Assessment Memo" and "Climate Element Summary" which has not been released to the public.

Thank you for your consideration,

Coleen Anderson
 Raymond Paoella
 350 Yakima Climate Action

Attachments:

1. *2025 Report: Overburdened Communities Highly Impacted by Air Pollution* by Washington State Departments of Ecology and Health (December 2025, Ecology Publication 25-02-037):
<https://apps.ecology.wa.gov/publications/summarypages/2502037.html>
2. *East Yakima Community 2025 Environmental Justice Report* (Washington State Departments of Ecology):
<https://apps.ecology.wa.gov/publications/parts/2502037part15.pdf>
3. Climate Action Plan for the City of Yakima (November 2023)" developed by the Sustainable Yakima Committee
4. Yakima Health District BRIC Funding Request
5. Yakima Health District BRIC Award Letter
6. SEPA Environmental Checklist
7. Naches River Bridge ADA ramp up to Landing Wayside
8. Yakama Nation Letter to City of Yakima 12.3.2025
9. Landslide High Risk Info along Railroad Tracks
10. UTC & BNSF Approval of Shared Use Trail in RR ROW



2025 Report: Overburdened Communities Highly Impacted by Air Pollution

Air Quality Program
Washington State Department of Ecology
Olympia, Washington

December 2025, Publication 25-02-037



DEPARTMENT OF
ECOLOGY
State of Washington



Washington State Department of
HEALTH

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Contact Information

Air Quality Program

P.O. Box 47600
Olympia, WA 98504-7600
Phone: 360-480-6800

Website¹: [Washington State Department of Ecology](http://www.ecology.wa.gov)

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¹ <https://ecology.wa.gov/about-us/contact-us>

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	PO Box 47775 Olympia, WA 98504	360-407-6300
Northwest	Island, King, Kitsap, San Juan, Skagit, Snohomish, Whatcom	PO Box 330316 Shoreline, WA 98133	206-594-0000
Central	Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, Yakima	1250 W Alder St Union Gap, WA 98903	509-575-2490
Eastern	Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman	4601 N Monroe Spokane, WA 99205	509-329-3400
Headquarters	Across Washington	PO Box 46700 Olympia, WA 98504	360-407-6000

2025 Report: Overburdened Communities Highly Impacted by Air Pollution

Washington State Department of Ecology
Air Quality Program
Olympia, WA

December 2025 | Publication 25-02-037

Table of Contents

List of Figures and Tables	7
Figures.....	7
Tables	8
Acknowledgements.....	9
Glossary.....	10
Acronyms.....	15
Executive Summary.....	17
Key findings.....	17
Introduction.....	19
Climate commitment act and environmental justice	21
Overburdened communities highly impacted by air pollution	21
Background.....	23
Criteria air pollution.....	23
Health impacts of criteria air pollution	28
Environmental justice and health disparities	29
Greenhouse gas emissions.....	35
Listening sessions.....	39
Methods	40
Demographics and community descriptions	40
Criteria air pollution.....	42
Health impacts	46
Greenhouse gas emissions.....	54
Listening sessions.....	59
Statewide Results	62
Demographic data	62
Criteria air pollution.....	63
Health impacts	74
Greenhouse gas emissions.....	90
Listening sessions.....	95
Discussion.....	98
Criteria air pollution.....	99

Health impacts	100
Greenhouse gas emissions.....	102
Next Steps	103
Appendix A. National Ambient Air Quality Standards	104
Appendix B. Air Quality Index.....	106
Appendix C. Air Quality and Health Eco-Health Relationship.....	107
Appendix D. Health Impacts Supplemental Materials	108
Appendix E. Community Reports	120

List of Figures and Tables

Figures

Figure 1. Statewide map of overburdened communities highly impacted by air pollution.....	22
Figure 2. Prevalence of chronic health conditions in census tracts within overburdened communities highly impacted by air pollution compared with Washington statewide.....	34
Figure 3. Ambient air monitoring sites across Washington.....	43
Figure 4. Flowchart of data inputs included in BenMAP-CE to produce estimates of deaths and morbidities associated with PM _{2.5} and O ₃ concentrations in overburdened communities highly impacted by air pollution.	48
Figure 5. Census tract-level PM _{2.5} concentrations based on the WA-Fuse modeled data during 2022-2023. Wildfire days exceeding 35.4 µg/m ³ have been removed. Annual mean PM _{2.5} NAAQS concentration is 9.0 µg/m ³	52
Figure 6. Census tract-level O ₃ concentrations based on the WA-fuse model during 2022-2023. O ₃ NAAQS concentration is 70 ppb.	53
Figure 7. Statewide greenhouse gas reporting facilities, 2023.....	58
Figure 8. Statewide proportions compared to all census tracts fully or partially identified as overburdened communities highly impacted by air pollution.	63
Figure 9. Unadjusted and adjusted PM _{2.5} associated annual, mortality rates by any cause for all 16 overburdened communities highly impacted by air pollution compared to the statewide average based on the study of Pope et al., 2019, 2022-2023. Bars indicate 95% confidence intervals.	75
Figure 10. Age-adjusted annual death rates by any cause associated with yearly PM _{2.5} exposure among ages 18-84 by racial and ethnic group in all 16 overburdened communities highly impacted by air pollution.	78
Figure 11. Comparison of annual CO ₂ e and biogenic CO ₂ in metric tons (MT) from greenhouse gas reporting facilities that are in and nearby overburdened communities highly impacted by air pollution, 2020-2023.....	92
Figure 12. 2023 greenhouse gas emissions by facility sector within and nearby overburdened communities highly impacted by air pollution.	92
Figure 13. 2023 statewide greenhouse gas emissions by facility sector.	93
Figure 14. Comparison of annual statewide MT CO ₂ e from mobile sources to overburdened communities highly impacted by air pollution between 2019-2021.	94

Tables

Table 1. Number of air monitors included in this report that are representative of air quality in overburdened communities highly impacted by air pollution.	27
Table 2. Summary of criteria air pollutant sources and their health impacts.....	30
Table 3. Data sources of demographic indicators and community descriptions.	40
Table 4. BenMAP-CE input data and sources.	49
Table 5. Average maximum number of days with unhealthy air quality in overburdened communities, 2022-2024. Days impacted by wildfire smoke are included in this calculation.....	64
Table 6. 24-hour PM _{2.5} (98 th percentile) summary statistics and 2024 design values (µg/m ³) in overburdened communities highly impacted by air pollution, 2022-2024. Summary statistics in brackets [] exclude wildfire-impacted days when the average PM _{2.5} concentration exceeded 35.4 µg/m ³ . 24-hour PM _{2.5} (98 th percentile) NAAQS is 35 µg/m ³	67
Table 7. Annual mean PM _{2.5} concentrations and 2024 design values (µg/m ³) in overburdened communities highly impacted by air pollution, 2022–2024. Annual means in brackets [] exclude wildfire-impacted days when the average PM _{2.5} concentration exceeded 15.0 µg/m ³ . Annual PM _{2.5} NAAQS is 9.0 µg/m ³	70
Table 8. Estimated annual deaths by any cause associated with yearly PM _{2.5} exposure among 18–84-year-olds in all 16 overburdened communities highly impacted by air pollution by racial and ethnic group, 2022–2023 (based on effect estimates in study by Pope, et al., 2019).	76
Table 9. Estimated annual deaths by any cause related to yearly PM _{2.5} exposure among 65–99-year-olds in all 16 overburdened communities highly impacted by air pollution by racial and ethnic group, 2022–2023 (based on effect estimates in study by Di, et al., 2017 ²²).	77
Table 10. Estimated annual mortality and morbidity associated with yearly PM _{2.5} exposure (yearly 24-hour average concentrations) in all 16 overburdened communities highly impacted by air pollution, 2022-2023. Brackets [] include 95% confidence interval.....	79
Table 11. Estimated annual mortality and morbidity associated with daily PM _{2.5} exposure (daily 24-hour average concentrations) in all 16 overburdened communities highly impacted by air pollution, 2022-2023. Brackets [] include 95% confidence interval.	83
Table 12. Estimated annual mortality and morbidity associated with seasonal and daily O ₃ exposure (seasonal and daily 8-hour maximum concentrations) in all 16 overburdened communities highly impacted by air pollution, 2022-2023. Brackets [] include 95% confidence interval.....	88
Table 13. Total number of facilities and greenhouse gas emissions reported in 2022 and 2023 in and nearby each overburdened community highly impacted by air pollution. Biogenic CO ₂ is in brackets [].	90
Table 14. Greenhouse gas emissions from mobile sources, 2019-2021.	94

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Authors

Trischa Lohr Barlet (ECY)
Tsfamichael Berhane, PhD (ECY)
Kirsten Dodroe (ECY), Lead Author
Annie Doubleday, PhD (DOH)
Felipe Rodriguez-Flores (DOH)
Randy Stalter, PhD (DOH)
Rongting (Tina) Xu, PhD (ECY)

Reviewers

Anthony Abbott (ECY)
Kristin Art (ECY)
Janice Batchelor (ECY)
Jordyn Bauerlein (ECY)
Courtney Cecale, PhD (ECY)
Sarah Chase (ECY)
Rad Cunningham (DOH)
Rob Dengel (ECY)
Joanna Ekrem (ECY)
Ashley Fent (ECY)
Julie Fox (DOH)
Beth Friedman, PhD (ECY)
Joshua Grice (ECY)
Caroline Halter (ECY)
Martha Hankins (ECY)
Chris Hanlon-Meyer (ECY)

Laura Johnson (DOH)
Matt Kadlec, PhD (ECY)
Kaitlyn Kelly (ECY)
Eli Levitt (ECY)
Sean Lundblad (ECY)
Tyson Oreiro (ECY)
Pah-Tu Pitt (DOH)
Ujwala Ramakrishna (ECY)
Claudine Richardson, PhD (DOH)
Abigail Ruskey (ECY)
Jill Schulte (ECY)
Kathy Taylor (ECY)
Erin Torrone (ECY)
Itzie Trudell (ECY)
Taylor Van Cise (ECY)
Shuang Xia (ECY)

Publication and Communication Support

Miriam Duerr (ECY)
Melanie Forster (ECY)
Eleanor Licata (ECY)

Angie Martinson (ECY)
Evan Robinson (ECY)

Glossary

Air Quality Index (AQI) – Tool designed by the United States Environmental Protection Agency (EPA) for reporting daily local air quality based on five criteria air pollutants: particulate matter, ground-level ozone, sulfur dioxide, carbon monoxide and nitrogen dioxide. The AQI has six color-coded categories that correspond to human health concerns. The higher the AQI value, the greater the concern to air pollution and human health.

Anthropogenic (non-biogenic) carbon – Carbon in the atmosphere that originates from human activities, rather than natural processes.

Attainment/nonattainment – As established by the EPA, if the air quality in a geographic area meets or is cleaner than the national air quality standard, it is called an attainment area (designated “attainment/unclassifiable”); areas that don't meet the national air quality standards are called nonattainment areas.

Asthma – A chronic illness in which airways become inflamed and constricted, causing wheezing, coughing, and difficulty breathing with varying degrees of frequency and severity.

Biogenic carbon – Refers to carbon released from the combustion, decomposition, or processing of materials derived from biological sources such as wood, paper, biomass fuels, agriculture residues, food waste, or biogas. Naturally, carbon is stored in organic matter like trees, plants, grasses, and soil. At the end of its life cycle, organic matter decomposes and over time emits absorbed carbon back into the atmosphere. These emissions can be accelerated by human activities or through deforestation and land-clearing.

Cardiovascular disease – A class of diseases that involve the heart and/or blood vessels (arteries and veins).

Census, United States – A complete enumeration, usually of a population, but also of businesses and commercial establishments, housing, farms, governments, and so forth.

Census block group – Subdivision of a census tract that contains a cluster of census blocks, or between 250 and 550 housing units. Census blocks are the smallest geographic census units and change every decade.

Census tract – Small and relatively stable geographic areas with a population between 2,500 and 8,000.

Chronic obstructive pulmonary disease (COPD) – An umbrella term for a group of respiratory tract diseases characterized by airflow obstruction or limitation. Conditions included are chronic bronchitis, emphysema, and bronchiectasis. Tobacco smoking is the most common cause for COPD; it can also result from exposure to airway irritants such as coal dust or solvents, congenital defects, or unknown causes.

Criteria air pollutants (CAPs) – Six pollutants that can be harmful to human health and the environment with National Ambient Air Quality Standards designated by the EPA. The pollutants are particulate matter (PM), ground-level ozone (O₃), nitrogen dioxide (NO₂), carbon monoxide (CO), lead (Pb), and sulfur dioxide (SO₂).

Daily exposure to PM_{2.5} and O₃ – This refers to the ambient concentration of the pollutant averaged (i.e., 24-hour daily mean for PM_{2.5} or daily maximum 8-hour mean for O₃) over a 24-hour period for a given location, often used in short-term (acute) epidemiological analyses.

Design value – A statistic that describes the air quality status of a given monitor relative to the level of the National Ambient Air Quality Standards (NAAQS), as referenced in eCFR 40 Part 50.²

Diabetes – A condition where blood sugar levels are higher than normal due to the body's inability to use or store blood glucose for energy.

Environmental Benefits Mapping and Analysis Program-Community Edition (BenMAP-CE) – An open-access, analytic software tool developed by the EPA that can be used to estimate morbidity and mortality associated with air pollutant exposure and the economic value of these health outcomes.

Environmental justice – The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, rules, and policies. Environmental justice includes addressing disproportionate environmental and health impacts in all laws, rules, and policies with environmental impacts by prioritizing vulnerable populations and overburdened communities, the equitable distribution of resources and benefits, and eliminating harm (from RCW 70A.02.010(8)).

Environmental Protection Agency (EPA), United States – An independent agency of the United States government tasked with environmental protection matters. The EPA delegates some regulatory responsibility to U.S. states and federally recognized Tribes, and sponsors partnerships with businesses, non-profit organizations, and local governments.

Federal Equivalent Methods (FEM) – A method for measuring outdoor criteria air pollutants that the EPA has designated as equivalent to a Federal Reference Method (FRM). FEMs are alternative, often more automated, systems that have been tested and approved to be as accurate and consistent as FRMs, allowing them to be used for monitoring air quality in compliance with the federal Clean Air Act.

Federal Reference Methods (FRM) – Specific, scientifically defensible methods for measuring outdoor air pollutants that are designated by the EPA to ensure accurate and consistent air quality data collection across different locations. They serve as the "gold standard" for

² Code of Federal Regulations- [eCFR :: 40 CFR Part 50 -- National Primary and Secondary Ambient Air Quality Standards](https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-50).

monitoring, against which other methods, called Federal Equivalent Methods (FEMs), are compared and evaluated. FRMs are published in the Code of Federal Regulations, under 40 CFR Part 50.

Geographic Information System (GIS) – A technology used to create, manage, analyze, and map all types of data, drawing connections spatially and communicating complex information.

Ground-level ozone (O₃) – Ozone is gas that is a harmful air pollutant at ground-level because of its effect on human health and the environment.

Hispanic – The Washington State Office of Financial Management (OFM) bases race and ethnicity categories on federal standards that define "Hispanic or Latino" as a person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin regardless of race.

Ischemic heart disease – Heart disease caused by narrowed coronary arteries, resulting in reduced blood supply to the heart. When blood flow to the heart is blocked completely, this results in a heart attack (myocardial infarction). Exposure to air pollution can contribute to the development of ischemic heart disease and increase the risk of cardiovascular events in people with heart ischemic heart disease.

Listening session (LS)- Facilitated group conversations with those who work, live, or spend time in overburdened communities highly impacted by air pollution. Participants were asked about their experiences with air quality and health.

Lived experience compensation (LEC) – Compensation of eligible community members who participate on an Ecology workgroup, as authorized by RCW 43.03.220 and the Office of Equity Community Compensation Guidelines. Ecology refers to compensation under this authority as "lived experience compensation" instead of "community compensation" to differentiate lived experience compensation from other ways the agency may seek to compensate communities, such as by awarding grants to community-based organizations.

Local Clean Air Agencies (LCAAs) – There are seven local clean air agencies, also known as local air pollution control authorities, that manage air quality for certain counties in Washington. The Washington Department of Ecology manages air quality for counties that do not have a local clean air agency.

Local health jurisdictions (LHJs) – Local government entities, including 30 county health departments, three multi-county health districts, and two city-county health departments, that carry out public health functions in Washington.

Long-term exposure – Continuous inhalation of polluted air over an extended period, typically several months to years. This exposure can occur in various environments. The health effects of long-term exposure can accumulate over time, leading to serious health issues such as chronic respiratory and cardiovascular diseases.

Lung cancer – Cancer that begins in the cells of the lungs. Exposure to air pollution may increase risk of mortality in people with lung cancer.

Major point sources – Industrial, commercial, or institutional stationary sources with the potential to emit 100 tons per year or more of any one criteria pollutant or a combination of criteria pollutants.

Mortality – The number of estimated deaths (from a disease or in general), typically reported on an annual basis.

National Ambient Air Quality Standards (NAAQS) – Regulations set by the EPA to protect public health and the environment from harmful air pollutants. The EPA sets standards for six "criteria" pollutants: ozone, particulate matter, lead, carbon monoxide, nitrogen dioxide, and sulfur dioxide. There are two types of NAAQS: primary standards to protect public health, including sensitive populations like children and the elderly, and secondary standards to protect public welfare, covering things like visibility, crops, and buildings.

National Emissions Inventory (NEI) – A database of estimated emissions of criteria air pollutants, their precursors, and hazardous air pollutants estimated from air emission sources. The NEI is updated every three years using data provided to EPA by state, local and Tribal air agencies.

On-road vehicle emissions – These emissions are generated by operating vehicles on public roadways.

Overburdened community (OBC) – A geographic area where vulnerable populations face combined, multiple environmental harms and health impacts or risks due to exposure to environmental pollutants or contaminants through multiple pathways, which may result in significant disparate adverse health outcomes or effects (RCW 70A.65.010(54)).

Overburdened community highly impacted by air pollution (OBC) – Areas of Washington identified where people who are vulnerable to health, social, and environmental inequities are also highly impacted by criteria air pollution, as referenced in the Ecology Policy Statement: Identification of Overburdened Communities Highly Impacted by Air Pollution.

Particulate matter (particle pollution) – Small inhalable particles of solids or liquids (including dust dirt, soot, and smoke) in the air that can harm human health. PM₁₀ is particulate matter less than 10 microns in diameter. PM_{2.5} is particulate matter less than 2.5 microns in diameter and is often referred to as fine particulate matter.

People of color – Individuals who self-report a race other than white alone and/or list their ethnicity as Hispanic or Latino. That is, all people other than non-Hispanic white individuals.

Respiratory disease – A type of disease that affects the lungs and other parts of the respiratory system. Some risk factors include infection, tobacco smoke, occupational chemicals and dust, and other forms of air pollution. Some of the most common respiratory diseases include

asthma, chronic obstructive pulmonary disease (COPD), pulmonary fibrosis, pneumonia, and lung cancer.

Seasonal exposure to ozone (O₃) – The average O₃ concentration across a defined season or multi-month period. In this report, we focus on Washington's warm season of May–September. This is when ozone levels are highest as warm temperatures and intense sunlight are needed for its formation.

SensWA – A portable sensor device built by Ecology to provide real-time air quality information about fine particle pollution. Data collected from SensWA devices are used to calculate the Air Quality Index (AQI), which is displayed on Washington's Air Quality Map.

Short-term exposure – The period when individuals are affected by air pollution, typically lasting from a few days to weeks. This exposure can lead to various health effects, including respiratory issues, eye and throat irritation, and make pre-existing conditions, such as asthma, worse.

Stroke – The sudden impairment of brain function caused when a part of the brain experiences either bleeding or a major reduction in blood flow.

Unhealthy for Sensitive Groups (USG) – A range of the air quality index (AQI) that includes certain groups of people that have an increased risk due to medical or exposure conditions, or who are innately susceptible and may experience health effects when engaged in outdoor activities during periods of elevated air pollution. For particle pollution, the sensitive groups include people with heart and lung disease, older adults, children, people with diabetes and people with lower incomes.

Vehicle Miles Traveled (VMT) – The total number of miles traveled by a vehicle within a specific time. It is used as a metric to measure travel demand and usage over a geographic area, such as a county or state, and to assess highway performance and traffic patterns.

Wildfire smoke – A complex mixture of gases and compounds released when a wildfire burns. The composition and toxicity vary depending on the wildfire environment. Wildfire smoke is the largest source of particle pollution impacting human health in Washington.

X,Y coordinates – A pair of values that represents the distance from an origin (0,0) along two axes, a horizontal axis (x), and a vertical axis (y). On a map, x, y coordinates are used to represent features at the location they are found on the earth's surface.

Yearly exposure to PM_{2.5} – The average concentration of the pollutant over an entire calendar year (or 12-month period) at a location (or population-weighted across locations) and is typically used for chronic-exposure assessments.

Acronyms

ACS – American Community Survey
AIAN – American Indian and Alaska Native
AQI – Air Quality Index
BENMAP-CE – Benefits Mapping and Analysis Program, Community Edition
CAP – Criteria air pollutant
CCA – Climate Commitment Act
CH₄ – Methane
CHARS – Comprehensive Hospital Abstract Reporting System
CHS – Center for Health Statistics
CI – Confidence interval
C-LINE – Community LINE source model
CO – Carbon monoxide
CO₂ – Carbon dioxide
COPD – Chronic obstructive pulmonary disease
CRF – Concentration response function
DNC – Data not collected
EPA – United States Environmental Protection Agency
ED – Emergency Department
GIS – Geographic Information System
MI – Myocardial infarction
NAAQS – National Ambient Air Quality Standard
NEI – National Emissions Inventory
NHOPI – Native Hawaiian and Other Pacific Islander
N₂O – Nitrous oxide
NO₂ – Nitrogen dioxide
NW-AIRQUEST – Northwest-International Air Quality Environmental Science and Technology Consortium
O₃ – Ozone
OBC – Overburdened community highly impacted by air pollution
OFM – Washington State Office of Financial Management
Pb – Lead
PM – Particulate matter
RHINO – Rapid Health Information Network
SO₂ – Sulfur dioxide
VOC – Volatile organic compound
WSCR – Washington State Cancer Registry

Units of measurement:

ppb – parts per billion
ppm – parts per million

MT CO₂e – metric tons of carbon dioxide equivalent (using carbon dioxide equivalent as a measurement captures the cumulative impacts of all greenhouse gases in a single number)

µg/m³ – micrograms per cubic meter

TPY – tons per year

Executive Summary

The Washington Department of Ecology is responsible for implementing the environmental justice (EJ) provisions of the 2021 Climate Commitment Act (CCA), Washington's landmark climate policy. Ecology is leading the initiative to improve air quality in communities identified as overburdened and highly impacted by criteria air pollution by expanding the air monitoring network, reducing emissions, issuing grants, and conducting rulemaking. The CCA requires Ecology to report criteria air pollution levels and greenhouse gas emissions in Washington.

Ecology and the Washington State Department of Health partnered to produce this report. Following the first two-year EJ report, *Improving Air Quality in Overburdened Communities Highly Impacted by Air Pollution*, published in 2023, this report provides information about criteria air pollutant concentrations and their health impacts, as well as greenhouse gas emissions in 16 overburdened communities highly impacted by criteria air pollution in Washington. These 16 communities include 1.37 million Washingtonians living in rural, urban, and suburban areas.

Key findings

Air pollution

- Between 2022 and 2024, overburdened communities highly impacted by criteria air pollution experienced an average of 2.9 days per year (range 0-8.3 days per year) when air quality was at the level considered “unhealthy for sensitive groups” or worse (101+ AQI).
 - Compared to the 2020-2022 period, this is a marked decrease from an average of 7.5 days per year (range 4.3-12 days per year) of air quality that was unhealthy for sensitive groups or worse.
- Most days of air quality that were unhealthy for sensitive groups or worse occurred during wildfire smoke events.
- On average, PM_{2.5} concentrations decreased from 2022 to 2024. This may be partly because Washington had less impact from wildfire smoke in 2023 and 2024. All 2024 design values were below the established federal 24-hour standards for PM_{2.5}, except for data from one monitor in the Wenatchee and East Wenatchee community.
- When wildfire smoke days were excluded, annual PM_{2.5} average concentrations declined by 8–15%. This highlights the impact of wildfire smoke on PM_{2.5} pollution concentrations. Communities in Western Washington were generally less impacted by wildfire smoke than those in Eastern and Central Washington, although wildfire smoke impacted Western Washington in 2022.
- Data from newly established PM_{2.5} monitors and sensors in overburdened communities show relatively low daily PM_{2.5} concentrations in 2024.

- Criteria air pollutants (including PM₁₀, ozone, nitrogen dioxide, sulfur dioxide, and carbon monoxide) that were monitored within overburdened community boundaries met the National Ambient Air Quality Standards (NAAQS).

Health impacts

- According to 2022 Center for Disease Control (CDC) survey data, the 16 communities identified as overburdened and highly impacted by criteria air pollution in Washington have higher levels of chronic diseases (such as asthma, cardiovascular disease, COPD, diabetes, and stroke) compared to the statewide population (Figure 2). Specific overburdened communities show greater disparities between state and community-level prevalence rates.
- The health impacts analysis focuses on exposure to PM_{2.5} and ozone, the criteria air pollutants most likely to affect people's health. While all of Washington meets federal air quality standards for particulate matter and ozone pollution, estimated health impacts of these pollutants were still identified in this report.
- In our statistical models, yearly PM_{2.5} exposure in the 16 overburdened communities was associated with an estimated 430 deaths by any cause among adults ages 18-84 and 261 deaths among older adults ages 65-99. Across overburdened communities, 18--84-year-olds with the highest estimated rates of deaths by any cause associated with PM_{2.5} exposure live in East Yakima, Lower Yakima Valley, and Spokane and Spokane Valley.
- The highest estimated rates of deaths by any cause in overburdened communities were among Hispanic people and non-Hispanic Black people ages 18-84 after accounting for differences in ages across racial and ethnic groups.
- According to our models, PM_{2.5} exposure was also associated with non-fatal health events such as hospitalizations for respiratory and cardiovascular conditions, asthma-related emergency department visits, and lung cancer diagnoses. Ozone exposure was also associated with non-fatal health events, including asthma emergency department visits and cardiovascular and respiratory hospital admissions.
- Within the 16 overburdened communities, seasonal ozone exposure (see glossary) was associated with an estimated 35 deaths by any cause per year and daily ozone exposure was associated with 2 deaths by any cause per year. The overburdened communities with the highest rates of deaths by any cause associated with ozone exposure among 65--99-year-olds were Spokane and Spokane Valley, Tri-Cities to Wallula, and East Yakima.
- For both yearly and daily PM_{2.5} and ozone exposure, unadjusted and age-adjusted rates of all health conditions were higher in the 16 overburdened communities compared to statewide, with some rates up to 2 times higher than statewide rates.

Greenhouse gas emissions

- From 2020 to 2023, we have seen an overall decrease of 20.3% total reported greenhouse gas emissions from facilities in or nearby overburdened communities highly impacted by air pollution.

- There are 49 greenhouse gas facilities that report their emissions located in overburdened communities highly impacted by air pollution and 22 are covered under the Climate Commitment Act. The number of facilities in some of these communities has changed due to closures, and new or voluntary reporting.
- From 2019 to 2021, greenhouse gas emissions from mobile sources (like cars, trucks, and locomotives) in overburdened communities highly impacted by air pollution decreased by 5.4% metric tons of carbon dioxide equivalent (MT CO₂e).
- The Climate Commitment Act provides a dedicated funding source to help a variety of programs across state agencies serving the most vulnerable communities prepare for and cope with the impacts of climate change. In the 2023-2025 biennium, nearly 60% (about \$850 million) of Climate Commitment Act investments benefited these communities, exceeding the law's 35% requirement.³
- The Cap-and-Invest Program is in the middle of its first compliance period which runs from 2023-2026. Data collection on the program's impact to overburdened communities highly impacted by air pollution is ongoing and information on emissions reductions will be available in future reports. So far, 99.9% of participating entities are in compliance with the program.

Introduction

This publication, the *2025 Environmental Justice Report: Overburdened Communities Highly Impacted by Air Pollution* (EJ Report), was written in accordance with the 70A.65.020(2)(a)⁴ provision of the CCA, which directs Ecology:

“Beginning in 2023, and every two years thereafter, the department must conduct a review to determine levels of criteria pollutants, as well as greenhouse gas emissions, in the overburdened communities identified under subsection (1) of this section. This review must also include an evaluation of initial and subsequent health impacts related to criteria pollution in overburdened communities. The department may conduct this evaluation jointly with the Department of Health.”

In 2023, Ecology published the first biennial EJ Report in collaboration with the Department of Health (DOH). This baseline report published levels of criteria air pollutants and their health impacts, as well as greenhouse gas emissions, in each of the 16 communities identified as overburdened and highly impacted by air pollution (OBCs). The 2025 EJ Report expands the collaboration between DOH and Ecology, as DOH greatly contributed to the analysis and writing of the Health Impacts, Listening Sessions, and Demographics sections of this report.

³ Report to the Legislature: Climate Commitment Act Investments Fiscal Year 2025

<https://apps.ecology.wa.gov/publications/SummaryPages/2514107.html>

⁴ Environmental Justice Review, RCW 70A.65.020 <https://app.leg.wa.gov/RCW/default.aspx?cite=70A.65.020>

In Ecology's 2023 EJ Report, we highlighted the need to conduct outreach and engagement in OBCs, expand the Washington Ambient Air Monitoring Network (Washington Network), and work with Tribal and community partners to identify ways to expand our research methods and analysis.

The 2025 EJ Report expands the 2023 baseline report in the following ways:

Listening sessions: The Department of Ecology and Department of Health jointly conducted four pilot listening sessions with staff from Washington's local health jurisdictions and with residents of the South Seattle and Lower Yakima Valley communities. The information gathered through these sessions shaped the format and informed the content of this report and will help guide the development of future biennial EJ Reports.

Community Reports: In response to community input, we published community-specific results and information in separate documents related to this report. The goal of the individual publications is to help present relevant information about each specific community in an organized and accessible way. This document provides more detailed information about the background, methods, and additional results that are not included in the individual Community Reports.

Health Impacts Analysis: The 2025 EJ Report expands the health analysis to include the impacts of short-term (daily) exposure to PM_{2.5} and seasonal exposure to O₃, the CAPs with the greatest potential impact on population health in Washington.^{5, 6, 7} We include deaths (mortalities) associated with respiratory disease, ischemic heart disease, and cardiovascular disease associated with PM_{2.5} exposure for OBCs. Additionally, we analyze illness (morbidity) related to PM_{2.5} and O₃ exposure, including hospitalizations and emergency department (ED) visits for cardiovascular and respiratory conditions and lung cancer diagnoses.

Tribal Partnership: The Department of Ecology has initiated Government-to-Government relationships with Tribes identified as potentially highly impacted by air pollution. Four of the seven identified Tribes have signed MOUs with Ecology to increase CAP monitoring, reduce the impact of air pollution, and expand the EJ Report to provide information about air quality and health on Tribal land. Ecology is partnering with the Department of Health and Tribes to ensure the 2027 EJ Report is published consistently with each Tribe's protocols for data sharing and usage.

⁵ WA Department of Ecology, Air quality studies <https://ecology.wa.gov/research-data/scientific-reports/air-quality-studies>

⁶ WA State Department of Ecology, Air quality standards <https://ecology.wa.gov/air-climate/air-quality/air-quality-targets/air-quality-standards>

⁷ WA State Department of Ecology, Areas meeting and not meeting air standards <https://ecology.wa.gov/regulations-permits/plans-policies/areas-meeting-and-not-meeting-air-standards>

Monitoring Data: Since the publication of the 2023 EJ Report, Ecology has installed 52 new monitors and sensors in the 16 OBCs, and 50 with Climate Commitment Act funds. There is now at least one PM_{2.5} monitor or sensor in each of the identified communities, which improves the accuracy of our reporting. This report includes PM_{2.5} data from monitors and sensors in each of the 16 communities.

Climate commitment act and environmental justice

The Climate Commitment Act (CCA) is Washington’s only economy-wide climate policy that works to cap and reduce greenhouse gas emissions from Washington’s largest emitting sources and industries. The CCA also prioritizes the improvement of air quality in Washington with environmental justice in mind. Under the CCA, the state legislature directed the Department of Ecology to reduce criteria air pollution in communities and participating Tribal lands that are highly impacted by air pollution and are historically overburdened with health, social, and environmental inequities and.

RCW 70A.65.005 Outlines some of the findings and intent of the CCA:

“(3) The legislature further finds that while climate change is a global problem, there are communities that have historically borne the disproportionate impacts of environmental burdens and that now bear the disproportionate negative impacts of climate change. Although the state has done significant work in the past to highlight these environmental health disparities, beginning with senator Rosa Franklin's environmental equity study, and continuing through the work of the governor's interagency council on health disparities, the creation of the Washington environmental health disparities map, and recommendations of the Environmental Justice task force, the state can do much more to ensure that state programs address environmental equity.

Overburdened communities highly impacted by air pollution

The “Improving Air Quality in Overburdened Communities Initiative” is an ongoing environmental justice effort led by the Department of Ecology that strives to reduce air pollution in Washington overburdened communities and Tribes highly impacted by air pollution.

Washington’s overburdened communities highly impacted by air pollution (OBCs) were identified by Ecology in 2023. These 16 communities were identified using the Environmental Health Disparities map,⁸ EJ Screen Demographic Index,⁹ and a combination of the Washington Network, modeling, and emissions data. The community boundaries were finalized following a

⁸ Washington Tracking Network, a source for environmental public health data, Department of Health
<https://fortress.wa.gov/doh/wtnibl/WTNIBL/>

⁹ Environmental Justice Screening and Mapping Tool (EJScreen)
https://19january2021snapshot.epa.gov/ejscreen/environmental-justice-indexes-ejscreen_.html

public comment and engagement process. The OBCs include 1.37 million people, approximately 17.8% of Washington's 2024 population.¹⁰



Figure 1. Statewide map of overburdened communities highly impacted by air pollution.

In 2023, Ecology also identified seven Tribal reservations that are impacted by elevated levels of CAPs. As of December 2025, four Tribes have signed Memoranda of Understanding with Ecology to build long-term partnerships to monitor air quality, access grant resources, and as requested, report on greenhouse gases, CAPs, and their related health impacts. These Tribes include the Confederated Tribes and Bands of the Yakama Nation, Confederated Tribes of the Colville Reservation, Nooksack Indian Tribe, and Tulalip Tribes.

Ecology will re-identify overburdened communities and the Tribes highly impacted by air pollution every six years following a public engagement process. In 2029, we will utilize public input, current sociodemographic data, and air pollution data to reassess the boundaries of OBCs.

More information about the 2023 identification process can be found in the [Overburdened Communities Highly Impacted by Air Pollution StoryMap](#)¹¹ and the [Identifying Overburdened Communities Highly Impacted by Air Pollution: Technical Support Document](#).¹²

¹⁰ Washington Census Bureau Profile <https://data.census.gov/profile/Washington?g=040XX00US53>

¹¹ Overburdened Communities Highly Impacted by Air Pollution StoryMap <https://storymaps.arcgis.com/stories/c10bdbfc69984a9d85346be1a23f6338>

¹² Identifying Overburdened Communities Highly Impacted by Air Pollution: Technical Support Document <https://apps.ecology.wa.gov/publications/SummaryPages/2302019.html>

Background

Criteria air pollution

Criteria air pollutants (CAPs) are a class of common air pollutants that impact human and environmental health. The federal Clean Air Act requires the Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards (NAAQS) for six criteria air pollutants (Appendix A). The primary NAAQS are set to protect human health. The secondary NAAQS are set to protect the environment, property, agriculture, and animals. Washington is in attainment with the NAAQS, or below the limit, for all CAPs.

The criteria air pollutants are:

- [Particulate matter](#)
 - Fine particulate matter (PM_{2.5})
 - Coarse particulate matter (PM₁₀)
- [Ozone \(O₃\)](#)
- [Nitrogen dioxide \(NO₂\)](#)
- [Sulfur dioxide \(SO₂\)](#)
- [Carbon monoxide \(CO\)](#)
- [Lead \(Pb\)](#)

In Washington's overburdened communities highly impacted by air pollution (OBCs), PM_{2.5} is the most frequently elevated criteria air pollutant. Wildfires are the dominant source of PM_{2.5} emissions statewide, contributing approximately 44,832 tons per year (TPY).¹³ The impact of wildfire smoke on ambient PM_{2.5} concentrations varies year-to-year and can include smoke transported from fires burning outside of Washington.

Residential woodsmoke from home heating, primarily emitted during the colder months, accounts for approximately 17,438 TPY of PM_{2.5} emissions. Agriculture activities, such as tilling and harvesting, contribute an additional 14,895 TPY of PM_{2.5} emissions.

Dust from tilling, harvesting, and livestock contributes to PM_{2.5} and PM₁₀ pollution. Spikes in PM₁₀ are usually due to wind-blown dust, which is not included in the Washington Comprehensive Emissions Inventory. Other sources of PM₁₀ pollution include paved and unpaved roadway dust and construction dust.

¹³ WA Department of Ecology, 2020 Washington Comprehensive Emissions Inventory Technical Support Document
<https://apps.ecology.wa.gov/publications/SummaryPages/2002012.html>

Ground-level ozone (O₃) forms when volatile organic compounds (VOCs) and nitrogen oxides (NO_x) react with sunlight and warm temperatures.¹⁴ In Washington, the largest sources of VOC emissions are natural emissions from soil and vegetation (approximately 214,163 TPY), wildfires (121,121 TPY), and industrial, commercial, and consumer solvent use (approximately 69,076 TPY).¹⁵ The highest O₃ concentrations typically occur downwind of urban areas and increase when sunlight is strongest and temperatures are higher. The EPA designates Washington's "ozone season" as May through September, when O₃ concentrations are generally highest.¹⁶

On-road vehicles are the largest source of nitrogen oxides (NO_x) pollution, contributing approximately 60,029 tons per year (TPY).¹⁷ The highest NO_x concentrations occur near busy roadways, especially in the Seattle and Tacoma metropolitan areas. Major point sources – such as power plants, paper mills, and oil refineries – contribute an estimated 22,934 TPY, while non-road mobile equipment (16,615 TPY), railroads (13,629 TPY), and commercial marine vessels (13,549 TPY) also account for NO_x pollution. Across Washington, ambient NO₂ concentrations generally remain below the NAAQS in Washington, including at monitoring sites located near high-traffic highways. Although current NO₂ levels meet the standard, NO_x emissions contribute to the formation of other pollution like O₃ and PM_{2.5}.

SO₂, Pb, and CO concentrations in OBCs are in attainment with the NAAQS in Washington. In recent decades, measures to improve air pollution and closures of major contributing facilities have greatly reduced SO₂ and CO air pollution levels across Washington. All of Washington's counties are in attainment¹⁸ with the NAAQS for SO₂, however, major point sources contribute approximately 7,438 tons/year of SO₂ pollution. Wildfires contribute to SO₂ pollution, but Ecology does not approximate their contribution. Wildfires are the primary source of CO pollution in Washington (approx. 512,337 tons/year). Other contributors include on-road (approx. 330,309 tons/year) and non-road (approx. 224,050 tons/year) mobile sources. Pb emissions are calculated by the EPA for aircrafts that use leaded fuel. Facilities report Pb emissions independently to their permitting agencies.

¹⁴ WA Department of Ecology, Ozone pollution <https://ecology.wa.gov/air-climate/air-quality/air-quality-targets/air-quality-standards/ozone-pollution>

¹⁵ WA Department of Ecology, 2020 Washington Comprehensive Emissions Inventory Technical Support Document <https://apps.ecology.wa.gov/publications/SummaryPages/2002012.html>

¹⁶ U.S. EPA, AQS Reference Table, Ozone Seasons https://aqs.epa.gov/aqsweb/documents/codetables/ozone_seasons.html

¹⁷ WA Department of Ecology, 2020 Washington Comprehensive Emissions Inventory Technical Support Document <https://apps.ecology.wa.gov/publications/SummaryPages/2002012.html>

¹⁸ WA Department of Ecology, Determining if areas in Washington meet NAAQS <https://ecology.wa.gov/regulations-permits/plans-policies/areas-meeting-and-not-meeting-air-standards>

Wildfire smoke

Wildfire smoke is the greatest source of air pollution in Washington.¹⁹ The majority of wildfires are caused by humans²⁰, and human-caused climate change increases the frequency and scale of wildfires. The Department of Ecology forecasts smoke levels and partners with other governmental agencies to share information about wildfire smoke impacts within Washington.²¹ However, wildfire smoke is not within the Department of Ecology's regulatory authority.

This report includes annual and daily PM_{2.5} summary statistics calculated with and without wildfire smoke days to show the relative impact of wildfires on air quality for a 3-year period, 2022-2024.

The 2023 wildfire smoke season was largely impacted by fires in Canada and the Cascades. Following a heat wave in May, Canada experienced many wildfires that burned more than 45 million acres, which transported smoke into Washington and other parts of the United States.

In 2024, wildfires that impacted Washington were ignited both by lightning and humans. The Retreat, Mission Road, and Pioneer fires were caused by humans, with the greatest smoke impacts experienced in Central and Eastern Washington. Wildfires in Canada and Oregon did not significantly contribute to PM_{2.5} pollution in Washington.

Air monitoring

The Washington Network monitors air quality conditions for all six CAPs and includes monitors operated by Ecology, local clean air agencies (LCAAs), Tribal Nations, and the National Park Service. The Washington Network is designed to provide timely pollution data to the public, support compliance with the National Ambient Air Quality Standards (NAAQS), inform pollution control strategies, and support air pollution research. With the exclusion of the Spokane-Augusta Ave air monitoring site, this report uses 2022-2024 quality-assured data from the Washington Network to ensure accuracy and reliability.

When sites are selected for air monitors and sensors, Ecology's scientific experts consider meteorology, topography, geography, population impacts, emissions information, existing monitoring data, and proximity to pollution sources. In addition, each monitoring location is placed to meet criteria established by Ecology and EPA that ensures that pollution levels within and between communities around the state can be compared. This comparability maximizes understanding of how levels of ambient air pollution varies at the local level, across the state,

¹⁹ WA Department of Ecology, Wildfire smoke information and map <https://ecology.wa.gov/air-climate/air-quality/smoke-fire/wildfire-smoke>

²⁰ Boegelsack N, Withey J, O'Sullivan G, McMartin D. A critical examination of the relationship between wildfires and climate change with consideration of the human impact. *Journal of Environmental Protection*. 2018 May 8;9(5):461-7.

²¹ Washington Smoke Blog <https://wasmoke.blogspot.com/>

and how Washington compares to other states around the country. The network of monitors in each OBC is tailored to the pollutants known or expected to be elevated in that community:

- **PM_{2.5}:** Since PM_{2.5} is considered the primary CAP of concern in Washington due to routinely elevated concentrations and widespread population impacts, PM_{2.5} is measured in every OBC. Residential wood combustion is the largest anthropogenic source of PM_{2.5} in Washington, and concentrations of PM_{2.5} can vary between neighborhoods at a relatively fine scale. The network of PM_{2.5} monitors and sensors in OBCs can be dense in order to capture this neighborhood-scale²² variation, with larger OBCs containing up to 12 PM_{2.5} monitors and sensors.
- **PM₁₀:** The largest sources of PM₁₀ are dust from agricultural tilling and harvesting, roads, and construction. Ecology prioritizes PM₁₀ monitoring in communities where significant dust sources impact ambient PM₁₀ concentrations.
- **O₃:** Ground-level ozone is considered a regional pollutant, with monitoring sites representing conditions across broader urban areas and regions. In many cases, ozone monitors are located outside of OBCs because the highest concentrations of ozone are typically found downwind of urban areas. Ecology considers data from these monitors to be representative of the highest concentrations expected in their broader urban areas.
- **NO₂ and CO:** On-road vehicles are the largest anthropogenic source of NO₂ and CO. These pollutants are primarily measured at near-road monitoring sites where concentrations are understood to be the highest in the state. Even at monitoring sites adjacent to the highest-traffic freeways in Washington, concentrations of these pollutants rarely exceed the “Good” range of EPA’s AQI as a result of increasingly stringent federal tailpipe emissions standards. Monitoring is not widely conducted outside the near-road environment because past air monitoring has demonstrated that concentrations are well below federal standards away from dominant sources.
- **SO₂ and Pb:** Monitoring for SO₂ and Pb is not widely conducted because emissions of these pollutants in Washington have declined markedly over the past several decades. In the absence of large industrial sources of these pollutants in Washington, the remaining Pb and SO₂ monitors in the Washington Network typically record near-background levels.

With funds from the CCA, Ecology and LCAAs have added 50 monitors (including sensors) to the Washington Network since 2023, with at least one PM_{2.5} monitor now located in each OBC. Of the newly installed monitors, there are 47 PM_{2.5} monitors, two PM₁₀ monitors, and one NO_x monitor. At least one additional PM_{2.5} monitor is scheduled to be installed by early 2026 in the South and East Tacoma community. Three PM_{2.5} monitors are outside of the OBCs (Royal City, Spokane-Thurston Ave, and Seattle-Linden Ave N) and were installed to understand regional transport of PM_{2.5} pollution. Additionally, one monitor was recently installed in the South and

²² Network Design Criteria for Ambient Air Quality Monitoring, 40 C.F.R. Part 58, Appendix D (2025)
<https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-58/appendix-Appendix%20D%20to%20Part%2058>

East Tacoma community (Tacoma-S Adams St) and one in the South Seattle community (SeaTac-Sunset Park) that were not funded by the CCA but are in OBCs.

Data from sixty-three CAPs monitors and sensors installed either prior to the CCA or before November 2024 are included in this report (Table 1). Three PM_{2.5} monitors included are within 500 meters of the community boundaries (Spokane-E Wellesley Ave, Ellensburg-N Cora St, and Wenatchee 8th St NE), and are representative of air quality in the adjacent OBCs. We also include one PM_{2.5} monitor 700 meters from the Wenatchee and East Wenatchee boundary, as it is representative of the community's air quality. In addition, four O₃ monitors located outside OBC boundaries are included based on Ecology's determination that they reflect O₃ levels within the communities (Table 1).

Table 1. Number of air monitors included in this report that are representative of air quality in overburdened communities highly impacted by air pollution.

Community	PM _{2.5}	PM ₁₀	O ₃	NO ₂	SO ₂	CO
Spokane and Spokane Valley	12	2	1*			
Tri-cities to Wallula	3	2	1*			
East Yakima	1 (4)	1				
Lower Yakima Valley	2 (3)					
Moxee Valley	1					
Mattawa	1					
George and West Grant County	1					
Ellensburg	4					
Wenatchee and East Wenatchee	3					
Everett	1 (2)	1				
North Seattle and Shoreline	2					
South Seattle	8 (3)	2	1	2 (1)	1	2
South King County	2 (3)					
Northeast Puyallup	1					
South and East Tacoma	2 (1)			1		
Vancouver	1 (5)		1*			
Total	45 (21)	8	4	3 (1)	1	2

* = O₃ monitor located outside community boundaries

() = Monitors installed after November 2024, not included

Health impacts of criteria air pollution

Exposure to criteria air pollution can cause both acute and chronic adverse health impacts (Table 2). Generally, risk of health impacts increases as exposure to the air pollutants increases, and people who are more sensitive are more likely to have adverse health impacts at lower exposure levels than others. PM, NO₂, SO₂ and O₃ are associated with inflammation of the respiratory system, with short-term exposures that can lead to acute responses of irritation, like cough and sore throat. They can also trigger systemic cardiovascular inflammation and oxidative stress. As exposures increase, the impacts can be more severe.

Fine particulate matter and nitrogen dioxide

Older adults, especially those with heart (cardiovascular) or lung (respiratory) conditions, are at an increased risk of morbidity and mortality associated with short-term (days to weeks) or long-term (months to years) PM_{2.5} exposure.^{23, 24} Long-term PM_{2.5} and NO₂ exposure have also been associated with an increased risk in the incidence of dementia, depression, stroke, and diabetes.^{25, 26} Long-term PM_{2.5} and NO₂ exposure also increases the risk of impaired lung development and asthma in children and infants. Short-term exposure to PM_{2.5} and NO₂ has also been linked to increases in all-cause mortality, hospitalizations and exacerbations of chronic respiratory conditions like asthma and chronic obstructive pulmonary disease (COPD).^{27, 28}

Ozone

Short-term O₃ exposure can cause inflammation of the bronchial airways and increases the risk of COPD, asthma exacerbation, and oxidative stress.²⁹ Older adults and those with preexisting health conditions are disproportionately at risk for these health impacts. Long-term exposure to O₃ is associated with an increased risk for respiratory mortality, pneumonia, and COPD

²³ Di Q, Dai L, Wang Y, Zanobetti A, Choirat C, Schwartz JD, Dominici F. Association of short-term exposure to air pollution with mortality in older adults. *Journal of the American Medical Association*. 2017 Dec 26;318(24):2446-56.

²⁴ Papadogeorgou G, Kioumourtzoglou MA, Braun D, Zanobetti A. Low Levels of Air Pollution and Health: Effect Estimates, Methodological Challenges, and Future Directions. *Current Environmental Health Reports*. 2019 Sep;6(3):105-115. doi: 10.1007/s40572-019-00235-7

²⁵ Pun VC, Manjourides J, Suh H. Association of ambient air pollution with depressive and anxiety symptoms in older adults: results from the NSHAP study. *Environmental Health Perspectives*. 2017 Mar;125(3):342-8.

²⁶ Paul LA, Burnett RT, Kwong JC, Hystad P, van Donkelaar A, Bai L, Goldberg MS, Lavigne E, Copes R, Martin RV, Kopp A. The impact of air pollution on the incidence of diabetes and survival among prevalent diabetes cases. *Environment International*. 2020 Jan 1;134:105333.

²⁷ Ma, Yiqun, et al. Short-term exposure to fine particulate matter and nitrogen dioxide and mortality in 4 countries. *JAMA Network Open* 7.3 (2024): e2354607-e2354607.

²⁸ Mainka, Anna, and Magdalena Žak. Synergistic or antagonistic health effects of long-and short-term exposure to ambient NO₂ and PM_{2.5}: a review. *International Journal of Environmental Research and Public Health* 19.21 (2022): 14079.

²⁹ Kim SY, Kim E, Kim WJ. Health effects of ozone on respiratory diseases. *Tuberculosis and Respiratory Diseases*. 2020 Dec 1;83(Supple 1):S6.

mortality.³⁰ Children living in communities with high O₃ concentrations have increased risk of asthma, impaired lung development and function, and allergy development, including hay fever.^{31, 32, 33}

Environmental justice and health disparities

Sensitive populations, including children, older adults, pregnant people, and people with underlying cardiovascular or respiratory health conditions, are disproportionately impacted by air pollution.³⁴ Some individuals and groups, such as outdoor workers, people with low incomes, and people who are unhoused, may experience higher levels of air pollution exposure or have less access to interventions and healthcare than the general population. These high exposure levels put them at increased risk for adverse health effects.^{35, 36}

Historically, people of color and Tribal communities across the U.S. have been disproportionately exposed to environmental pollutants as a result of multiple overlapping systematic factors.^{37,38} For example, redlining, a discriminatory housing lending practice, made communities of color ineligible for federal home loans and often confined these communities to areas next to major pollution sources. These pollution sources, including freeways, industry and manufacturing, ports, and airports, polluted the local air, water, and soil in historically redlined neighborhoods.³⁹ Over 50 years' worth of research across the U.S. has documented numerous instances of environmental racism, which was defined by civil rights leader Dr. Benjamin F. Chavis Jr. as the deliberate siting of polluting or hazardous facilities in communities primarily

³⁰ Turner MC, Jerrett M, Pope CA 3rd, Krewski D, Gapstur SM, Diver WR, et al. Long-term ozone exposure and mortality in a large prospective study. *American Journal of Respiratory and Critical Care Medicine* 2016;193:1134-42

³¹ Tétreault LF, Doucet M, Gamache P, Fournier M, Brand A, Kosatsky T, et al. Childhood exposure to ambient air pollutants and the onset of asthma: an administrative cohort study in Québec. *Environmental Health Perspectives* 2016;124:1276-82.

³² Gauderman WJ, Urman R, Avol E, Berhane K, McConnell R, Rappaport E, et al. Association of improved air quality with lung development in children. *New England Journal of Medicine* 2015;372:905-13.

³³ Parker, Jennifer D., Lara J. Akinbami, and Tracey J. Woodruff. Air pollution and childhood respiratory allergies in the United States. *Environmental Health Perspectives* 117.1 (2009): 140-147.

³⁴ U.S. EPA, Research on Health Effects from Air Pollution <https://www.epa.gov/air-research/research-health-effects-air-pollution#:~:text=Health%20Effects%20of%20Wildfire%20Smoke,-Larger%20and%20more&text=Wildfires%20increase%20air%20pollution%20in,economic%20impacts%20of%20wildfire%20emissions?>

³⁵ American Lung Association, Who is Most Affected by Outdoor Air Pollution? <https://www.lung.org/clean-air/outdoors/who-is-at-risk>

³⁶ Scripps Institution of Oceanography, Unhoused People are Highly Vulnerable to Wildfire Smoke <https://scripps.ucsd.edu/news/unhoused-people-are-highly-vulnerable-wildfire-smoke>

³⁷ Morello-Frosch R, Zuk M, Jerrett M, Shamasunder B, Kyle AD. Understanding the cumulative impacts of inequalities in environmental health: implications for policy. *Health Affairs*. 2011 May 1;30(5):879-87.

³⁸ Fernández-Llamazares A, Garteizgogea M, Basu N, Sonnewend Brondizio E, Cabeza M, Martínez-Alier J, McElwee P, Reyes-García V. A State-of-the-Art Review of Indigenous Peoples and Environmental Pollution. *Integrated Environmental Assessment and Management*. 2011 May 1; 16(3):324-341.

³⁹ The Seattle Civil Rights and Labor History Project <https://deptswashington.edu/civilr/segregated.htm>

populated by Black, Hispanic, Indigenous, Asian American, or Pacific Islander people as well as migrant farmworkers and low-wage workers.^{40, 41, 42}

Exposure to environmental pollutants has been found to increase the risk of adverse health outcomes for people, communities, and sovereign nations that have historically and systematically endured social, economic, and environmental harms.⁴³ In addition to environmental racism, numerous studies have documented disproportionate exposure to illnesses including gastrointestinal diseases, HIV/AIDS, and COVID-19⁴⁴ alongside discriminatory treatment in healthcare and other negative social determinants of health.^{45, 46} Cumulatively, these practices and policies have contributed to ongoing inequities in health outcomes among people of color, particularly among Black, Indigenous, and Hispanic individuals, in communities across the U.S.^{47, 48}

Table 2. Summary of criteria air pollutant sources and their health impacts.

⁴⁰ Natural Resources Defense Council, What is Environmental Racism <https://www.nrdc.org/stories/what-environmental-racism>

⁴¹ National Geographic, The Origins of Environmental Justice-and Why it's Finally Getting the Attention it Deserves <https://www.nationalgeographic.com/environment/article/environmental-justice-origins-why-finally-getting-the-attention-it-deserves>

⁴² Encyclopedia of Puget Sound, Why is so Much Pollution Found in Disadvantaged Communities? <https://www.eopugetsound.org/magazine/IS/pollution-disadvantaged-communities>

⁴³ Morello-Frosch R, Zuk M, Jerrett M, Shamasunder B, Kyle AD. Understanding the cumulative impacts of inequalities in environmental health: implications for policy. *Health Affairs*. 2011 May 1;30(5):879-87.

⁴⁴ National Library of Medicine, PubMed Central, Race, Healthcare, and Health Disparities: A Critical Review and Recommendations for Advancing Health Equity <https://pmc.ncbi.nlm.nih.gov/articles/PMC10527840/#s1>

⁴⁵ Kaiser Family Foundation, Race, Inequality, and Health <https://www.kff.org/racial-equity-and-health-policy/health-policy-101-race-inequality-and-health/?entry=table-of-contents-introduction>

⁴⁶ National Library of Medicine, PubMed Central, Changing the Narrative: Structural Barriers and Racial and Ethnic Inequities in COVID-19 Vaccination <https://pmc.ncbi.nlm.nih.gov/articles/PMC8470519/>

⁴⁷ Lane HM, Morello-Frosch R, Marshall JD, Apte JS. Historical redlining is associated with present-day air pollution disparities in US cities. *Environmental Science & Technology Letters*. 2022 Mar 9;9(4):345-50.

⁴⁸ Gochfeld M and Burger J. Disproportionate Exposures in Environmental Justice and Other Populations: The Importance of Outliers. *American Journal of Public Health*. 2011 Dec;101 Suppl 1(Suppl 1):S53-63.

Pollutant	Major Sources	Health Impacts	Sensitive Populations
Fine Particulate Matter (PM _{2.5}) ⁴⁹	• Wildfire smoke • Residential wood smoke • Home heating • Vehicle emissions • Industrial facilities • Outdoor burning • Dust from agriculture and construction	• Increases risk of death, stroke, nervous system conditions, cancer and adverse birth outcomes • May contribute to the susceptibility of respiratory infections • Worsens respiratory illness, respiratory disease (e.g. asthma), cardiovascular disease, diabetes	• Children • Outdoor workers • Older adults • Newborns • Pregnant people • People with existing health conditions
Coarse Particulate Matter (PM ₁₀)	• Dust from agriculture, roadways, and construction • Pollen • Mold • Industrial facilities	• Causes upper airway respiratory irritation • Worsens asthma and other respiratory diseases	• Children • Outdoor workers • Older adults • Newborns • Pregnant people • People with existing health conditions
Ground level Ozone (O ₃) ⁵⁰	• Secondary formation from reaction of nitrogen oxides (NOx) and volatile organic compounds (VOCs) with sunlight and heat • Sources of VOCs and NOx include vehicle emissions, industrial activities, household and industrial solvents, and wildfires	• Irritates airways • Worsens asthma • Reduces lung function • Increases risk for metabolic, cardiovascular, and respiratory illness	• People with asthma • Children • Older adults • Outdoor workers

⁴⁹ U.S. EPA, Health and Environmental Effects of Particulate Matter <https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm>

⁵⁰ U.S. EPA, Health Effects of Ozone Pollution <https://www.epa.gov/ground-level-ozone-pollution/health-effects-ozone-pollution>

Pollutant	Major Sources	Health Impacts	Sensitive Populations
Nitrogen Dioxide (NO ₂) ⁵¹	- Fossil fuel combustion - Emissions from vehicles, ships, locomotives, power plants, industrial facilities, and residential fuel combustion	- Worsens asthma - May contribute to the development of asthma and susceptibility to respiratory infections	- People with asthma - Children - Older adults
Sulfur Dioxide (SO ₂) ⁵²	- Fossil fuel combustion - Emissions from marine vessels, oil refineries, and industrial facilities (paper mills, refineries, power plants)	- Irritates upper airway respiratory system - Inflammation of airways - Can increase risk of asthma and bronchitis	- People with asthma - Children - Older adults
Carbon Monoxide (CO) ⁵³	Emissions from motor vehicles, fuel combustion in industrial processes, generators, and residential heating	- Reduces oxygen delivery to organs - Can increase risk of cardiovascular morbidity, dizziness, unconsciousness, and death	- People with pre-existing cardiac conditions - Children - Older adults

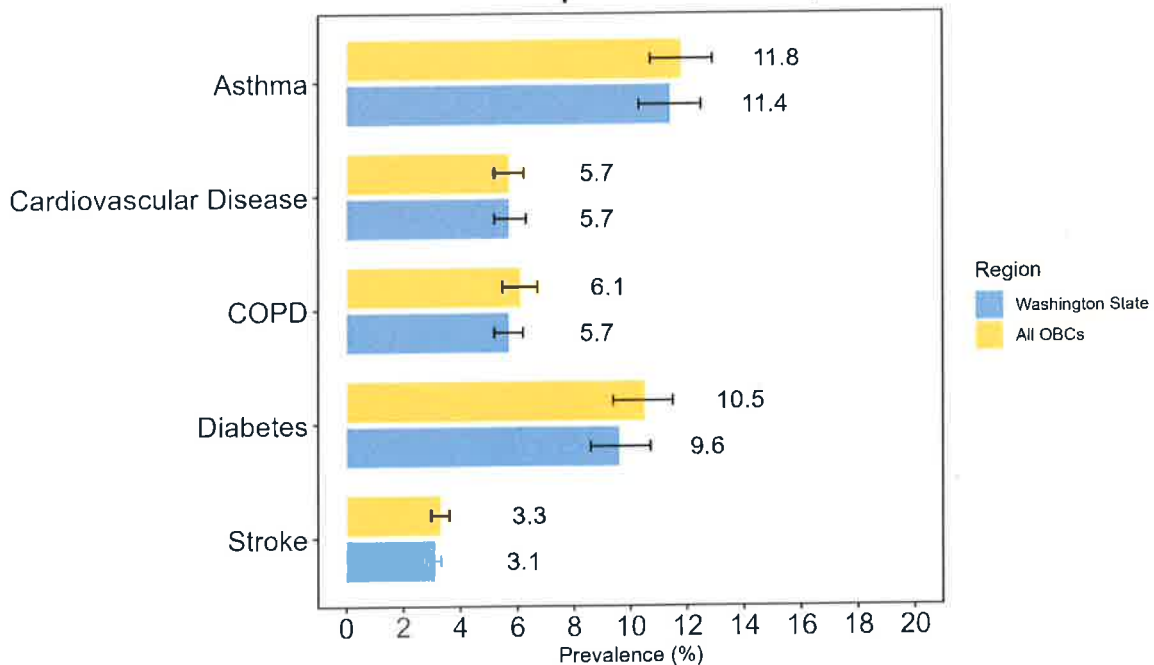
⁵¹ U.S. EPA, Basic Information about NO₂ <https://www.epa.gov/no2-pollution/basic-information-about-no2>

⁵² American Lung Association, Sulfur Dioxide <https://www.lung.org/clean-air/outdoors/what-makes-air-unhealthy/sulfur-dioxide>

⁵³ U.S. EPA, Basic Information about Carbon Monoxide Outdoor Air Pollution <https://www.epa.gov/co-pollution/basic-information-about-carbon-monoxide-co-outdoor-air-pollution>

Pollutant	Major Sources	Health Impacts	Sensitive Populations
Lead (Pb) ⁵⁴	• Leaded aviation fuel • Past sources included leaded gasoline and smelters	• Detrimental to kidney function, the nervous system, reproductive systems, and cardiovascular health • High levels of exposure can cause permanent brain damage and neurocognitive impairment in children	• Children • Infants

CDC data from 2022 suggest that communities that are overburdened and highly impacted by air pollution have slightly higher prevalences of chronic diseases compared to the statewide population; however, overlapping confidence intervals indicate that these differences might not be statistically significant (Figure 2).⁵⁵



⁵⁴ U.S. EPA, Lead Air Pollution <https://www.epa.gov/lead-air-pollution>

⁵⁵ U.S. Centers for Disease Control and Prevention, PLACES Data Portal <https://www.cdc.gov/places/tools/data-portal.html>

Figure 2. Prevalence of chronic health conditions in census tracts within overburdened communities highly impacted by air pollution compared with Washington statewide.

Data in Figure 2 come from CDC PLACES, 2024 release, which uses 2022 survey data.⁵⁵ Black lines indicate a 95% confidence interval.

Environmental impacts of air pollution

Criteria air pollution is also detrimental to the environment, as it intensifies water acidification, acid rain, crop damage, and the depletion of nutrients in the soil.⁵⁶ Smog and haze can impede plants' ability to photosynthesize by limiting the sunlight that reaches their leaves.⁵⁷ This can reduce crop yields or diminish the health of forests. Particulate matter can also increase the acidity of water and soil, which disrupts the life cycles for aquatic and terrestrial organisms.⁵⁸

Additional resources

More information about the criteria air pollutants and their health impacts:

- Criteria air pollution and health impacts [Improving Air Quality in Overburdened Communities Highly Impacted by Air Pollution: 2023 Report](#)⁵⁹
- Eco-Health Relationship Browser [Eco-Health Relationship Browser | EnviroAtlas | US EPA](#)⁶⁰
- Global Burden of Disease attributable to air pollution [Air pollution - Level 2 risk | Institute for Health Metrics and Evaluation](#)⁶¹
- Health effects of smoke [Health effects from smoke - Washington State Department of Ecology](#)⁶²
- Health impacts of air pollution and the Clean Air Act [Community Health Impacts of Air Pollution in the U.S.](#)⁶³

⁵⁶ U.S. EPA, Health and Environmental Effects of Particulate Matter <https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm>

⁵⁷ Frontiers. "Environmental and Health Impacts of Air Pollution: A Review." Public Health, 2020 Feb.

<https://www.frontiersin.org/journals/public-health/articles/10.3389/fpubh.2020.00014/full#B3>

⁵⁸ Zuhara S, Isaifan R. The impact of criteria air pollutants on soil and water: a review. *Journal of Environmental Science and Pollution Research*. 2018 Jun;4(2):278-84.

⁵⁹ Improving Air Quality in Overburdened Communities Highly Impacted by Air Pollution: 2023 Report

<https://apps.ecology.wa.gov/publications/UIPages/documents/2302115.pdf>

⁶⁰ U.S. EPA EnviroAtlas Eco-Health Relationship Browser

https://enviroatlas.epa.gov/enviroatlas/Tools/EcoHealth_RelationshipBrowser/

⁶¹ Institute for Health Metrics and Evaluation, Global Burden of Disease tools <https://www.healthdata.org/gbd-tool-access-changes>

⁶² WA Department of Ecology, Health effects from smoke <https://ecology.wa.gov/air-climate/air-quality/smoke-fire/health-effects>

⁶³ Community Health Impacts of Air Pollution in the U.S. Jan 2024 <https://cdn.catf.us/wp-content/uploads/2024/01/19170229/community-health-impacts-air-pollution.pdf>

- Criteria air pollutants and national air quality standards [Air quality standards - Washington State Department of Ecology](https://ecology.wa.gov/air-climate/air-quality/air-quality-targets/air-quality-standards#criteria)⁶⁴

Greenhouse gas emissions

Human sources of greenhouse gas emissions contribute to climate change and are accelerating its impacts. This can result in economic hardship, and intensifying events like heatwaves, droughts, floods, and wildfires, which impact human health.⁶⁵

Since 1900, Washington has warmed nearly two degrees Fahrenheit as the result of human-caused greenhouse gas emissions, and our extreme heat days are projected to increase 6 to 9 times by the 2050s.⁶⁶ Modeling also shows the impact of warming temperatures will result in more frequent and more severe climate change impacts in Washington. Shifts in temperature can facilitate the spread of infectious diseases or the risk of cardiovascular disease, posing direct health risks.⁶⁷ Climate change will lead to an increase of ground-level O₃ due to hotter temperatures and sunlight, or an increase in PM from more intense wildfires and wind-blown dust in some locations,⁶⁸ as this varies by region.

Greenhouse gases⁶⁹, such as carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O), generally do not cause acute health effects at the levels normally present in outdoor air. However, short-term exposure, continuous, or high concentrations, of these gases may cause temporary physiological stress⁷⁰ and can cause serious health consequences in enclosed spaces without ventilation. The link between environmental exposure to CH₄ emissions and cardiovascular diseases is a topic of growing interest to the scientific community, and how CH₄ can contribute to the formation of O₃ and PM_{2.5}.⁷¹

⁶⁴ WA Department of Ecology, monitored criteria air pollutants and national air quality standards <https://ecology.wa.gov/air-climate/air-quality/air-quality-targets/air-quality-standards#criteria>

⁶⁵ U.S. EPA Report on the Environment. Jun 2025 <https://www.epa.gov/report-environment/greenhouse-gases>

⁶⁶ WA Department of Ecology, 2025 Summary Report on the Science of Human Caused Climate Change and Recommendations for Washington State's Greenhouse Gas Emissions Reduction Limits <https://apps.ecology.wa.gov/publications/SummaryPages/2514064.html>

⁶⁷ Mohammadali Kiehbaddrouinezhad, Adel Merabet, Homa Hosseinzadeh-Bandbafha, Chapter 12, Health Impacts of Greenhouse Gas Emissions on Humans and the Environment, Advances and Technology Development in Greenhouse Gases: Emission, Capture and Conversion, Elsevier, 2024, Pgs.265-291 <https://www.sciencedirect.com/science/article/abs/pii/B9780443192319000119>

⁶⁸ U.S. Centers for Disease Control and Prevention, Climate and Health <https://www.cdc.gov/climate-health/php/effects/air-pollution.html>

⁶⁹ Chapter 173-441-040 WAC, Greenhouse Gases <https://app.leg.wa.gov/WAC/default.aspx?cite=173-441-040>

⁷⁰ Smith KR, Jerrett M, Anderson HR, Burnett RT, Stone V, Derwent R, Atkinson RW, Cohen A, Shonkoff SB, Krewski D, Pope CA. Public health benefits of strategies to reduce greenhouse-gas emissions: health implications of short-lived greenhouse pollutants. *The Lancet*. 2009 Dec 19;374(9707):2091-103.

⁷¹ Mendoza-Cano O, Trujillo X, Huerta M, Ríos-Silva M, Lugo-Radillo A, Bricio-Barrios JA, Rueda-Abad JC, Pérez-Rodríguez RY, Quintanilla-Montoya AL, Uribe-Ramos JM, Mendoza-Olivo VA, Murillo-Zamora E. Assessing the relationship between energy-related methane emissions and the burden of cardiovascular diseases: a cross-sectional study of 73 countries. *Scientific Reports*. 2023 Aug 19;13(1):13515.

The Washington Legislature set new greenhouse gas emission limits into law in 2020 to combat the threat of climate change and protect the environment, our economy, and the health and safety of our communities. Under the law, the state is required to reduce statewide emissions by 45% by 2030, 70% by 2040, and 95% by 2050. In order to meet these requirements, our state has implemented a strong suite of climate policies that work together to lower emissions. As Washington's most far-reaching climate policy, the CCA plays a key role.

Reducing greenhouse gas emissions

The CCA created the Cap-and-Invest Program, a market-based policy that limits and lowers climate pollution. This program puts a price on greenhouse gas emissions and requires major emitters to compete to buy allowances during quarterly auctions for every metric ton of greenhouse gases they release. The number of allowances available each year are gradually reduced through 2050.⁷²

The Cap-and-Invest Program is the CCA's primary tool for reducing greenhouse gas emissions. Projects funded by the revenue generated through Cap-and-Invest auctions may *further* reduce emissions. The Cap-and-Invest auction revenue⁷³ is appropriated by the legislature, and the funds received from this program flow through state agencies to numerous projects statewide in order to reduce climate and air pollution. Ecology publishes an annual report and the Governor's Office created a CCA dashboard⁷⁴ to track how funds are invested in Washington's communities. According to the latest report⁷⁵, 60% (about \$850 million) of total CCA investments benefited communities across Washington in the 2023-25 biennium, exceeding the law's 35% requirement.

Tracking greenhouse gas emissions

Ecology tracks greenhouse gas emissions two primary ways: through the greenhouse gas inventory and the mandatory greenhouse gas reporting program.

The greenhouse gas emissions inventory⁷⁶ is the historical record of Washington's contribution to global climate change, using data primarily from the EPA. The inventory measures the state's progress towards meeting mandatory greenhouse gas emission limits⁷⁷ by estimating statewide

⁷² WA Department of Ecology, Washington's Cap-and-Invest Program <https://ecology.wa.gov/air-climate/climate-commitment-act/cap-and-invest>

⁷³ WA Department of Ecology, Cap-and-Invest auction revenue <https://ecology.wa.gov/air-climate/climate-commitment-act/auction-revenue>

⁷⁴ CCA Dashboard: How Climate Commitment Act funds are invested <https://climate.wa.gov/washington-climate-action-work/climate-commitment-act-polluters-pay-communities-benefit/cca-dashboard-how-climate-commitment-act-funds-are-invested>

⁷⁵ Report to the Legislature: Climate Commitment Act Investments Fiscal Year 2025 <https://apps.ecology.wa.gov/publications/SummaryPages/2514107.html>

⁷⁶ WA Department of Ecology, Washington's greenhouse gas inventory <https://ecology.wa.gov/air-climate/reducing-greenhouse-gas-emissions/tracking-greenhouse-gases/ghg-inventories>

⁷⁷ WA Department of Ecology, Reducing greenhouse gas emissions <https://ecology.wa.gov/air-climate/reducing-greenhouse-gas-emissions>

emissions and reductions compared to a 1990 baseline. The most recent Washington State Greenhouse Gas Emissions Inventory report⁷⁸ summarizes Washington's greenhouse gas emissions from 1990 through 2021. Ecology is working to decrease the lag time between collecting emissions data and publishing the inventory by reducing reliance on federal data.

In July 2025, the Washington State Legislature passed Senate Bill 5036⁷⁹ which changes the frequency of the Washington Greenhouse Gas Inventory. Ecology is now required to publish a full inventory each even-number year through 2030, data summaries in 2027 and 2029 in lieu of a full report, and then annually beginning in 2031. The bill updates the requirement for the data used in the report to match the reality of data availability, changing "from the most recent two years of data" to "the two most recent years for which data is available."

In addition to producing the greenhouse gas inventory, Ecology collects emissions data directly through Washington's mandatory Greenhouse Gas Reporting Program.⁸⁰ Facilities that emit at least 10,000 MT CO₂e per year of greenhouse gas emissions have been required to report their emissions to Ecology since 2012. In 2022, requirements were updated to include a broader group of industries and align with the requirements of the Cap-and-Invest Program. Using this information, businesses that emit over 25,000 MT CO₂e are also subject to the Cap-and-Invest Program (covered sources). The Cap-and-Invest Program began on January 1, 2023, which is in its first compliance period that runs from 2023 to 2026. Data collection is ongoing and information on emission reductions will be available in the future.

While the scope of the Cap-and-Invest Program focuses on carbon pollution reductions from covered sources statewide, the environmental justice provision in RCW 70A.65.020 of the CCA requires Ecology to report levels of criteria air pollution and its resultant health impacts, as well as greenhouse gas emissions in the identified OBCs. This provision has several other requirements, like identifying the greatest contributors to CAP emissions (stationary and mobile sources), tracking emission trends, and achieving reductions of CAPs in OBCs.

The 2023⁸¹ and 2025 EJ Reports use the same methodology to calculate the greenhouse gas results. We include updated information on greenhouse gas emissions from facilities that reported through Washington's Greenhouse Gas Reporting Program and estimates for mobile sources in overburdened communities highly impacted by air pollution.

⁷⁸ WA Department of Ecology, Washington State Greenhouse Gas Emissions Inventory 1990-2021

<https://apps.ecology.wa.gov/publications/SummaryPages/2414077.html>

⁷⁹ Senate Bill 5036 Climate Policy <https://app.leg.wa.gov/bills/summary?billnumber=5036&year=2025>

⁸⁰ WA Department of Ecology, Mandatory greenhouse gas reports <https://ecology.wa.gov/air-climate/reducing-greenhouse-gas-emissions/tracking-greenhouse-gases/mandatory-greenhouse-gas-reports>

⁸¹ WA Department of Ecology, Improving Air Quality in Overburdened Communities Highly Impacted by Air Pollution: 2023 Report, Washington State Department of Ecology
<https://apps.ecology.wa.gov/publications/SummaryPages/2302115.html>

Further Washington climate policy

Burning fossil fuels emit both greenhouse gases and criteria air pollutants. Policy-driven efforts to reduce air pollution, especially within more vulnerable communities, is expected to yield benefits for environmental and human health. As Washington advances these efforts, state and local planning frameworks are incorporating climate-focused requirements.

In 2023, House Bill 1181⁸² was signed into law and added a climate goal to the Growth Management Act. This law requires that cities and counties planning under the Growth Management Act include a “climate element” that reduces greenhouse gas emissions in their comprehensive plans.⁸³ The Washington Department of Commerce has developed intermediate guidance for those cities and counties to use.⁸⁴ In addition to this, some local governments produce their own greenhouse gas inventories required by a city ordinance. For example, the City of Spokane publishes a greenhouse gas inventory using community-level data sources.⁸⁵ When available, county and city inventories are linked in the individual Community Reports of this publication.

The transportation sector continues to emit the most greenhouse gases according to the Washington Greenhouse Gas Emissions Inventory, accounting for 39.7% of greenhouse gas emissions in 2021.⁸⁶ The Clean Fuel Standard⁸⁷, Chapter 173-424 WAC⁸⁸, curbs carbon pollution from transportation by reducing greenhouse gas emissions from the production and supply of transportation fuels. The low-emission vehicle standards and zero-emission vehicle standards under the Clean Vehicles Program⁸⁹ apply to automakers and contribute to the reduction of carbon emissions. Further policy and reports can be found on Ecology’s website.⁹⁰

⁸² Climate Change-Planning, House Bill 1181, July 23, 2023. <https://lawfilesexternal.leg.wa.gov/biennium/2023-24/Pdf/Bills/Session%20Laws/House/1181-S2.SL.pdf?q=20230615091639>

⁸³ Washington Department of Commerce, Growth Management Services <https://www.commerce.wa.gov/growth-management/#:~:text=The%20Growth%20Management%20Act%20%28GMA%29%20requires%20that%20the,every%20ten%20years%20to%20ensure%20they%20remain%20up-to-date.>

⁸⁴ Washington Department of Commerce, Growth Management Services, Climate Planning <https://www.commerce.wa.gov/growth-management/climate-planning/>

⁸⁵ City of Spokane’s Greenhouse Gas Inventory, StoryMap, April 15, 2025 <https://storymaps.arcgis.com/stories/3a4abcd7bc9642408002603847b84566>

⁸⁶ WA Department of Ecology, Washington State Greenhouse Gas Emissions Inventory: 1990-2021 <https://apps.ecology.wa.gov/publications/SummaryPages/2414077.html>

⁸⁷ WA Department of Ecology, Clean Fuel Standard <https://ecology.wa.gov/air-climate/reducing-greenhouse-gas-emissions/clean-fuel-standard>

⁸⁸ Clean Fuels Program, Chapter 173-424 WAC <https://ecology.wa.gov/regulations-permits/laws-rules-rulemaking/rulemaking/wac-173-424>

⁸⁹ WA Department of Ecology, Vehicle emissions standards <https://ecology.wa.gov/air-climate/reducing-greenhouse-gas-emissions/vehicle-emissions-standards>

⁹⁰ WA Department of Ecology, Reducing greenhouse gas emissions <https://ecology.wa.gov/air-climate/reducing-greenhouse-gas-emissions>

In 2019, the Clean Energy Transformation Act (CETA) was signed into law, which requires utility companies to supply residents and businesses with carbon-free resources by 2045.⁹¹

Additional resources

- U.S. EPA's State Inventory and Projection Tool to help states develop greenhouse gas emissions inventories [State Inventory and Projection Tool | US EPA](#)⁹²
- U.S. EPA's Local Greenhouse Gas Inventory Tool [Local Greenhouse Gas Inventory Tool | US EPA](#)⁹³
- Washington's biggest climate policies at work [Washington climate action at work | Climate](#)⁹⁴
- Washington's electric vehicle mapping tool for supply equipment or charger infrastructure [Zero-emission and electric vehicles mapping tool | WSDOT](#)⁹⁵
- Air quality in overburdened communities grants and Ecology's grant-funded projects map [Overburdened communities grants - Washington State Department of Ecology](#)⁹⁶
- Quick facts of methane gas [Methane Gas Fact Sheet](#)⁹⁷

Listening sessions

The Department of Ecology and Department of Health jointly developed a pilot process for conducting listening sessions with local clean air agencies, LHJs, community-based organizations, residents of OBCs, and other interested parties. Conducting these sessions aligns closely with the community engagement strategy as outlined or prescribed by the CCA. The Environmental Justice review of section of the CCA, RCW 70A.65.020, requires the Department of Ecology to proactively seek input from individuals and groups impacted by air pollution.

When developing the listening session methodology, Ecology and DOH referred to the Community Engagement Values and Guidance created by the Washington State Environmental Justice Council. The listening sessions were additionally intended to respond to calls from

⁹¹ Washington Clean Energy Transformation Act, Chapter 19.05 RCW
<https://app.leg.wa.gov/RCW/default.aspx?cite=19.405&full=true>

⁹² U.S. EPA, State Inventory and Projection Tool <https://www.epa.gov/statelocalenergy/state-inventory-and-projection-tool>

⁹³ U.S. EPA, Local Greenhouse Gas Inventory Tool <https://www.epa.gov/statelocalenergy/local-greenhouse-gas-inventory-tool>

⁹⁴ Washington climate policies <https://climate.wa.gov/washington-climate-action-work>

⁹⁵ Washington electric vehicle mapping tool <https://wsdot.wa.gov/business-wsdot/grants/zero-emission-vehicle-grants/zero-emission-and-electric-vehicles-mapping-tool>

⁹⁶ WA Department of Ecology, Air quality in overburdened communities grants <https://ecology.wa.gov/about-us/payments-contracts-grants/grants-loans/find-a-grant-or-loan/overburdened-communities-grants>

⁹⁷ Ohio Department of Health Bureau of Environmental Health Assessment, U.S. EPA publications 2012, methane gas fact sheet <https://semspub.epa.gov/work/05/437170.pdf>

environmental justice advocates for further engagement with frontline community members in decision making processes relating to environmental justice and health.⁹⁸

The following central goals guided the pilot listening session process:

- Determine how the EJ Report can provide meaningful, informative, and accessible information to OBC members to support their understanding of air quality and its health impacts.
- Learn how the EJ Report can be delivered in a format that is accessible and valuable to community partners, organizations, and individuals.
- Expand Community Reports in the EJ Report to better reflect changing demographics, lived experiences, and priorities relating to air quality and health in each OBC. Include updated descriptions of each community in the 2025 EJ Report and the online StoryMap.

Methods

Demographics and community descriptions

The EJ Report aggregates demographic data from the Washington State Office of Financial Management⁹⁹ (OFM) and the American Community Survey¹⁰⁰ (ACS) by the U.S. Census Bureau. OFM demographic indicators are modeled on data from the decennial census; ACS data are estimates based on representative samples of geographic areas across the U.S., and both are based on self-reported survey data. We used 2023 census tract data from OFM's small area estimates program (SAEP) to report on population by race, ethnicity, and age; and 2023 ACS census tract level data to report population estimates by education, employment, and health metrics (Table 3).

Table 3. Data sources of demographic indicators and community descriptions.

⁹⁸ [Front and Centered - 2024 Frontline Report on HEAL Progress](#)

⁹⁹ WA Office of Financial Management, Population & demographics <https://ofm.wa.gov/data-research/population-demographics/>

¹⁰⁰ U.S. Census Bureau, American Community Survey Data <https://www.census.gov/programs-surveys/acs/data.html>

Indicator	Source	Year	Specifications
Race/Ethnicity	Office of Financial Management ¹⁰¹	2023	Race categories are mutually exclusive. "Hispanic" ethnicity category includes people of all self-identified races, whereas American Indian/Alaska Native, Native Hawaiian/Pacific Islander, Black, Asian, and white include only people identifying as non-Hispanic.
Age	Office of Financial Management ¹⁰²	2023	OFM provides population estimates for people ages 0 to 99 in 5-year intervals.
Educational attainment	American Community Survey ¹⁰³	2023	Estimates from 2020 census data. Includes individuals 25 years or older.
Employment	American Community Survey ¹⁰⁰	2023	Includes individuals 16 years or older. Excludes incarcerated individuals and active-duty members of the Armed Forces.
Healthcare coverage	American Community Survey ¹⁰⁰	2023	Public and private insurance.
Non-English language spoken at home	American Community Survey ¹⁰⁰	2023	Non-English language spoken in addition to or instead of English at home for individuals 5 years and older.
Below federal poverty line	American Community Survey ¹⁰⁰	2023	Household poverty threshold calculated based on age and number of household members. ¹⁰⁴

¹⁰¹ WA Office of Financial Management, Race and ethnicity information page <https://ofm.wa.gov/data-research/population-demographics/forecasts-projections/age-sex-race-and-hispanic-origin/information/>

¹⁰² WA Office of Financial Management, Estimates of April 1 population by age, sex, race and Hispanic origin <https://ofm.wa.gov/data-research/population-demographics/estimates/age-sex-race-and-hispanic-origin/>

¹⁰³ Census Glossary <https://www.census.gov/glossary/?term=Educational+attainment>

¹⁰⁴ Poverty Thresholds <https://www.census.gov/data/tables/time-series/demo/income-poverty/historical-poverty-thresholds.html>

Indicator	Source	Year	Specifications
Disability	American Community Survey ¹⁰⁰	2023	Disability status for individuals 18 years of age and older. The ACS includes a series of questions about hearing, vision, cognitive, ambulatory, self-care, or independent living difficulties; respondents who indicate any one of the six disability types are considered to have a disability. ¹⁰⁵

We calculated and reported proportions and counts for all census tracts that fall fully or partially within the boundaries of overburdened communities highly impacted by air pollution (OBCs). These counts are compared to statewide estimates.

This report followed the Federal 1997 Office of Management and Budget (OMB) standard for reporting races and ethnicities, which the Washington Office of Financial Management currently follows for reporting population estimates.¹⁰⁶ We recognize that this system of classification does not fully represent the broad spectrum of racial and ethnic identities of individuals and communities living in OBCs. The Community Reports use qualitative insights gathered through community engagement to help provide greater context to the factors that shape community members' experiences of air quality and health.

Data from the aforementioned sources are reported in each of the 16 Community Reports, informing the Demographic and Social and Economic Characteristics sections.

Criteria air pollution

Since 2023, Ecology has installed 52 (49 PM_{2.5}, two PM₁₀, and one NO_x) CAPs monitors and sensors in OBCs, with plans for more monitors and a high-resolution mobile monitoring study. Monitored pollutant levels in Washington remain below the NAAQS, and the entirety of the state is in attainment of these standards. Additional monitoring data has provided critical information for this EJ Report.

¹⁰⁵ How Disability Data are Collected from the American Community Survey

<https://www.census.gov/topics/health/disability/guidance/data-collection-acs.html>

¹⁰⁶ WA Office of Financial Management, Race and ethnicity, <https://ofm.wa.gov/data-research/population-demographics/forecasts-projections/age-sex-race-and-hispanic-origin/information/>

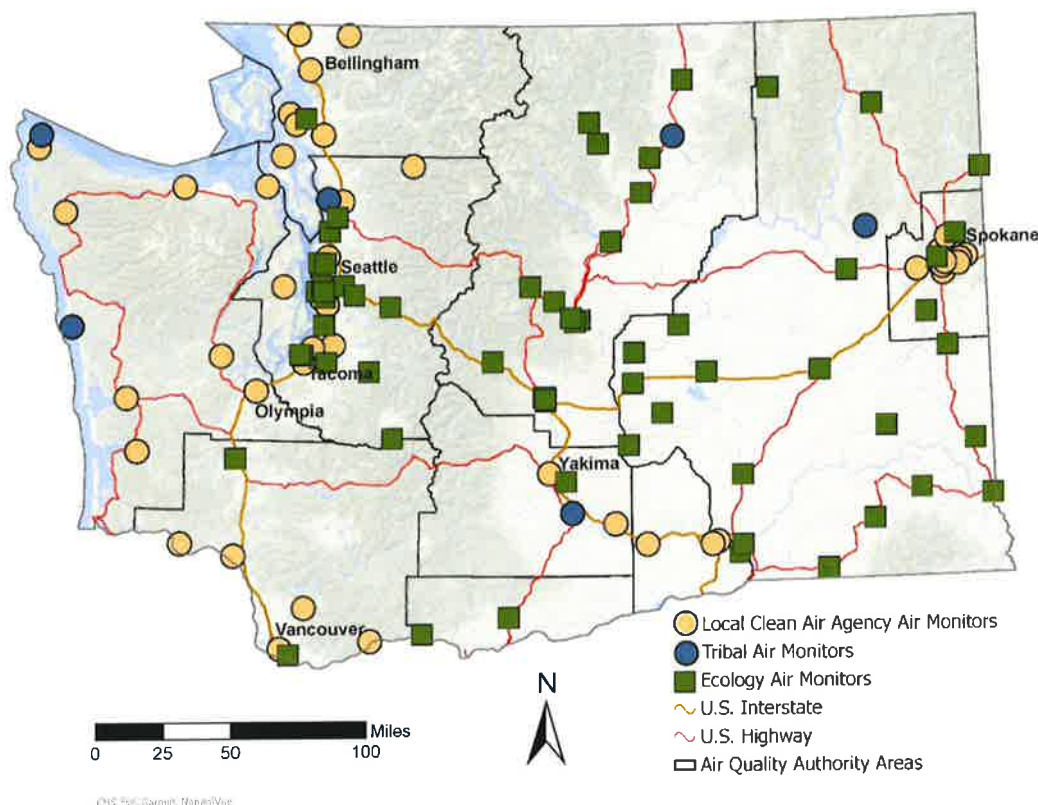


Figure 3. Ambient air monitoring sites across Washington.

In the 2023 EJ Report, we used monitoring data from 2020–2022 to report on criteria air pollution levels in OBCs. We also incorporated estimates of NO_2 and O_3 concentrations using model-monitor interpolation and roadway modeling tools. With the expansion of the monitoring network over the last two years, we were able to use monitoring data solely for the current report, minimizing the relatively larger uncertainty associated with modeling results.

For this report, we exclusively relied on data from the Washington Network. Limiting the data to the state’s monitoring network ensures that this report reflects the most accurate and reliable information available, which is validated through Ecology’s quality assurance process. By only using monitoring data, we avoid the uncertainties introduced by modeling methods that rely on outdated data inputs, allowing us to easily track pollution trends over time.

Design values (DVs) are three-year averages that describe the air quality at a given location and are used to determine compliance with the NAAQS.¹⁰⁷ DVs and estimated DVs are calculated

¹⁰⁷ National Primary and Secondary Ambient Air Quality Standards, 40 C.F.R. Part 50 (2025)

<https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-50?toc=1>

following the NAAQS methodology developed by the EPA, as described in 40 CFR Part 50.¹⁰⁸ A valid reporting year must have data from at least 75% of the sampling days in each calendar quarter.

We used data from regulatory monitors to report three-year DVs for pollutants that were continuously monitored between 2022 to 2024. We reported estimated DVs from sensors (SensWA) designed and built by Ecology and non-regulatory monitors that collected three consecutive years of data from 2022-2024. For pollutants that were not monitored continuously between 2022 to 2024, we report an average of available annual summary statistics.

PM_{2.5}

PM_{2.5} (particles with a diameter less than or equal to 2.5 micrometers) is measured by Federal Reference Method (FRM) monitors, Federal Equivalent Method (FEM) monitors, non-regulatory monitors, and Ecology's SensWA devices.¹⁰⁹ These measurements are collected from 45 monitoring sites (FRM/FEMs and non-FRM/FEMs) and SensWA devices that are within or representative of OBCs, as some sites are located just outside the boundaries of the 16 communities highly impacted by air pollution. The monitoring data is used to calculate the annual summary statistics, the annual 98th percentile of daily concentrations, and the 2024 design values for the 2022-2024 period.

These data were processed following the EPA's methodology outlined in 40 CFR Part 50, Appendix N.¹¹⁰ The annual PM_{2.5} design value is the annual mean averaged over three years. This value is compared to the annual PM_{2.5} NAAQS threshold of 9.0 µg/m³. The 24-Hour PM_{2.5} design value is the annual 98th percentile of 24-hour average concentrations. This value is averaged over three years and compared to the 24-hour PM_{2.5} NAAQS of 35 µg/m³.

Exclusion of wildfire smoke days

We calculated the annual PM_{2.5} summary statistics with wildfire days both included and excluded to show the relative impact of wildfire smoke on annual and daily PM_{2.5} concentrations. Wildfire season usually lasts from July-September, though it may begin earlier or last longer. For example, in 2022 the wildfire season persisted into October. July 4th and 5th, which are normally impacted by pollution from Independence Day fireworks, are included in all calculations, as fireworks are an anthropogenic source of emissions.

¹⁰⁸ National Primary and Secondary Ambient Air Quality Standards, 40 C.F.R. Part 50 (2025)

<https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-50?toc=1>

¹⁰⁹ WA Department of Ecology, Focus on SensWA, November 2023, pub 23-02-113

<https://apps.ecology.wa.gov/publications/summarypages/2302113.html>

¹¹⁰ Interpretation of the National Ambient Air Quality Standards for PM_{2.5} 40 C.F.R. Part 50, Appendix N (2025)

<https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-50/appendixAppendix%20N%20to%20Part%2050>

During the wildfire season, days on which the annual 24-hour 98th percentile exceeded 35.4 µg/m³ were reviewed by Ecology to determine if the exceedance was caused by wildfire smoke. These days were removed to calculate “days excluding wildfire smoke” annual summary statistics and design values. This shows the relative impact of wildfire smoke on annual and daily PM_{2.5} concentrations. We followed an internal process consistent with the EPA’s methodology to review and exclude exceptional events, including wildfire smoke days. To calculate the PM_{2.5} annual summary statistics without wildfire smoke, Ecology reviewed days on which the maximum PM_{2.5} concentration exceeded 15.0 µg/m³ during wildfire season. Days on which these exceedances were caused by wildfire smoke were removed from the “days excluding wildfire smoke” calculation.

PM₁₀

There are eight PM₁₀ monitoring sites within five OBC boundaries. The PM₁₀ design values are the number of expected exceedances of the primary and secondary 24-hour NAAQS of 150 µg/m³ (Appendix A). PM₁₀ levels are well below the NAAQS throughout Washington. Occasional exceedances are usually caused by wind-blown dust or construction dust. Recently, Ecology added PM₁₀ monitors in the Duwamish Valley and Everett based on community concerns about dust from unpaved roadways and construction sites.

Ozone

Ozone (O₃) is measured by FEM monitors. There are three continuously operational and ten seasonal O₃ monitors in Washington. Since O₃ is a regional pollutant, we report design values from four monitors Ecology deems representative of the O₃ concentrations within the boundaries of overburdened communities highly impacted by air pollution. We followed the NAAQS methodology for calculating O₃ design values.¹¹¹ The annual fourth-highest daily maximum 8-hour concentrations are averaged over 3 years and compared to the NAAQS of 0.070 ppm.

Nitrogen dioxide

There are four NO₂ FEM and FRM monitors in Washington’s OBCs. Daily maximum 1-hour design values were calculated following the NAAQS methodology¹¹². The NO₂ design values are the average of three years of the 98th percentile daily 1-hour maximum, compared to the 1-hour NAAQS of 100 ppb (Appendix A).

¹¹¹ National 8-hour primary and secondary ambient air quality standards for ozone, 40 C.F.R. Part 50.10 (2025) <https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-50/section-50.10>

¹¹² Interpretation of the Primary National Ambient Air Quality Standards for Oxides of Nitrogen, 40 C.F.R. Appendix S to Part 50 (2025) <https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-50/appendix-Appendix%20S%20to%20Part%2050>

Sulfur dioxide

Sulfur dioxide (SO₂) is measured by FEM monitors. SO₂ monitoring is limited because monitored pollution levels are far below the NAAQS. The SO₂ design values are the 99th percentile of the daily maximum 1-hour SO₂ concentrations, averaged over three years and compared to the NAAQS of 75 ppb. There is one SO₂ site within an OBC in the I-5 corridor.

Carbon monoxide

Carbon Monoxide (CO) is measured by FRM monitors. CO has a one-hour and an 8-hour averaging periods to calculate their respective primary standards. The 1-hour and 8-hour CO standards are compared to the NAAQS levels of 35 ppm and 9 ppm, respectively, and are not to be exceeded more than once per year. The hourly CO values for the recent years are all below the NAAQS levels. The 8-hour CO primary standard is the highest of the second-highest annual 8-hour maximum concentration from years 2023 and 2024. There are two CO monitoring sites within OBCs in the I-5 corridor.

Number of days with unhealthy air quality

The Air Quality Index (AQI),¹¹³ developed by the EPA, categorizes health risks from CAPs. We calculated the annual number of days with air quality Unhealthy for Sensitive Groups (USG) or worse by counting the days when the maximum AQI exceeded 100 (see Appendix B). We use the term “unhealthy air quality” to describe the number of days that exceed this AQI threshold. For communities with multiple monitors, we used data from the monitor with the most days above this threshold. If less than a full year of data was available, all available days were included in the average. We then averaged the annual number of unhealthy air quality days from years 2022-2024 to provide a three-year snapshot of each community’s exposure to unhealthy air quality. The AQI utilizes a distinct methodology from the NAAQS to provide localized information about air quality.

Health impacts

The 2023 and 2025 EJ Reports employ the same methodology to calculate the Health Impacts results, which uses the United States Environmental Protection Agency (EPA)’s Benefits Mapping and Analysis Program, Community Edition (BenMAP-CE).

In this report, we focus on the health impacts of PM_{2.5} and O₃, the CAPs with the greatest potential impact on population health in Washington.^{14, 114} Sources of both types of pollution are common across the state, including wood stoves and fireplaces, vehicles, dust, outdoor burning, industry, vehicles, and other sources for O₃. While all of Washington meets air quality

¹¹³ Technical Assistance Document for the Reporting of Daily Air Quality – the AQI

<https://document.airnow.gov/technical-assistance-document-for-the-reporting-of-daily-air-quality.pdf>

¹¹⁴ WA Department of Ecology, Particle pollution in Washington’s air <https://ecology.wa.gov/air-climate/air-quality/air-quality-targets/air-quality-standards/particle-pollution>

standards for PM and O₃ pollution, there are still several areas of concern that are monitored closely.^{115, 116} In the 2023 EJ Report, an assessment of various sources of air quality data, including monitor data, modeling, and available studies^{117, 118, 119, 120}, showed that levels of Pb, SO₂, and CO were determined to likely be low across the state.

BenMAP-CE

BenMAP-CE is an open-access, analytic software tool developed by the EPA that can be used to estimate morbidity and mortality associated with air pollutant exposure and the economic value of these health outcomes.¹²¹ In this report, we used BenMAP-CE to estimate 1) the yearly impact of PM_{2.5} exposure (mean annual PM_{2.5} concentration) on human health; 2) the daily impact of PM_{2.5} exposure (mean 24-hour PM_{2.5} concentration) on human health; 3) the seasonal impact of O₃ exposure (mean seasonal O₃ concentration from May to September) on human health; and 4) the daily impact of O₃ exposure (mean daily maximum 8-hour O₃ concentration) on human health. The four main inputs for the BenMAP-CE model were: (1) baseline PM_{2.5} and O₃ concentrations and natural background PM_{2.5} and O₃ concentration from Cheeka Peak, a remote monitoring site with minimal sources of air pollution from human activity that serves as Washington's regional background site (2) Washington census tract population averages for 2022-2023, (3) baseline mortality and morbidity rates from Washington State Department of Health 2022-2023 data sources, and (4) effect estimates from nationally representative studies or studies from the Pacific Northwest examining PM_{2.5} or O₃ exposure and mortality or morbidity (Figure 4).

¹¹⁵ WA Department of Ecology, Determining if areas in Washington meet national air quality standards

<https://ecology.wa.gov/regulations-permits/plans-policies/areas-meeting-and-not-meeting-air-standards>

¹¹⁶ WA Department of Ecology, Air quality studies <https://ecology.wa.gov/research-data/scientific-reports/air-quality-studies>

¹¹⁷ WA Department of Ecology, Lead in Washington's air <https://ecology.wa.gov/air-climate/air-quality/air-quality-targets/air-quality-standards/lead>

¹¹⁸ WA Department of Ecology, Sulfur dioxide in Washington's air <https://ecology.wa.gov/air-climate/air-quality/air-quality-targets/air-quality-standards/sulfur-dioxide>

¹¹⁹ WA Department of Ecology, Carbon monoxide in Washington's air <https://ecology.wa.gov/air-climate/air-quality/air-quality-targets/air-quality-standards/carbon-monoxide>

¹²⁰ WA Department of Ecology, 2012 Airport Lead Study: Auburn Municipal Airport and Harvey Field <https://apps.ecology.wa.gov/publications/SummaryPages/1302040.html>

¹²¹ U.S. EPA, Environmental Benefits Mapping and Analysis Program - Community Edition (BenMAP-CE) <https://www.epa.gov/benmap>

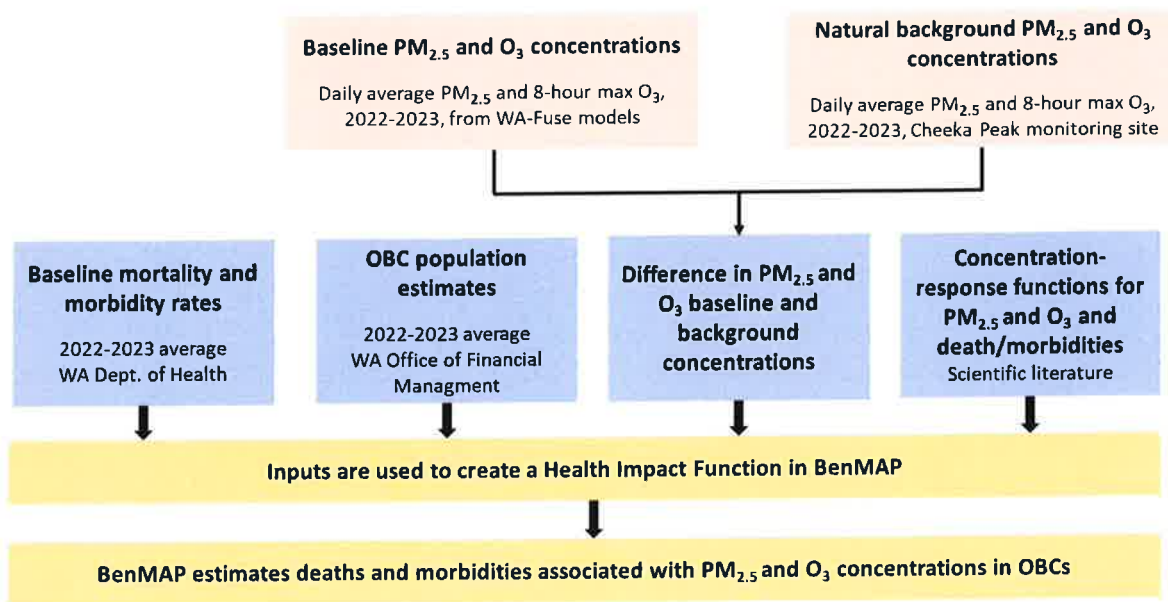


Figure 4. Flowchart of data inputs included in BenMAP-CE to produce estimates of deaths and morbidities associated with PM_{2.5} and O₃ concentrations in overburdened communities highly impacted by air pollution.

BenMAP-CE was run using 2020 census tract boundaries, with results reported at the same geographic level, focusing on census tracts where communities were fully or partially identified as overburdened and highly impacted by air pollution. The health impact functions in BenMAP-CE use the following general equation:

$$\Delta Y = (1 - e^{-\beta * \Delta AQ}) * Y_o * Pop$$

Where ΔY is the estimated health impact associated with yearly PM_{2.5} or O₃ exposure in overburdened communities, β is the beta coefficient from an epidemiologic study on the association between PM_{2.5} or O₃ concentrations and risk for the respective health outcome, ΔAQ is the change in annual or daily PM_{2.5} or O₃ concentrations, Y_o is the baseline rate of the respective health outcome per population, and Pop is population exposed to PM_{2.5} or O₃ in overburdened communities.

Table 4. BenMAP-CE input data and sources.

Inputs	Data Source	Year	Scale
Baseline PM _{2.5} and O ₃ concentrations	WA-Fuse	2022-2023	Census Tract
Natural background PM _{2.5} and O ₃ concentrations ¹²²	Monitors at Cheeka Peak, WA	2022-2023	Point
Population ¹²³	WA Office of Financial Management	2022-2023	Census Tract
Baseline rates per population — Deaths ¹²⁴	Center for Health Statistics/WA DOH	2022-2023	Census Tract
Baseline rates per population — Hospital admissions ¹²⁵	Comprehensive Hospital Abstract Reporting System (CHARS)/WA DOH	2022-2023	ZIP code
Baseline rates per population — ED visits ¹²⁶	Rapid Health Information Network (RHINO)/WA DOH	2022-2023	Census Tract
Baseline rates per population — Lung cancer diagnoses ¹²⁷	Washington State Cancer Registry/WA DOH	2022	Census Tract

ED = emergency department; PM = particulate matter; WA DOH = Washington State Department of Health

¹²² WA Department of Ecology, Improving Air Quality in Overburdened Communities Highly Impacted by Air Pollution: 2023 Report, Washington State Department of Ecology

<https://apps.ecology.wa.gov/publications/SummaryPages/2302115.html>

¹²³ WA Department of Ecology, Improving Air Quality in Overburdened Communities Highly Impacted by Air Pollution: 2023 Report, Washington State Department of Ecology

<https://apps.ecology.wa.gov/publications/SummaryPages/2302115.html>

¹²⁴ Washington State Department of Health, Death data <https://doh.wa.gov/data-and-statistical-reports/health-statistics/death>

¹²⁵ Washington State Department of Health, Comprehensive Hospital Abstract Reporting System (CHARS)

<https://doh.wa.gov/data-statistical-reports/healthcare-washington/hospital-and-patient-data/hospital-discharge-data-chars>

¹²⁶ Washington State Department of Health, Syndromic Surveillance (RHINO) <https://doh.wa.gov/public-health-provider-resources/healthcare-professions-and-facilities/data-exchange/syndromic-surveillance-rhino>

¹²⁷ Washington State Department of Health, Cancer data <https://doh.wa.gov/public-health-provider-resources/healthcare-professions-and-facilities/data-exchange/syndromic-surveillance-rhino>

Population and health data

Population estimates for census tracts, including age and racial and ethnic groups, were the average of 2022-2023 Washington State Office of Financial Management (WA OFM) population and demographics datasets.¹²⁸ Health data for our analysis came from multiple DOH sources: death statistical datasets from the Center for Health Statistics (CHS),¹²⁴ hospital admission data from the Comprehensive Hospital Abstract Reporting System (CHARS),¹²⁵ emergency department (ED) visit data from the Rapid Health Information Network (RHINO),¹²⁶ and lung cancer diagnosis data from the Washington State Cancer Registry (WSCR).¹²⁷ We obtained individual-level data from each data source for years 2022-2023, except for WSCR for which we used 2022 data as 2023 cancer records were not finalized at the time of analysis. Definitions that we used to identify each of our health outcomes with each data source can be found in Table D1.

Using these health data sources and census tract population data from WA OFM, we calculated baseline rates per population of each health outcome included in our analysis, including deaths by any cause and/or cause-specific deaths (i.e., “mortality rates”), hospitalizations, ED visits, and cancer diagnoses. Incidence rates were calculated as the sum of each health outcome that was identified in the data divided by the total population. Incidence rates were calculated for each 5-year age group (e.g., 0–4, 5–9, 10–14, ..., 80–84, and 85–99) within each census tract. Census tract information was available for all DOH records except for CHARS hospital admission data, which was at the ZIP (Zone Improvement Plan) code level. We used data crosswalks developed by the U.S. Department of Housing and Urban Development to assign census tracts to CHARS records based on the ZIP code.¹²⁹ Separate rates were calculated for each age group so that we could adjust health impact estimates for age. We further stratified mortality rates due to any cause by racial and ethnic groups to assess disparities in mortality between racial and ethnic groups. We were unable to include race- and ethnicity-specific results for other health outcomes in our analysis given the lack of race- and ethnicity-stratified effect estimates for these conditions in the published literature. We calculated the yearly average rate for each health outcome across 2022-2023.

PM_{2.5} and ozone concentration data

WA-Fuse is a modeling tool that incorporates PM_{2.5} and O₃ monitored pollutant concentrations to provide statewide pollutant concentration maps for the years 2021–2024. Although we report the estimated health impacts of O₃ in every OBC, O₃ pollution concentrations are only reported where the pollutant is monitored by the Washington Network.

¹²⁸ Washington State Office of Financial Management, Estimates of April 1 population by age, sex, race and Hispanic origin <https://ofm.wa.gov/data-research/population-demographics/estimates/age-sex-race-and-hispanic-origin/>

¹²⁹ Housing and Urban Development Office of Policy Development and Research, USPS ZIP Code Crosswalk Files https://www.huduser.gov/portal/datasets/usps_crosswalk.html

WA-Fuse generates gridded concentration maps of daily PM_{2.5} average and the daily 8-hr maximum O₃ at the spatial resolution of 5 km x 5 km. To generate daily and annual mean PM_{2.5} and O₃ at the census tract level for 2022–2023, we used a population-weighted approach based on 2020 census block populations. PM_{2.5} and O₃ values from WA-Fuse grid cells were assigned to each block by matching the block centroid to the nearest grid cell, excluding days with PM_{2.5} above 35.4 µg/m³. Population values were then used to weigh each block's PM_{2.5} and O₃ contribution when aggregating to the tract level, ensuring that more populous areas had a greater influence on the estimates.

Yearly and daily health impact analyses were calculated by comparing baseline air quality data to the natural background PM_{2.5} concentration level at Cheeka Peak, Washington. For the yearly analyses, the 2022–2023 annual mean (i.e., PM_{2.5}: 2.24 µg/m³) and seasonal mean (i.e., O₃: 28.77 ppb) at the Cheeka Peak monitoring site were used to represent the natural background level of PM_{2.5} and O₃ without sources of air pollution from human activity. The annual and seasonal baseline air quality data included in this analysis is 2022–2023 WA-Fuse derived PM_{2.5} and O₃ data, respectively, at the census tract level. For the daily analyses, the 2022–2023 daily means at the Cheeka Peak monitoring site were used to represent the natural background level of PM_{2.5} and O₃ (May–September). The daily baseline air quality data are derived from WA-Fuse during 2022–2023.

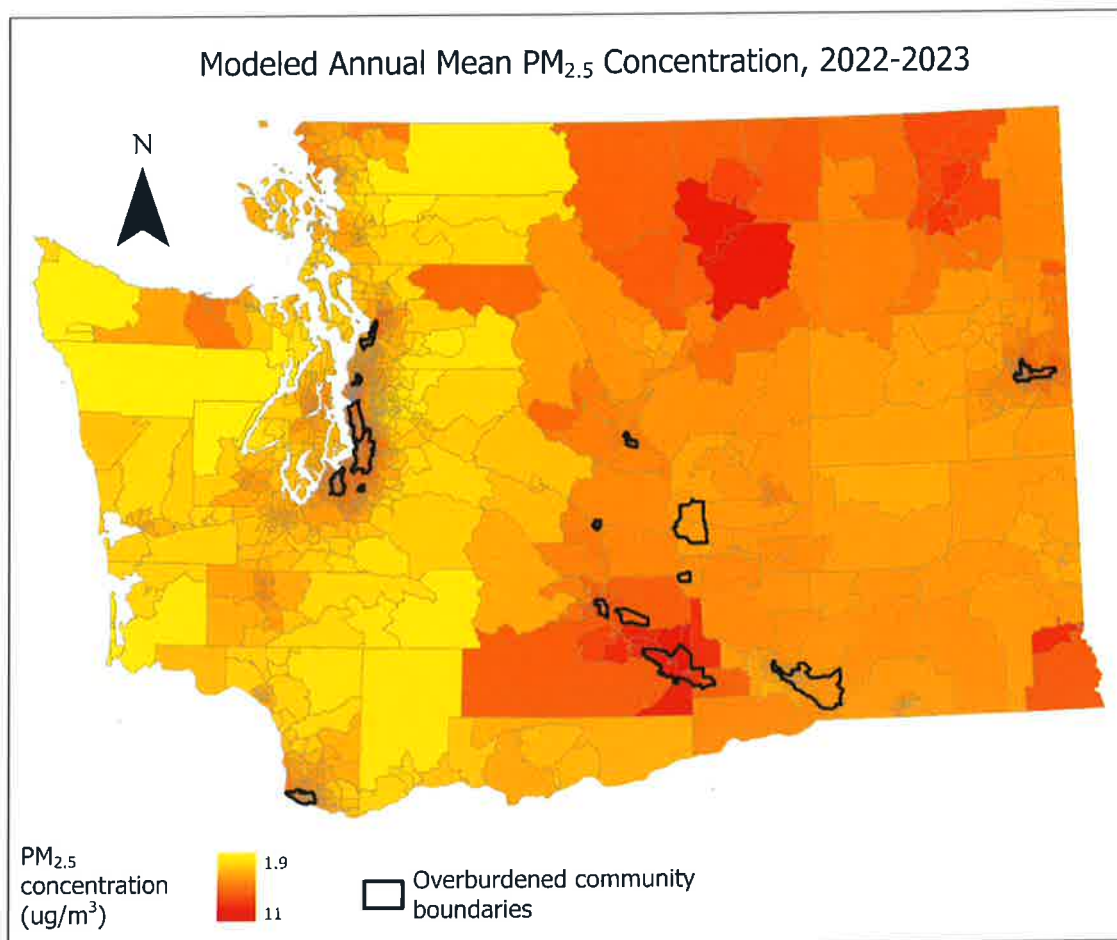


Figure 5. Census tract-level PM_{2.5} concentrations based on the WA-Fuse modeled data during 2022-2023. Wildfire days exceeding 35.4 µg/m³ have been removed. Annual mean PM_{2.5} NAAQS concentration is 9.0 µg/m³.

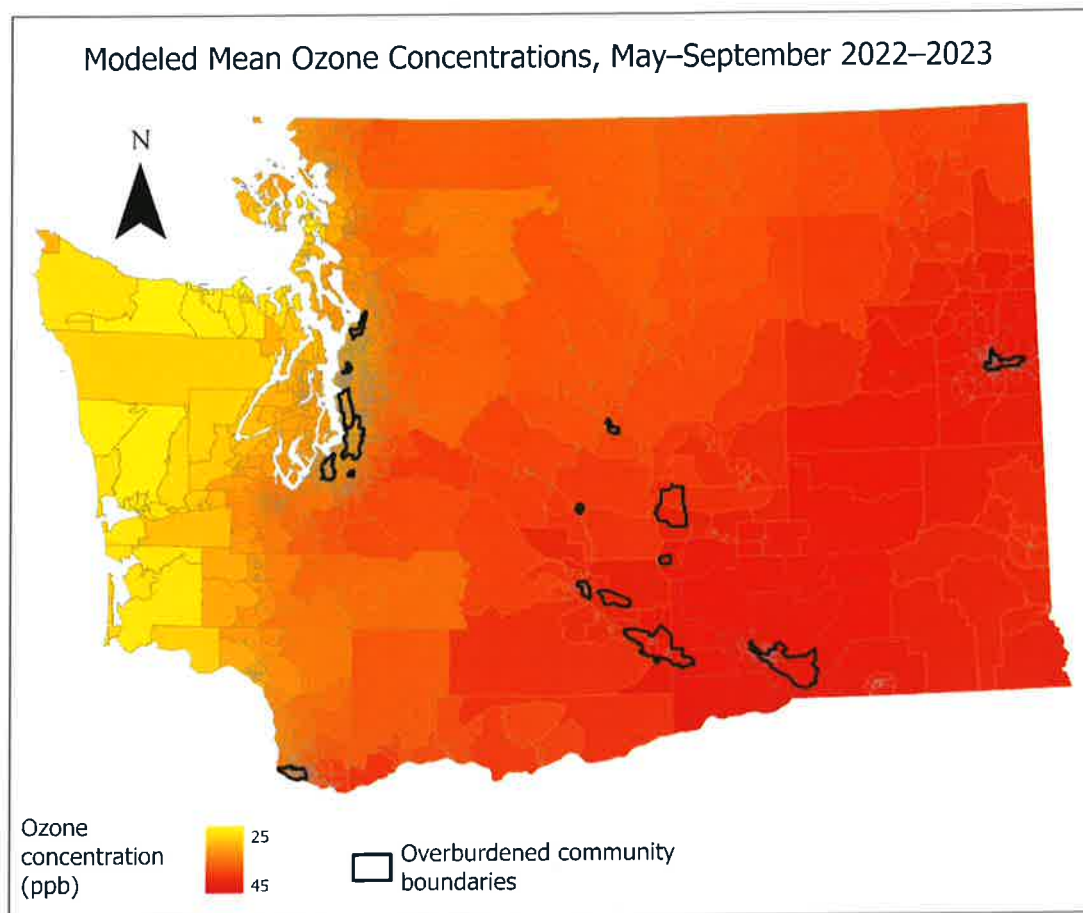


Figure 6. Census tract-level O_3 concentrations based on the WA-fuse model during 2022–2023. O_3 NAAQS concentration is 70 ppb.

Health impact functions

We identified specific health outcomes to include in our health impacts assessment in the scientific literature based on the following criteria: 1) whether there is evidence to support a causal relationship between the health outcome and $PM_{2.5}$ or O_3 in the scientific literature, 2) whether the necessary state-level health data on that outcome was available, and 3) if the scientific literature provides appropriate estimates of the amount of excess risk for that outcome associated with ambient $PM_{2.5}$ or O_3 concentrations.

We applied these criteria to the health impact functions that are preloaded by EPA and available to use in BenMAP-CE as well as carried out our own literature review to identify other relevant studies published since the latest version of BenMAP-CE was published (2020). Our literature review focused on studies published between January 2020 and April 2024 that focused on national population-based data or populations, studies carried out in Washington, or surrounding states or regions (Oregon, Northern California, Idaho). Studies that we identified

were reviewed and scored by two epidemiologists for risk of bias. The PubMed literature search strategy and risk of bias scoring tool that we used are provided in Texts D1 and D2 in the Appendix.

In Appendix D, Tables D2 and D3 show the specific health outcomes that were included in our analysis of PM_{2.5} based on these criteria, and Tables D4 and D5 show the specific health outcomes that were included in our analysis of O₃ based on these criteria.

Crude and age-adjusted mortality and morbidity

Using the specified health impact functions in BenMAP-CE, we estimated the annual number of deaths, hospitalizations, ED visits, and lung cancer diagnoses in Washington associated with the difference in baseline pollutant concentrations (PM_{2.5} or O₃) for each of the identified overburdened communities highly impacted by air pollution (OBCs) and the natural background PM_{2.5} concentration (measured at the Cheeka Peak control monitoring site) with respective 95% confidence intervals (CI). In other words, our estimates indicate the numbers of excess health outcomes that are related to the PM_{2.5} or O₃ concentrations in each community. It is important to note that the underlying studies that drive our models were not designed to estimate causal relationships between pollutants and health outcomes; therefore, it cannot be said that the numbers of health outcomes we report are directly caused by PM_{2.5} or O₃. Using these estimates and population estimates from WA OFM, we calculated crude rates for all OBCs combined and each individual OBC. CIs are proportional to population sizes reflecting higher uncertainty when estimating effects with smaller numbers of people. CIs that include 0 indicate that it is plausible that no deaths are associated with PM_{2.5} in this group in this community.

Because mortality and morbidity risks increase with age, and age distributions vary across communities and demographic subgroups, we adjusted the crude mortality and morbidity rates for age to allow for direct comparison across groups. Age-adjusted rates were calculated by using the 2023 Washington age distribution as the standard population. For each 10-year age group (e.g., 20–29-year-olds, 30–39-year-olds), we multiplied the crude rate by the state population for that age group to determine the expected number of conditions statewide. The numbers of expected conditions were summed across age groups and divided by the statewide population for the included age range for each health outcome to determine the age-adjusted rate. We used BenMAP-CE to analyze race- and ethnicity-stratified mortality rates due to any cause separately, then averaged the point estimates from the model outputs to present the final estimates.

Greenhouse gas emissions

For the 2025 reporting period, we included greenhouse gas emission totals from reporting facilities and estimates from mobile sources.

Facilities

Washington's Greenhouse Gas Reporting Program requires entities that produce over 10,000 metric tons of carbon dioxide equivalent (MT CO₂e) per year to report their greenhouse gas

emissions annually.¹³⁰ Entities are required to continue to report their greenhouse gas emissions unless they emit less than 10,000 MT CO₂e per year for five consecutive years, as required by WAC 173-441-030(6).¹³¹ The CCA builds upon this existing greenhouse gas reporting framework and also has its own specific reporting requirements. With some exceptions, an entity is covered by the CCA if it emits more than 25,000 MT CO₂e annually. Entities have a compliance obligation to report their greenhouse gas emissions for a full compliance period of four years, even if they report below 25,000 MT CO₂e in a calendar year.

Emissions that are reported use the Intergovernmental Panel on Climate Change (IPCC)¹³² Fourth Assessment Report (AR4) Global Warming Potentials (GWPs) to convert greenhouse gas emissions into CO₂e. Each gas has a GWP, which describes how much heat it traps in the atmosphere relative to CO₂ over a specific time horizon (20, 100, or 500 years). The IPCC published AR4 GWPs in 2007. The Greenhouse Gas Reporting Program uses AR4 GWPs mainly for regulatory stability, consistency, and alignment with other federal programs.

Information from the Greenhouse Gas Reporting Program is used to understand the amount and sources of carbon pollution in Washington. The reporting program allows the Department of Ecology to track emissions and reductions over time, and to also support the Cap-and-Invest Program.

The reporting facilities include many industrial sectors¹³³:

- Chemicals
- Food Production
- Government
- Healthcare
- Livestock – cattle feedlots
- Manufacturing
- Metals
- Minerals
- Natural Gas Systems
- Petroleum Systems

¹³⁰ WA Department of Ecology, Mandatory greenhouse gas reports <https://ecology.wa.gov/air-climate/reducing-greenhouse-gas-emissions/tracking-greenhouse-gases/mandatory-greenhouse-gas-reports>

¹³¹ Reporting of Emissions of Greenhouse Gases, Applicability, WAC 173-441-030 <https://app.leg.wa.gov/WAC/default.aspx?cite=173-441-030>

¹³² Intergovernmental Panel on Climate Change <https://www.ipcc.ch/>

¹³³ Greenhouse gas reporting program, Pie by sector chart <https://data.wa.gov/Natural-Resources-Environment/GHG-Reporting-Program-Pie-by-Sector/9zjj-tfi5>

- Power Plants
- Pulp and Paper
- Waste – landfills
- Wood Products

Some sectors do not have a stationary location that can be identified on a map (x, y coordinates), some report statewide totals that cannot be disaggregated, and certain entities import liquid fuels and therefore report emissions generated outside the state. These emissions were excluded from greenhouse gas facility totals in overburdened communities highly impacted by air pollution (OBCs), but still contribute to overall statewide greenhouse gas emissions. They include:

- Bulk power transmission and distribution – provides electricity statewide and emissions (fluorinated greenhouse gas) are counted as a statewide total
- Electric power distribution marketers
- Imported liquid fuels – fossil fuels imported from out of state
- Fuel suppliers – natural gas and petroleum supplied statewide for wholesale and retail
- Natural gas distribution – leaks from pipelines that locally distribute natural gas, emissions are counted as a statewide total

Facility sector greenhouse gas emissions that are exempt from coverage under the CCA but are required to report greenhouse gas emissions:

- Landfills – Washington established a landfill-specific methane-reduction program adopted by Ecology under Chapter 173-408 WAC¹³⁴ in 2024
- Coal plants – exempt in statute RCW 70A.65.080(7)(c)¹³⁵
- National security – military bases
- Hanford Nuclear Waste Site
- Cattle feedlots – exemptions for covered greenhouse gas emissions regarding agriculture equipment and manure management, but can voluntarily report emissions.

Using Esri¹³⁶ Geographic Information Systems (GIS), we spatially determined the location of greenhouse gas reporting facilities within OBCs. Facilities within a three-mile radius of the community boundary were also included and are described as “nearby”, consistent with the

¹³⁴ Landfill Methane Emissions, Chapter 173-408 WAC <https://ecology.wa.gov/regulations-permits/laws-rules-rulemaking/closed-rulemaking/wac-173-408>

¹³⁵ Greenhouse gas emissions-Cap and Invest Program, Program coverage, Chapter 70A.65 RCW <https://app.leg.wa.gov/RCW/default.aspx?cite=70A.65.080>

¹³⁶ Esri ArcGIS <https://www.esri.com/en-us/home>

reporting process used in the 2023 EJ Report. We utilized 2022 and 2023 reported data from the Greenhouse Gas Reporting Program.¹³⁷

Many of the greenhouse gas reporting facilities also emit criteria air pollutants. Air pollution is not constrained by community boundaries, which is why facilities within a three-mile radius of the community boundaries were included in this report. The choice of using a three-mile radius is not in statutory language, but rather used as a screening distance to capture near-community area around sources of air pollution. Other examples like the Colorado Department of Public Health and Environment's Air Toxic Act¹³⁸ and California Air Resources Board Community Health Protection Program¹³⁹ consider distance buffers in their policies. Furthermore, the Code of Federal Regulations (CFR)¹⁴⁰ and EPA's "Quality Assurance Handbook for Air Pollution Measurement Systems"¹⁴¹ define spatial scales for network design criteria for ambient air quality monitoring.

¹³⁷ WA Department of Ecology, Washington State Greenhouse Gas Reporting Program <https://ecology.wa.gov/air-climate/reducing-greenhouse-gas-emissions/tracking-greenhouse-gases/mandatory-greenhouse-gas-reports>

¹³⁸ Air Toxics Act, Colorado Department of Public Health and Environment <https://cdphe.colorado.gov/air-toxics-act>

¹³⁹ California Air Resources Board (CARB) AB 617, Community Health Protection Program <https://www.baaqmd.gov/community-health/community-health-protection-program>

¹⁴⁰ Network Design Criteria for Ambient Air Quality Monitoring, 40 C.F.R. Appendix D to Part 58 (2025) <https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-58/appendixAppendix%20D%20to%20Part%2058>

¹⁴¹ EPA Quality Assurance Handbook for Air Pollution Measurement Systems Volume II Ambient Air Quality Monitoring Program, 6.1 Monitoring Objectives and Spatial Scales, Jan 2017 https://www.epa.gov/sites/default/files/2020-10/documents/final_handbook_document_1_17.pdf

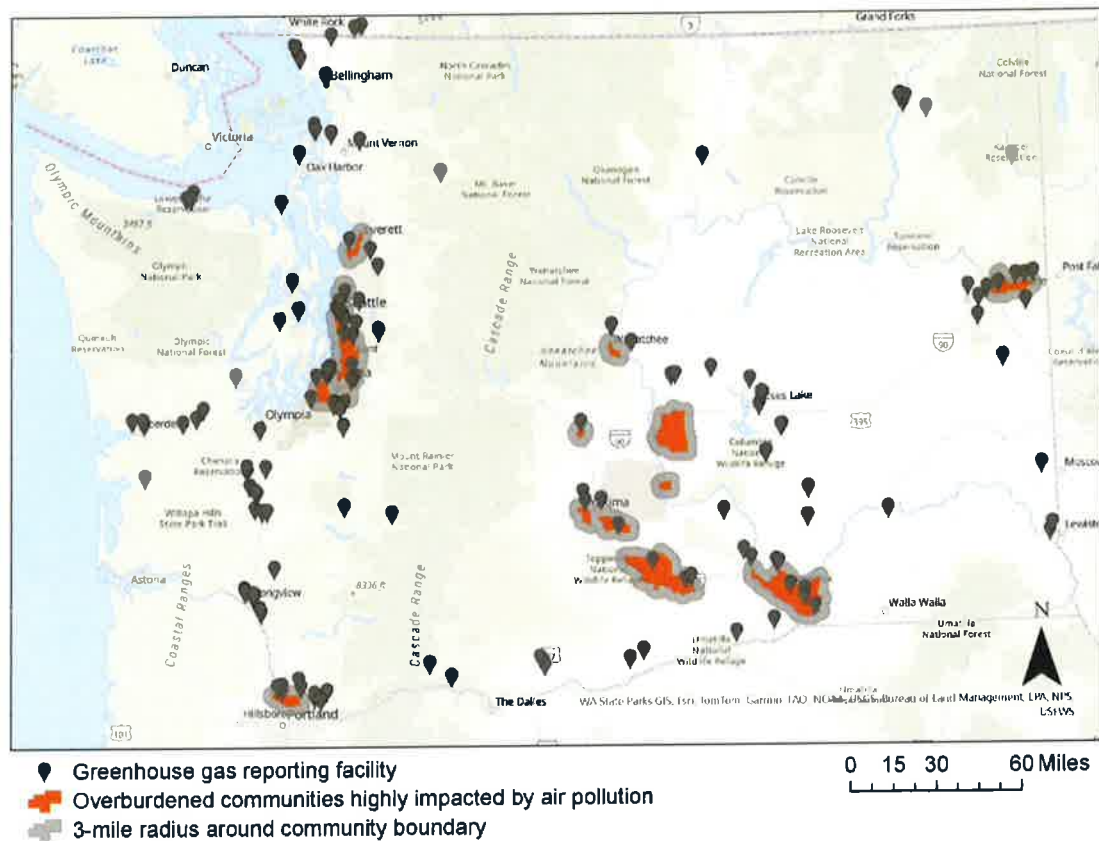


Figure 7. Statewide greenhouse gas reporting facilities, 2023.

Mobile sources

Greenhouse gas emissions from on-road and non-road mobile sources were estimated by using existing data from EPA's National Emissions Inventory (NEI), Washington's statewide greenhouse gas emissions inventory, and census population data.

We provided greenhouse gas emissions estimates for mobile sources using the following data sources:

- The 2020 EPA National Emissions Inventory (NEI)¹⁴² published every three years, which uses EPA's Motor Vehicle Emission Simulator (MOVES) and other tools that report activity for ships, trains, and airplanes. The NEI uses process-based emissions calculators that rely on local fuel, fleet, and travel information for mobile source estimates.

¹⁴² U.S. EPA, 2020 National Emissions Inventory (NEI) Data <https://www.epa.gov/air-emissions-inventories/2020-national-emissions-inventory-nei-data>

- The Washington State Greenhouse Gas Emissions Inventory: 1990-2021¹⁴³, which relies on the EPA's State Inventory Tool (SIT)¹⁴⁴ to estimate emissions for the transportation sector.
- The 2020 Washington Census for county and block group populations¹⁴⁵

To estimate greenhouse gas emissions from mobile sources, we began by finding the ratio of county to state emissions from mobile sources for each county from EPA's 2020 NEI. We then apportioned the total statewide emissions from the transportation sector in 2020 and 2021 from the Washington State Greenhouse Gas Emissions Inventory to counties using these ratios, as shown below:

$$\text{County emissions (MT CO}_2\text{e)} = (\text{County mobile emissions from NEI} \div \text{Statewide mobile emissions from NEI}) \times \text{Statewide transportation emissions total from WA Greenhouse Gas Emissions Inventory}$$

Next, we allocated the county-level estimates of greenhouse gas emissions from mobile sources to the overburdened communities highly impacted by air pollution using population data from the 2020 Census. We then found the emissions per capita in each community, as shown below:

$$\text{Community emissions (MT CO}_2\text{e)} = (\text{County emissions} \div \text{County population}) \times \text{Community population}$$

$$\text{Community emissions per capita (MT CO}_2\text{e/capita)} = \text{Community emissions} \div \text{Community population}$$

The results use the IPCC's Fifth Assessment Report (AR5)¹⁴⁶ GWPs to convert greenhouse gas emissions into CO₂e. The gases included in this conversion are carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O). The IPCC published AR5 GWPs in 2013-2014 and AR6 GWPs in 2021-2022. The Washington Greenhouse Gas Emissions Inventory uses AR5 GWPs in mobile source emission estimates, as its greenhouse gas accounting models are updated periodically as science improves.

Listening sessions

In June 2025, the Departments of Ecology and Health jointly conducted four pilot listening sessions to gather community perspectives, inform this report, and improve future engagement and reporting processes.

¹⁴³ Washington State Department of Ecology, Greenhouse Gas Inventories <https://ecology.wa.gov/air-climate/reducing-greenhouse-gas-emissions/tracking-greenhouse-gases/ghg-inventories>

¹⁴⁴ U.S. EPA, State Inventory and Projection Tool <https://www.epa.gov/statelocalenergy/state-inventory-and-projection-tool>

¹⁴⁵ Washington State Office of Financial Management, 2020 Census <https://ofm.wa.gov/washington-data-research/population-demographics/decennial-census/2020-census>, <https://ofm.wa.gov/washington-data-research/population-demographics/gis-data/census-geographic-files>

¹⁴⁶ Intergovernmental Panel on Climate Change <https://www.ipcc.ch/>

Methodology development

Ecology and DOH staff reviewed existing listening session protocols for other state agencies and conducted a literature review of methodologies for governments conducting community-based participatory research. Agency staff also attended multiple listening sessions led by the Department of Health and the University of Washington to identify best practices when hosting these types of sessions. This informed the development of a Listening Session Discussion Guide, which outlined:

- Script describing listening sessions and their purpose
- Informed consent explanation and form
- Information management and retention
- Questions for participants
- Evaluation forms

Planning and implementation of listening sessions

For the pilot listening sessions, our team chose to invite local public health and community partners that have existing relationships with the Departments of Health and Ecology. We held two online sessions for staff of local health jurisdictions (LHJs) in various roles related to their agencies' work on environmental health, community outreach, or health promotion. The two in-person listening sessions were geared towards community members who live or work in two overburdened communities highly impacted by air pollution in Central and Western Washington, specifically South Seattle and the Lower Yakima Valley. Community participants were invited to these two in-person sessions by local leaders involved with environmental justice organizations.

The project team conducted the following four pilot listening sessions in 2025:

- June 23rd and 24th: Virtual listening sessions with staff from each of the 11 LHJs that serve the 16 identified communities (15 participants)
- June 24th: In-person listening session in Burien in partnership with the Duwamish Valley Sustainability Alliance, a local community-based organization (22 participants)
- June 26th: In-person listening session in Sunnyside with farm workers (16 participants)

Each of these four sessions featured a facilitated discussion about pollutants of concern, health impacts, vulnerable groups, available resources to protect residents, communication channels, and community priorities.

For the virtual listening sessions, we invited staff from the 11 LHJs that work in each of the 16 identified communities to participate. These sessions were held online, due to feasibility, accessibility, and familiarity with virtual platforms among the participants. Online sessions were conducted in English since no participants expressed a need for a translation.

Staff from the following agencies participated:

- Benton-Franklin Health District
- Chelan-Douglas Health District
- Clark County Public Health
- Grant County Health District
- Kittitas County Public Health Department
- Public Health-Seattle/King County
- Spokane Regional Health District
- Snohomish County Health Department
- Tacoma-Pierce County Health Department
- Walla Walla County Department of Community Health
- Yakima Health District

The in-person listening sessions were hosted entirely in Spanish. All materials, including the consent and feedback forms, presentation, and discussion questions, were translated into Spanish. The in-person events were also hosted in locations recommended by the partnering community leaders.

All four pilot listening sessions followed the same format First, ECY and DOH staff shared a 10-minute presentation on air quality, health, and Washington’s environmental justice work under the Climate Commitment Act, followed by information about the purpose of the listening session and the intended uses of the information shared by participants. Then, the consent form was explained to participants, who were invited to ask questions about the form before voluntarily signing.

Once consent forms were signed, the facilitators guided participants through community agreements to ensure respectful and engaged participation. When there were more than eight total participants, facilitators divided participants into two groups for the discussion. In each group, facilitators asked the same eight questions, including the following:

“What do you think contributes to poor air quality in your community? What types of pollution are you or your community most concerned about?”

“What information about greenhouse gas emissions, criteria air pollutants, and health impacts from air pollution would help protect your community?”

After participants had the opportunity to respond to the questions, breakout groups rejoined to share and reflect on the key takeaways from discussions. Finally, participants were invited to fill out an evaluation form to provide recommendations for improving future listening sessions.

Facilitators followed the discussion guide questions but had the opportunity to ask follow-up questions not included in the guide to clarify or expand on each topic. Notetakers recorded observations and abbreviated statements. Recordings, transcripts, and notes were taken anonymously to protect participant's privacy. Notes and transcripts recorded in Spanish were translated to English by a bilingual DOH staff member.

Information analysis

Two project staff independently reviewed the notes and transcripts from each listening session. Key themes, comments, and specific ideas were identified from each transcript. This information is incorporated into the statewide results in this document as well as the South Seattle and Lower Yakima Valley Community Reports. Information gathered during the listening sessions is being used to inform the dissemination strategy of this report. Further, the Department of Ecology is referring to the participants' concerns regarding air quality and health when planning the analysis for the 2027 EJ Report.

Lived experience compensation

Ecology's Office of Equity and Environmental Justice recently introduced Lived Experience Compensation (LEC), a form of compensation for community members who directly contribute to a state agency's work. Participants who were not otherwise compensated for participation in listening sessions and had direct lived experience with air quality and its resultant health impacts were compensated for their participation. Each in-person participant received a one-time gift card for \$100 after the end of the session.

Statewide Results

Demographic data

The demographic results are reported for Washington, each overburdened community highly impacted by air pollution (OBC), and the aggregate of all census blocks fully or partially included in OBC boundaries. There are two times as many Black and Native Hawaiian/Pacific Islander residents in OBCs as compared to statewide averages (Figure 9). A third of residents in OBCs speak a language other than English at home, compared to 22% of all Washington residents. The proportion of residents who do not have health care coverage is higher in OBCs (10%) than the statewide average (6%).

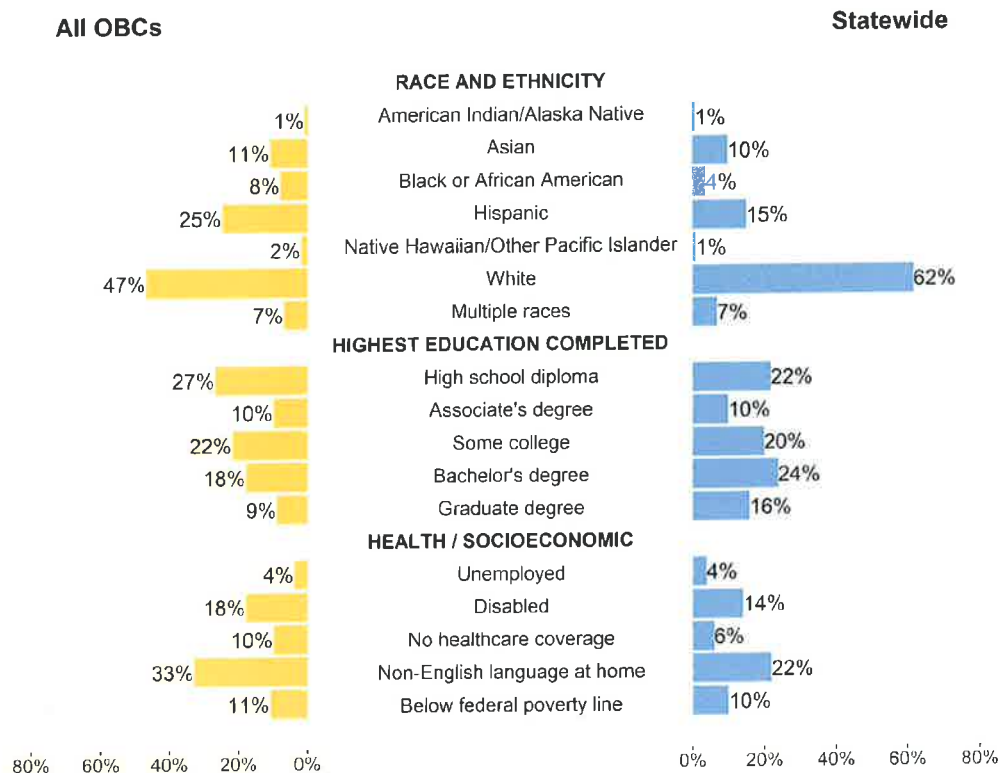


Figure 8. Statewide proportions compared to all census tracts fully or partially identified as overburdened communities highly impacted by air pollution.

Race and ethnicity estimates are from the Washington State Office of Financial Management, 2023. Education, health, and socioeconomic estimates are from the 2023 American Community Survey. Washington's population was 8,035,700 in 2024.¹⁴⁷

Criteria air pollution

Fine particulate matter (PM_{2.5}) contributes to the greatest number of elevated AQI days per year. In 2022-2024, most days on which the AQI exceeded 101 (the minimum threshold for the "Unhealthy for Sensitive Groups" category) occurred during wildfire events. Due to these events, some monitors across Washington reported concentrations above the PM_{2.5} and PM₁₀ NAAQS threshold. On average, there were fewer days with unhealthy air quality between 2022-2024 compared to 2020-2022 (Table 5).

¹⁴⁷ WA Office of Financial Management, Nov 2024 Data Tables, Population by age and sex https://ofm.wa.gov/wp-content/uploads/sites/default/files/public/dataresearch/pop/stfc/stfc_2024.xlsx

Table 5. Average maximum number of days with unhealthy air quality in overburdened communities, 2022-2024. Days impacted by wildfire smoke are included in this calculation.

Community Name	Pollutant of concern	Avg. annual days with unhealthy air quality (2020-2022)	Avg. annual days with unhealthy air quality (2022-2024)*
Spokane and Spokane Valley	PM _{2.5} 24-hour; PM _{2.5} annual; Cumulative criteria air pollution	7.3	3.7
Tri-Cities to Wallula	O ₃ ; PM _{2.5} 24-hour; PM ₁₀ ; Cumulative criteria air pollution	8.3	2.3
East Yakima	PM _{2.5} 24-hour; PM _{2.5} annual; Cumulative criteria air pollution	11	2.7
Lower Yakima Valley	PM _{2.5} 24-hour; PM _{2.5} annual; Cumulative criteria air pollution	10.7	4
Moxee Valley	PM _{2.5} 24-hour; Cumulative criteria air pollution	DNC	2
George and West Grant County	PM _{2.5} 24-hour	DNC	2
Mattawa	PM _{2.5} 24-hour	DNC	2
Ellensburg	PM _{2.5} 24-hour; Cumulative criteria air pollution	5.7	3
Wenatchee and East Wenatchee	PM _{2.5} 24-hour	12	8.3
Everett	PM _{2.5} 24-hour	5.7	0
North Seattle and Shoreline	PM _{2.5} 24-hour; Cumulative criteria air pollution	5.3	0
South Seattle	PM _{2.5} 24-hour; PM _{2.5} annual; Cumulative criteria air pollution	6.7	4.7

Community Name	Pollutant of concern	Avg. annual days with unhealthy air quality (2020-2022)	Avg. annual days with unhealthy air quality (2022-2024)*
South King County	PM _{2.5} 24-hour; Cumulative criteria air pollution	6.3	3.7
Northeast Puyallup	Cumulative criteria air pollution	DNC	0
South and East Tacoma	PM _{2.5} 24-hour; Cumulative criteria air pollution	7	5.7
Vancouver	PM _{2.5} 24-hour; Cumulative criteria air pollution	4.3	1.7

* = All available monitoring data from 2022-2024 are included in the three-year average. Partial years' data is weighted the same as a full years' data. Years for which the data was not collected were not included in the three-year average.

DNC = Data not collected

Between 2022 and 2024, air quality monitoring across Washington shows a general decline in average daily and annual PM_{2.5} concentrations. When wildfire-impacted days are excluded, all overburdened communities highly impacted by air pollution (OBCs) maintained levels below the National Ambient Air Quality Standards (NAAQS) (Table 6 and 7).

Communities with longer established monitoring sites, such as Spokane and Spokane Valley, East Yakima, Lower Yakima Valley, South Seattle, South King County, South and East Tacoma, and Vancouver, show year-to-year decreases in average daily PM_{2.5} values (Table 6). East Yakima and Lower Yakima Valley followed this trend, with notable decreases in annual PM_{2.5} concentrations over a three-year period between 2022 to 2024 (Table 7). Western Washington communities, including South Seattle and Tacoma, experienced smaller but consistent reductions in annual PM_{2.5} concentrations, reflecting fewer days impacted by wildfire smoke than in eastern regions (Table 7).

A second clear pattern is the effect of wildfire smoke on annual summary statistics for 24-hour PM_{2.5}, particularly in Central and Eastern Washington (Table 6). Communities such as Spokane and Spokane Valley, and Lower Yakima Valley showed 8–15% reductions in average daily PM_{2.5} values when wildfire smoke days were excluded (Table 6). In contrast, Western Washington communities exhibited smaller differences (4-8%) when including and excluding wildfire days, reflecting less impact from wildfire smoke. The Wenatchee-Fifth St PM_{2.5} monitor in the Wenatchee and East Wenatchee community exceeded the NAAQS threshold of 35 µg/m³ for the 2022-2024 period due to a significant wildfire smoke contribution in 2022. The George

PM_{2.5} monitor in the George and West Grant County community exceeded the NAAQS threshold in 2023 due to wildfire smoke. Otherwise, no other monitors reported data that exceeded the NAAQS threshold.

Communities with monitors installed in 2024, including Moxee Valley, Wenatchee and East Wenatchee, North Seattle and Shoreline, Everett, and Northeast Puyallup, report relatively low ambient daily PM_{2.5} levels, generally between 14 and 26 µg/m³. These concentrations are in attainment with the NAAQS.

These PM_{2.5} levels provide the foundation of a trend that will be analyzed through subsequent publications of the EJ Report. Concentrations of other criteria air pollutants that are monitored in some OBCs – including PM₁₀, O₃, NO₂, SO₂ and CO – were consistently below the NAAQS thresholds from 2022-2024. Currently, there is not sufficient data available to establish a trend, as many of the monitors are newly installed and policy stemming from the Climate Commitment Act is still being implemented. More information on individual communities can be found in the Community Reports of this publication.

Table 6. 24-hour $PM_{2.5}$ (98th percentile) summary statistics and 2024 design values ($\mu\text{g}/\text{m}^3$) in overburdened communities highly impacted by air pollution, 2022-2024. Summary statistics in brackets [] exclude wildfire-impacted days when the average $PM_{2.5}$ concentration exceeded $35.4 \mu\text{g}/\text{m}^3$. 24-hour $PM_{2.5}$ (98th percentile) NAAQS is $35 \mu\text{g}/\text{m}^3$.

Community Name	Monitoring Site	2022 24-hour 98 th Percentile	2023 24-hour 98 th Percentile	2024 24-hour 98 th Percentile	2024 Design Value
Spokane and Spokane Valley	Spokane- Augusta Ave	33.3 [28.1]	24.3 [23.1]	21.2 [21.2]	26 [24]
	Spokane-E Broadway Ave	29.7 [25.4]	24.7 [21.0]	21.4 [21.4]	25 [23]
	Spokane-E Garland Ave	DNC	DNC	22.7 [22.7]	*
	Spokane-E Joseph Ave	DNC	DNC	24.4 [24.4]	*
	Spokane-E Sprague Ave	DNC	DNC	23.6 [23.6]	*
	Spokane-E Stonewall Ave	DNC	DNC	19.7 [19.7]	*
	Spokane-N Howard St	DNC	DNC	28.8 [28.8]	*
	Spokane-N Perry St	DNC	DNC	26.5 [26.5]	*
	Spokane-S Pittsburg St	DNC	DNC	18.1 [18.1]	*
	Spokane Valley-E Buckeye Ave	DNC	DNC	20.6 [20.6]	*
	Spokane Valley-E Wellesley Ave	DNC	DNC	18.3 [18.3]	*
	Spokane Valley-N Pines Rd	DNC	DNC	22.4 [22.4]	*

Community Name	Monitoring Site	2022 24-hour 98 th Percentile	2023 24-hour 98 th Percentile	2024 24-hour 98 th Percentile	2024 Design Value
Tri-cities to Wallula	Kennewick-Metaline	17.1 [15.9]	16.1 [14.8]	15.5 [15.5]	16 [15]
	Burbank-Maple St	DNC	15.0 [14.7]	19.8 [19.8]	17 [17]
	Finley-S Finley Rd	DNC	DNC	20.0 [20.0]	*
East Yakima	Yakima-4 th Ave	29.4 [29.0]	25.4 [23.0]	26.4 [22.1]	27 [25]
Lower Yakima Valley	Prosser-Highland Dr	21.7 [21.7]	20.1 [16.8]	23.7 [23.1]	22 [21]
	Sunnyside-S 16 th St	34.4 [32.3]	29.5 [20.1]	25.2 [24.6]	30 [26]
Moxee Valley	Moxee-E Seattle Ave	DNC	DNC	26.1 [23.2]	*
Mattawa	Mattawa-Wahluke High School	DNC	18.3 [15.9]	13.8 [13.8]	*
George and West Grant County	George	DNC	105.5 [18.0]	15.1 [15.1]	*
Ellensburg	Ellensburg-Ruby St	25.1 [24.5]	18.4 [17.0]	14.7 [14.7]	19 [19]
	Ellensburg-Discovery Hall	DNC	DNC	13.8 [13.8]	*
	Ellensburg-Mountain View Ave	DNC	DNC	11.4 [11.4]	*
	Ellensburg-N Cora St	DNC	DNC	15.4 [15.4]	*

Community Name	Monitoring Site	2022 24-hour 98 th Percentile	2023 24-hour 98 th Percentile	2024 24-hour 98 th Percentile	2024 Design Value
Wenatchee and East Wenatchee	Wenatchee- Fifth St	70.9 [21.7]	19.9 [16.8]	16.8 [16.8]	36 [18]
	Wenatchee- Methow St	DNC	DNC	16.4 [16.4]	*
	East Wenatchee- 8 th St	DNC	DNC	15.8 [15.8]	*
Everett	Everett-Beverly Park Rd	DNC	DNC	13.9 [13.9]	*
North Seattle and Shoreline	Seattle-NE 127 th St	DNC	DNC	15.2 [15.2]	*
	Seattle-College Way N	DNC	DNC	14.4 [14.4]	*
South Seattle	Seattle-10 th & Weller	29.7 [27.7]	19.1 [18.3]	15.8 [15.8]	22 [21]
	Seattle-Beacon Hill	27.7 [23.3]	19.4 [15.9]	12.0 [12.0]	20 [17]
	Seattle- Duwamish	27.6 [25.3]	22.7 [22.4]	16.5 [16.5]	22 [21]
	Seattle-South Park	31.1 [24.3]	20.8 [20.8]	15.7 [15.7]	23 [20]
	Tukwila- Allentown	30.5 [26.3]	24.2 [23.3]	18.7 [18.7]	24 [23]
	Seattle-16 th Ave S	DNC	DNC	14.4 [14.4]	*
	Seattle-23 rd Ave SW	DNC	DNC	21.8 [21.8]	*
	Seattle-S Myrtle St	DNC	DNC	16.5 [16.5]	*

Community Name	Monitoring Site	2022 24-hour 98 th Percentile	2023 24-hour 98 th Percentile	2024 24-hour 98 th Percentile	2024 Design Value
South King County	Kent-James & Central	33.7 [32.7]	16.0 [16.0]	DNC	25 [24]
	Auburn-29 th St	38.5 [26.2]	17.4 [17.0]	16.0 [16.0]	24 [20]
South and East Tacoma	Tacoma-S 36 th St	30.7 [25.7]	21.5 [19.5]	14.9 [14.9]	22 [20]
	Tacoma-L Street	38.1 [31.0]	28.5 [27.1]	19.0 [19.0]	29 [26]
Northeast Puyallup	Puyallup-Pioneer Way E	DNC	DNC	18.5 [18.5]	*
Vancouver	Vancouver-NE 84 th Ave	29.4 [26.4]	25.4 [24.8]	16.6 [16.6]	24 [23]

Italics indicate incomplete annual data, DNC = data not collected, NAAQS = national ambient air quality standards, PM = particulate matter, $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter, * = incomplete data for 3-year design value

Table 7. Annual mean $\text{PM}_{2.5}$ concentrations and 2024 design values ($\mu\text{g}/\text{m}^3$) in overburdened communities highly impacted by air pollution, 2022–2024. Annual means in brackets [] exclude wildfire-impacted days when the average $\text{PM}_{2.5}$ concentration exceeded $15.0 \mu\text{g}/\text{m}^3$. Annual $\text{PM}_{2.5}$ NAAQS is $9.0 \mu\text{g}/\text{m}^3$.

Community Name	Monitoring Site	2022	2023	2024	2024 Design Value
Spokane and Spokane Valley	Spokane-Augusta Ave	8.94 [7.52]	8.64 [7.10]	6.88 [6.46]	8.2 [7.0]
	Spokane-E Broadway Ave	7.73 [6.36]	7.72 [6.29]	5.81 [5.46]	7.1 [6.1]
	Spokane-E Garland Ave	DNC	DNC	6.09 [5.56]	*
	Spokane-E Joseph Ave	DNC	DNC	5.98 [5.49]	*
	Spokane-E Sprague Ave	DNC	DNC	5.21 [4.84]	*
	Spokane-E Stonewall Ave	DNC	DNC	5.04 [4.68]	*
	Spokane-N Howard St	DNC	DNC	6.92 [6.38]	*
	Spokane-N Perry St	DNC	DNC	8.32 [7.30]	*
	Spokane-S Pittsburg St	DNC	DNC	5.44 [5.09]	*
	Spokane-Valley E Buckeye Ave	DNC	DNC	5.34 [4.94]	*
	Spokane-Valley E Wellesley Ave	DNC	DNC	4.14 [3.86]	*
Tri-cities to Wallula	Spokane-Valley N Pines Rd	DNC	DNC	5.49 [5.06]	*
	Kennewick-Metaline	5.55 [4.89]	6.57 [5.25]	4.43 [4.28]	5.5 [4.8]
	Burbank-Maple St	DNC	5.62 [5.29]	5.23 [5.06]	5.4 [5.2]
	Finley-S Finley Rd	DNC	DNC	5.94 [5.72]	*

Community Name	Monitoring Site	2022	2023	2024	2024 Design Value
East Yakima	Yakima-4 th Ave	9.14 [8.43]	8.79 [7.78]	7.13 [6.36]	8.4 [7.5]
Lower Yakima Valley	Prosser-Highland Dr	9.20 [9.20]	7.32 [6.13]	5.42 [4.70]	7.3 [6.7]
	Sunnyside-S 16 th St	11.18 [7.09]	9.05 [7.25]	6.79 [6.16]	9.0 [6.8]
Moxee Valley	Moxee-E Seattle Ave	DNC	DNC	5.49 [4.57]	*
Mattawa	Mattawa-Wahluke High School	DNC	6.21 [4.63]	3.42 [3.34]	4.8 [4.0]
George and West Grant County	George	DNC	9.61 [5.93]	3.84 [3.68]	6.7 [4.8]
Ellensburg	Ellensburg-Ruby St	7.07 [6.46]	6.49 [5.54]	4.70 [4.59]	6.1 [5.5]
	Ellensburg-Discovery Hall	DNC	DNC	3.74 [3.66]	*
	Ellensburg-Mountain View Ave	DNC	DNC	3.46 [3.46]	*
	Ellensburg-N Cora St	DNC	DNC	4.05 [3.87]	*
Wenatchee and East Wenatchee	Wenatchee-Fifth St	10.21 [6.10]	7.20 [6.21]	5.19 [5.19]	7.5 [5.8]
	Wenatchee-Methow St	DNC	DNC	3.35 [3.18]	*
	East Wenatchee-8 th St NE	DNC	DNC	3.72 [3.53]	*
Everett	Everett-Beverly Park Rd	DNC	DNC	4.30 [4.30]	*

Community Name	Monitoring Site	2022	2023	2024	2024 Design Value
North Seattle and Shoreline	Seattle-NE 127 th St	DNC	DNC	5.50 [5.50]	*
	Seattle-College Way N	DNC	DNC	4.31 [4.31]	*
South Seattle	Seattle-10 th & Weller	10.53 [7.00]	7.86 [7.46]	6.47 [6.39]	8.3 [7.0]
	Seattle-Beacon Hill	7.02 [5.47]	6.02 [5.66]	4.19 [4.19]	5.7 [5.1]
	Seattle-Duwamish	8.78 [7.44]	7.75 [7.39]	6.47 [6.42]	7.7 [7.1]
	Seattle-South Park	9.52 [7.72]	8.15 [7.80]	7.18 [7.13]	8.3 [7.5]
	Tukwila-Allentown	8.11 [6.55]	7.51 [7.17]	6.84 [6.79]	7.5 [6.8]
	Seattle-16 th Ave S	DNC	DNC	4.59 [4.59]	*
	Seattle-23 rd Ave SW	DNC	DNC	7.05 [7.05]	*
	Seattle-S Myrtle St	DNC	DNC	4.58 [4.58]	*
South King County	Kent-James & Central	9.25 [8.97]	7.36 [7.36]	DNC	8.3 [8.2]
	Auburn-29 th St	8.88 [6.86]	6.93 [6.38]	5.99 [5.92]	7.3 [6.4]
South and East Tacoma	Tacoma-S 36 th St	8.34 [6.93]	6.43 [6.14]	4.71 [4.71]	6.5 [5.9]
	Tacoma-L Street	8.70 [7.23]	7.18 [6.89]	5.11 [5.07]	7.0 [6.4]
Northeast Puyallup	Puyallup-Pioneer Way E	DNC	DNC	8.06 [8.06]	*

Community Name	Monitoring Site	2022	2023	2024	2024 Design Value
Vancouver	Vancouver-NE 84 th Ave	7.70 [6.88]	6.40 [6.22]	4.45 [4.35]	6.2 [5.8]

Italics indicate incomplete annual data, DNC = data not collected, NAAQS = national ambient air quality standards, PM = particulate matter, $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter, * = incomplete data for 3-year design value

Health impacts

PM_{2.5}

Yearly exposure

Among all 16 overburdened communities highly impacted by air pollution (OBCs), we estimated 430 deaths by any cause among adults 18-84 years old (42 deaths per 100,000 population) associated with annual PM_{2.5} exposure per year (Table 8). Among older adults ages 65–99 years old, we estimated 261 total deaths (137 deaths per 100,000) each year associated with annual PM_{2.5} exposure (Table 9).

The communities with the highest estimated number of deaths per population associated with yearly PM_{2.5} exposure among 18–84-year-olds were:

- East Yakima: 78 deaths per 100,000 population
- Lower Yakima Valley: 56 deaths per 100,000 population
- Spokane and Spokane Valley: 56 deaths per 100,000 population

Complete findings on health impacts of PM_{2.5} in specific communities can be found in their respective Community Reports (Appendix E).

Age-adjusted rates are the most appropriate comparison to statewide rates given that they are standardized to match the statewide age distribution. Figure 9 shows the unadjusted and age-adjusted mortality rates by any cause associated with yearly PM_{2.5} exposure among adults ages 18-84 years old in OBCs compared to statewide. We estimated the age-adjusted rate for OBCs to be 48 [95% CI: 35-61] deaths per 100,000 population compared to 27 [95% CI: 19-34] deaths per 100,000 population statewide (Figure 9).

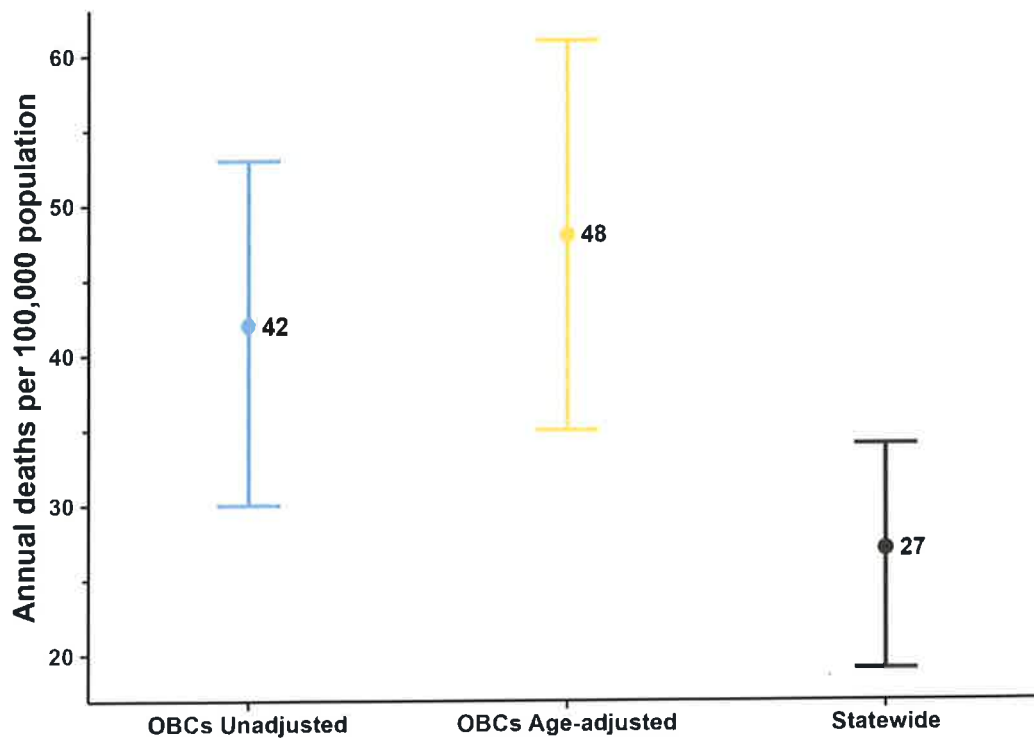


Figure 9. Unadjusted and adjusted PM_{2.5} associated annual, mortality rates by any cause for all 16 overburdened communities highly impacted by air pollution compared to the statewide average based on the study of Pope et al., 2019¹⁴⁸, 2022-2023. Bars indicate 95% confidence intervals.

Among different racial and ethnic groups (Table 8), we estimated the highest rate of PM_{2.5} related deaths by any cause per year among non-Hispanic Black people (54 annual deaths per 100,000 population) and non-Hispanic white people (53 annual deaths per 100,000 population) in the 16 OBCs. However, the annual age-adjusted mortality rate, which accounts for the ages of people in each racial and ethnic group, was highest among Hispanic people (85 deaths per 100,000 population) and non-Hispanic Black people (71 deaths per 100,000 population) (Table 8; Figure 9). The age-adjusted mortality rate for non-Hispanic white people was 49 deaths per 100,000 population. These disparities persist among older adults ages 65-99 where the highest age-adjusted mortality rates are among Black and Hispanic people at 308 and 211 deaths per 100,000 population, respectively (Table 9).

¹⁴⁸ Pope, C. A., 3rd, Lefler, J. S., Ezzati, M., Higbee, J. D., Marshall, J. D., Kim, S. Y., Bechle, M., Gilliat, K. S., Vernon, S. E., Robinson, A. L., & Burnett, R. T. (2019). Mortality Risk and Fine Particulate Air Pollution in a Large, Representative Cohort of U.S. Adults. *Environmental Health Perspectives*, 127(7), 77007.

Table 8. Estimated annual deaths by any cause associated with yearly PM_{2.5} exposure among 18–84-year-olds in all 16 overburdened communities highly impacted by air pollution by racial and ethnic group, 2022–2023 (based on effect estimates in study by Pope, et al., 2019).

Racial ¹⁴⁹ and Ethnic Group	Population ¹⁵⁰ (18-84 year-olds)	Annual Number of Deaths [95% CI] ¹⁵¹	Annual Deaths Per 100,000 Population [95% CI]	Age-Adjusted ¹⁵² Annual Deaths Per 100,000 Population [95% CI]
All	1,027,215	430 [310 to 544]	42 [30 to 53]	48 [35 to 61]
Hispanic	215,569	94 [53 to 132]	44 [25 to 61]	85 [48 to 119]
Non-Hispanic AIAN	10,763	5 [-3 to 11]	42 [-29 to 105]	50 [-34 to 124]
Non-Hispanic Asian	116,527	47 [-32 to 119]	40 [-28 to 102]	44 [-30 to 110]
Non-Hispanic Black	79,896	43 [13 to 71]	54 [17 to 89]	71 [22 to 116]
Non-Hispanic NHOPI	16,258	4 [-3 to 10]	25 [-17 to 63]	45 [-31 to 114]
Non-Hispanic 2+ races	57,464	17 [-11 to 42]	29 [-20 to 73]	47 [-32 to 119]
Non-Hispanic White	530,739	279 [182 to 371]	53 [34 to 70]	49 [32 to 66]

AIAN: American Indian and Alaska Native; CI: confidence interval; NHOPI: Native Hawaiian and Other Pacific Islander; PM_{2.5}: Particulate matter with diameter 2.5 micrometers or less

¹⁴⁹ Race categories only include people who identify as non-Hispanic to reflect the race categories used in the study by Pope, et al.

¹⁵⁰ Population is the average of the 2022 and 2023 Washington State Office of Financial Management estimates for the census tracts that comprise overburdened communities.

¹⁵¹ CIs are inversely proportional to population sizes reflecting higher uncertainty when estimating effects with smaller numbers of people. CIs that include 0 indicate that it is plausible that no deaths are associated with PM_{2.5} in this group in this community.

¹⁵² The age-adjusted rate indicates the expected rate if the age distribution in overburdened communities matched that of Washington State.

Table 9. Estimated annual deaths by any cause related to yearly PM_{2.5} exposure among 65–99-year-olds in all 16 overburdened communities highly impacted by air pollution by racial and ethnic group, 2022–2023 (based on effect estimates in study by Di, et al., 2017²³)²³.

Racial ¹⁵³ and Ethnic Group	Population ¹⁵⁴ (65-99 year-olds)	Annual Number of Deaths [95% CI] ¹⁵⁵	Annual Deaths Per 100,000 Population [95% CI]	Age-Adjusted ¹⁵⁶ Annual Deaths Per 100,000 Population [95% CI]
All	190,102	261 [253 to 268]	137 [133 to 141]	134 [130 to 138]
Hispanic	15,098	29 [25 to 33]	192 [166 to 216]	211 [182 to 238]
AIAN	2,843	4 [2 to 5]	128 [79 to 175]	138 [85 to 188]
Asian	23,346	33 [26 to 40]	142 [112 to 170]	139 [110 to 167]
Black	10,679	31 [30 to 32]	290 [279 to 301]	308 [296 to 320]
NHOPI	1,315	2 [1 to 2]	135 [83 to 184]	155 [95 to 211]
2+ races	8,809	12 [7 to 16]	135 [83 to 184]	146 [90 to 199]
White	143,109	141 [136 to 146]	99 [95 to 102]	96 [92 to 99]

AIAN: American Indian and Alaska Native; CI: confidence interval; NHOPI: Native Hawaiian and Other Pacific Islander; PM_{2.5}: Particulate matter with diameter 2.5 micrometers or less

Figure 10 is based on the study by Pope et al. (2019)¹⁴⁸, where AIAN refers to American Indian and Alaska Native; NH to non-Hispanic; and NHOPI to Native Hawaiian and Other Pacific Islander. The bars indicate a 95% confidence interval (CI) for each rate.

¹⁵³ Race categories include Hispanic and non-Hispanic people to reflect the race categories used in the study by Di, et al.

¹⁵⁴ Population is the average of the 2022 and 2023 Washington State Office of Financial Management estimates for the census tracts that comprise overburdened communities.

¹⁵⁵ CIs are inversely proportional to population sizes reflecting higher uncertainty when estimating effects with smaller numbers of people. CIs that include 0 indicate that it is plausible that no deaths are associated with PM_{2.5} in this group in this community.

¹⁵⁶ The age-adjusted rate indicates the expected rate if the age distribution in overburdened communities matched that of Washington statewide.

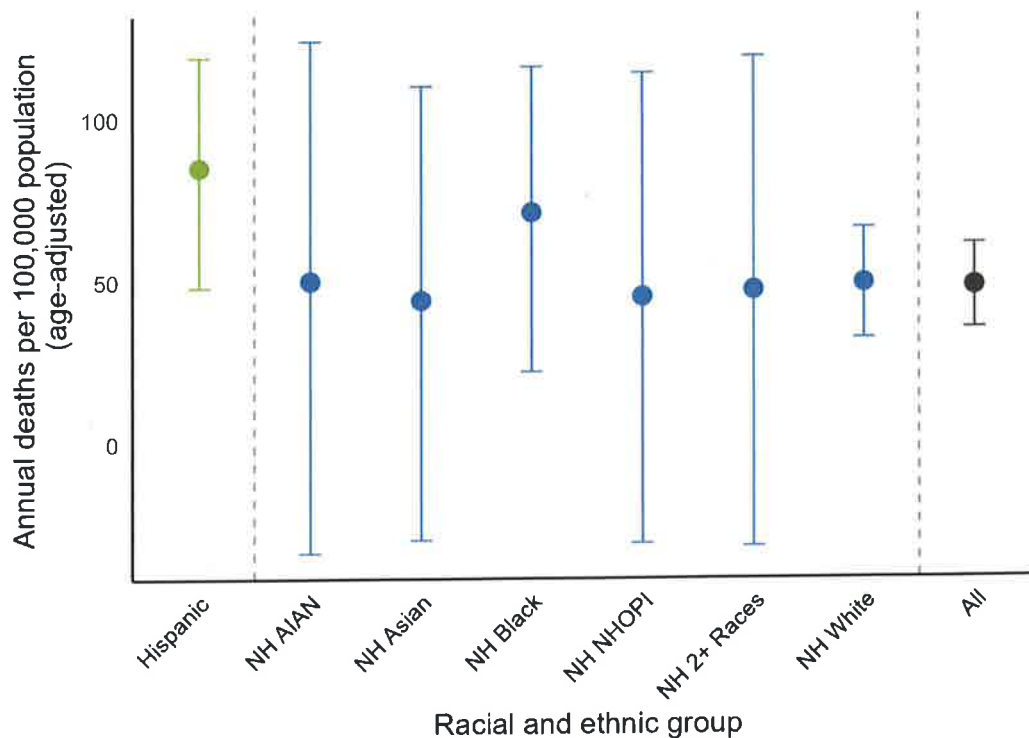


Figure 10. Age-adjusted annual death rates by any cause associated with yearly $PM_{2.5}$ exposure among ages 18-84 by racial and ethnic group in all 16 overburdened communities highly impacted by air pollution.

When assessing specific causes of death related to yearly $PM_{2.5}$ exposure (Table 10), we estimated 129 deaths due to cardiovascular disease (12 deaths per 100,000 population), 126 to 204 deaths due to ischemic heart disease (16 to 25 deaths per 100,000 population), and 21 to 31 deaths per year due to lung cancer (3 to 4 deaths per 100,000 population) among adults in OBCs. The ranges represent variability depending on the study used to develop our health impact functions.

Regarding morbidities, 195 hospital admissions (19 visits per 100,000 population) for acute myocardial infarction were estimated to be associated with yearly $PM_{2.5}$ exposure among all adults (Table 10). Additionally, 108 lung cancer diagnoses per year were associated with yearly $PM_{2.5}$ exposure among adults ages 30-99 (13 diagnoses per 100,000 population) from 2022-2023.

Table 10. Estimated annual mortality and morbidity associated with yearly PM_{2.5} exposure (yearly 24-hour average concentrations) in all 16 overburdened communities highly impacted by air pollution, 2022-2023. Brackets [] include 95% confidence interval.

Health Outcome	Age Group	Source of Risk Estimate	Population	Estimated Annual Number [95% CI]	Estimated Annual Rate Per 100,000 Population [95% CI]	Estimated Age-Adjusted Annual Rate Per 100,000 Population [95% CI]	Estimated Statewide Annual Rate Per 100,000 Population [95% CI]
Deaths – Any cause	65 to 99	Di et al., 2017 ²³	190,102	261 [253 to 268]	137 [133 to 141]	134 [130 to 138]	86 [83 to 88]
Deaths – Any cause	18 to 84	Pope et al., 2019 ¹⁴⁸	1,027,215	430 [310 to 544]	42 [30 to 53]	48 [35 to 61]	27 [19 to 34]
Deaths – Cardiovascular disease	18 to 99	Alexeeff et al., 2023 ¹⁵⁷	1,048,055	129 [50 to 204]	12 [5 to 19]	14 [5 to 22]	8 [3 to 13]
Deaths – Ischemic heart disease	30 to 99	Jerrett et al., 2017 ¹⁵⁸	800,760	135 [101 to 166]	17 [13 to 21]	19 [14 to 23]	10 [8 to 13]
Deaths – Ischemic heart disease	30 to 99	Krewski et al., 2009 ¹⁵⁹	800,760	204 [166 to 239]	25 [21 to 30]	28 [23 to 33]	16 [13 to 19]

¹⁵⁷ Alexeeff SED, K. Van Den Eeden, S. Schwartz, J. Liao, N. S. Sidney, S. Association of Long-term Exposure to Particulate Air Pollution with Cardiovascular Events in California. *JAMA Network Open*. 2023;6(2):e230561.

¹⁵⁸ Jerrett. 2017. Comparing the Health Effects of Ambient Particulate Matter Estimated Using Ground-Based Versus Remote Sensing Exposure Estimates. *Environmental Health Perspectives*. 2017 Apr;125(4):552-559. doi: 10.1289/EHP575. Epub 2016 Sep 9.

¹⁵⁹ Krewski D, Jerrett M, Burnett R, et al. 2009. Extended Follow-Up and Spatial analysis of the American Cancer Society Linking Particulate Air Pollution and Mortality. Health Effects Institute, Cambridge MA

Health Outcome	Age Group	Source of Risk Estimate	Population	Estimated Annual Number [95% CI]	Estimated Annual Rate Per 100,000 Population [95% CI]	Estimated Age-Adjusted Annual Rate Per 100,000 Population [95% CI]	Estimated Statewide Annual Rate Per 100,000 Population [95% CI]
Deaths – Ischemic heart disease	30 to 99	Pope et al., 2019 ¹⁴⁸	800,760	126 [92 to 159]	16 [12 to 20]	17 [13 to 22]	10 [7 to 12]
Deaths – Lung Cancer	30 to 99	Krewski, et al., 2009 ¹⁶⁰	800,760	31 [13 to 48]	4 [2 to 6]	4 [2 to 7]	3 [1 to 4]
Deaths – Lung Cancer	30 to 99	Turner et al. 2016 ¹⁶¹	800,760	21 [6 to 35]	3 [1 to 4]	3 [1 to 5]	2 [1 to 3]
Hospital Admissions – Acute Non-Fatal Myocardial Infarction	18 to 99	Alexeeff, et al. ¹⁵⁷	1,048,055	195 [110 to 275]	19 [10 to 26]	21 [12 to 30]	12 [7 to 17]
Lung Cancer Diagnoses	30 to 99	Gharibvand et al. 2016 ¹⁶²	800,760	108 [35 to 171]	13 [4 to 21]	15 [5 to 24]	9 [3 to 15]

¹⁶⁰ Krewski D, Jerrett M, Burnett R, et al. 2009. Extended Follow-Up and Spatial analysis of the American Cancer Society Linking Particulate Air Pollution and Mortality. Health Effects Institute, Cambridge MA

¹⁶¹ Turner, M.C., Jerrett, M., Pope, C.A., III, Krewski, D., Gapstur, S.M., Diver, W.R., Beckerman, B.S., Marshall, J.D., Su, J., Crouse, D.L., & Burnett, R.T. (2016). Long-term ozone exposure and mortality in a large prospective study. *American Journal of Respiratory Critical Care Medicine* 193(10): 1134-1142.

¹⁶² Gharibvand, L., Shavlik, D., Ghamsary, M., Beeson, W.L., Soret, S., Knutsen, R., & Knutsen, S.F. (2016). The association between ambient fine particulate air pollution and lung cancer incidence: results from the AHSMOG-2 study. *Environmental Health Perspectives* 125 (3): 378?384

CI: confidence interval. CIs are inversely proportional to population sizes reflecting higher uncertainty when estimating effects with smaller numbers of people. CIs that include 0 indicate that it is plausible that no deaths are associated with $PM_{2.5}$ in this group in this community. Population is the average of the 2022 and 2023 Washington State Office of Financial Management estimates for the census tracts that comprise OBCs.

Health outcomes were selected based on the availability of effect estimates for that outcome relevant to the Washington population in the scientific literature. Where multiple effect estimates exist, we listed the model results separately for each. See the Method section for more information.

Age-adjusted rate indicates the expected rate if the age distribution in OBCs matched that of Washington statewide.

Daily exposure

We estimated that daily PM_{2.5} exposure was associated with 8 to 23 deaths by any cause (1 to 12 deaths per 100,000 population), 83 asthma hospital admissions (7 admissions per 100,000 population), 34 to 39 acute non-fatal myocardial infarction hospital admissions (3 to 4 admissions per 100,000 population), 319 to 599 asthma-related ED visits among all people (24 to 44 visits per 100,000 population), and 340 asthma-related ED visits among youths ages 0 to 17 years (112 visits per 100,000 population) (Table 11). Among older adults ages 65-99, daily PM_{2.5} was associated with 157 hospital admissions (82 admissions per 100,000 population) for all respiratory conditions.

Table 11. Estimated annual mortality and morbidity associated with daily PM_{2.5} exposure (daily 24-hour average concentrations) in all 16 overburdened communities highly impacted by air pollution, 2022-2023. Brackets [] include 95% confidence interval.

Health Outcome	Age Group	Source of Risk Estimate	Population	Estimated Annual Number [95% CI]	Estimated annual rate per 100,000 population [95% CI]	Estimated age-adjusted annual rate per 100,000 population [95% CI]	Estimated statewide annual rate per 100,000 population [95% CI]
Deaths – Any cause	0 to 99	Ito et al., 2013 ¹⁶³	1,351,509	8 [0 to 16]	1 [0 to 1]	1 [0 to 1]	0 [0 to 1]
Deaths – Any cause	65 to 99	Zanobetti et al., 2014 ¹⁶⁴	190,102	23 [15 to 31]	12 [8 to 16]	12 [8 to 16]	8 [5 to 10]
Deaths – Cardiovascular disease	0 to 99	Liu et al., 2022 ¹⁶⁵	1,351,509	14 [3 to 25]	1 [0 to 2]	1 [0 to 2]	1 [0 to 1]
Deaths – Respiratory	0 to 99	Liu et al., 2022 ¹⁶⁵	1,351,509	19 [-1 to 37]	1 [0 to 3]	2 [0 to 3]	1 [0 to 2]

¹⁶³Ito, K., Ross, Z., Zhou, J., Nádas, A., Lippmann, M. and Thurston, G.D., 2013. NPACT Study 3. Time-series analysis of mortality, hospitalizations, and ambient PM_{2.5} and its components. National Particle Component Toxicity (NPACT) Initiative. <https://www.healtheffects.org/publication/national-particle-component-toxicity-npact-initiative-integrated-epidemiologic-and>

¹⁶⁴Zanobetti, A., Dominici, F., Wang, Y. and Schwartz, J.D., 2014. A national case-crossover analysis of the short-term effect of PM_{2.5} on hospitalizations and mortality in subjects with diabetes and neurological disorders. *Environmental Health*, 13(1), p.38.

¹⁶⁵Liu, R.A., Wei, Y., Qiu, X., Kosheleva, A. and Schwartz, J.D., 2022. Short term exposure to air pollution and mortality in the US: a double negative control analysis. *Environmental Health*, 21(1), p.81.

Health Outcome	Age Group	Source of Risk Estimate	Population	Estimated Annual Number [95% CI]	Estimated annual rate per 100,000 population [95% CI]	Estimated age-adjusted annual rate per 100,000 population [95% CI]	Estimated statewide annual rate per 100,000 population [95% CI]
Hospital Admissions – Acute Non-Fatal Myocardial Infarction	18 to 99	Sullivan et al., 2005 ¹⁶⁶	1,048,055	34 [-44 to 108]	3 [-4 to 10]	4 [-5 to 12]	2 [-3 to 7]
Hospital Admissions – Acute Non-Fatal Myocardial Infarction	18 to 99	Zanobetti et al., 2009 ¹⁶⁷	1,048,055	39 [18 to 59]	4 [2 to 6]	4 [2 to 6]	2 [1 to 4]
Hospital Admissions – All Respiratory	65 to 99	Zanobetti et al., 2009 ^{164,167}	190,102	157 [89 to 221]	82 [47 to 116]	82 [46 to 115]	46 [26 to 65]

¹⁶⁶ Sullivan, J., L. Sheppard, A. Schreuder, N. Ishikawa, D. Siscovick and J. Kaufman. 2005. Relation between short-term fine-particulate matter exposure and onset of myocardial infarction. *Epidemiology*. Vol. 16 (1): 41-8.

¹⁶⁷ Zanobetti, A., Franklin, M., Koutrakis, P. and Schwartz, J., 2009. Fine particulate air pollution and its components in association with cause-specific emergency admissions. *Environmental Health*, 8(1), p.58.

Health Outcome	Age Group	Source of Risk Estimate	Population	Estimated Annual Number [95% CI]	Estimated annual rate per 100,000 population [95% CI]	Estimated age-adjusted annual rate per 100,000 population [95% CI]	Estimated statewide annual rate per 100,000 population [95% CI]
Hospital Admissions – Asthma	0 to 64	Sheppard et al., 2003 ¹⁶⁸	1,161,407	83 [31 to 132]	7 [3 to 11]	7 [3 to 12]	4 [2 to 7]
ED Visits – Asthma	0 to 99	Mar et al., 2010 ¹⁶⁹	1,351,509	599 [150 to 1019]	44 [11 to 75]	44 [11 to 75]	25 [6 to 42]
ED Visits – Asthma	0 to 99	Slaughter, J. C., et al., 2005 ¹⁷⁰	1,351,509	319 [-275 to 869]	24 [-20 to 64]	24 [-20 to 64]	13 [-11 to 36]
ED Visits – Asthma	0 to 17	Norris, G., et al., 1999 ¹⁷¹	303,454	340 [174 to 490]	112 [57 to 162]	112 [57 to 161]	61 [31 to 88]

¹⁶⁸ Sheppard, L. Ambient Air Pollution and Nonelderly Asthma Hospital Admissions in Seattle, Washington, 1987-1994. In: Revised Analyses of Time-Series Studies of Air Pollution and Health. 2003, Health Effects Institute: Boston, MA. p. 227-230.

¹⁶⁹ Mar, T. F., J. Q. Koenig and J. Primomo. 2010. Associations between asthma emergency visits and particulate matter sources, including diesel emissions from stationary generators in Tacoma, Washington. *Inhalation Toxicology*. Vol. 22 (6): 445-8.

¹⁷⁰ Slaughter, J. C., E. Kim, L. Sheppard, J. H. Sullivan, T. V. Larson and C. Claiborn. 2005. Association between particulate matter and emergency room visits, hospital admissions and mortality in Spokane, Washington. *Journal of Exposure Analysis and Environmental Epidemiology*. Vol. 15

¹⁷¹ Norris, G., et al. An association between fine particles and asthma emergency department visits for children in Seattle. *Environmental Health Perspectives*, 1999. 107(6): p. 489-93.

Health Outcome	Age Group	Source of Risk Estimate	Population	Estimated Annual Number [95% CI]	Estimated annual rate per 100,000 population [95% CI]	Estimated age-adjusted annual rate per 100,000 population [95% CI]	Estimated statewide annual rate per 100,000 population [95% CI]
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ED: emergency department; CI: confidence interval. CIs are inversely proportional to population sizes reflecting higher uncertainty when estimating effects with smaller numbers of people. CIs that include 0 indicate that it is plausible that no deaths are associated with PM_{2.5} in this group in this community.

Population is the average of the 2022 and 2023 Washington State Office of Financial Management estimates for the census tracts that comprise OBCs.

Health outcomes were selected based on the availability of effect estimates for that outcome relevant to the Washington population in the scientific literature. Where multiple effect estimates exist, we listed the model results separately for each. See the Method section for more information.

Age-adjusted rate indicates the expected rate if the age distribution in OBCs matched that of Washington statewide.

For both yearly and daily PM_{2.5} exposure, we estimated health outcome rates that were 1.5- to 2-times higher in OBCs compared to statewide. This included deaths by any cause, deaths from ischemic heart disease, and hospital admissions for acute MI related to yearly PM_{2.5} exposure and asthma-related ED visits and hospital admissions for MI, asthma, and all respiratory conditions associated with daily PM_{2.5} exposure.

Ozone

Seasonal exposure

We estimated that O₃ exposure during warm season (May-September) was associated with 67 deaths by any cause among older adults ages 65-99 (33 deaths per 100,000 population) (Table 12).

The communities with the highest estimated number of deaths per population associated with seasonal O₃ exposure among older adults ages 65-99 were:

- Spokane and Spokane Valley: 79 deaths per 100,000 population
- Tri-Cities to Wallula: 74 deaths per 100,000 population
- East Yakima: 73 deaths per 100,000 population

Daily exposure

Daily O₃ exposure was associated with 23 deaths by any cause (2 deaths per 100,000 population) and 689 asthma-related ED visits (51 visits per 100,000 population) among all people in OBCs and 290 respiratory hospital admissions (152 admissions per 100,000 population) among older adults ages 65-99.

Like PM_{2.5} related health impacts, the rates of all examined health outcomes associated with daily and seasonal O₃ exposure are higher in OBCs compared to statewide.

Table 12. Estimated annual mortality and morbidity associated with seasonal and daily O₃ exposure (seasonal and daily 8-hour maximum concentrations) in all 16 overburdened communities highly impacted by air pollution, 2022-2023. Brackets [] include 95% confidence interval.

Health Outcome	Age Group	Source of Risk Estimate	Population	Estimated Annual Number [95% CI]	Estimated annual rate per 100,000 population [95% CI]	Estimated age-adjusted annual rate per 100,000 population [95% CI]	Estimated statewide annual rate per 100,000 population [95% CI]
Deaths – Any cause (Seasonal)	65 to 99	Di, et al., 2017 ²³	190,102	67 [46 to 87]	35 [24 to 46]	33 [23 to 44]	23 [16 to 30]
Deaths – Any cause (Daily)	0 to 99	Zanobetti and Schwartz, 2008 ¹⁷²	1,351,509	23 [12 to 33]	2 [1 to 2]	2 [1 to 3]	1 [1 to 2]
ED Visits – Asthma (Daily)	0 to 99	Mar and Koenig, 2009 ¹⁷³	1,351,509	689 [172 to 1135]	51 [13 to 84]	51 [13 to 84]	31 [8 to 51]

¹⁷² Zanobetti, A. and Schwartz, J., 2008. Mortality displacement in the association of ozone with mortality: an analysis of 48 cities in the United States. *American Journal of Respiratory and Critical Care Medicine*, 177(2), pp.184-189.

¹⁷³ Mar, T.F. and Koenig, J.Q. (2009). Relationship between visits to emergency departments for asthma and ozone exposure in greater Seattle, Washington. *Annals of Allergy, Asthma & Immunology*, 103, 474-479.

Health Outcome	Age Group	Source of Risk Estimate	Population	Estimated Annual Number [95% CI]	Estimated annual rate per 100,000 population [95% CI]	Estimated age-adjusted annual rate per 100,000 population [95% CI]	Estimated statewide annual rate per 100,000 population [95% CI]
Hospital Admissions – All Respiratory (Daily)	65 to 99	Schwartz, 1995 ¹⁷⁴	190,102	290 [83 to 477]	152 [44 to 251]	151 [44 to 249]	96 [28 to 158]

ED: emergency department; CI: confidence interval. CIs are inversely proportional to population sizes reflecting higher uncertainty when estimating effects with smaller numbers of people. CIs that include 0 indicate that it is plausible that no deaths are associated with PM2.5 in this group in this community.

Population is the average of the 2022 and 2023 Washington State Office of Financial Management estimates for the census tracts that comprise OBCs.

Health outcomes were selected based on the availability of effect estimates for that outcome relevant to the Washington population in the scientific literature. Where multiple effect estimates exist, we listed the model results separately for each. See the Method section for more information.

Age-adjusted rate indicates the expected rate if the age distribution in OBCs matched that of Washington statewide.

¹⁷⁴ Schwartz, J., 1995. Short term fluctuations in air pollution and hospital admissions of the elderly for respiratory disease. *Thorax*, 50(5), pp.531-538.

Greenhouse gas emissions

Facilities

Table 13 summarizes the total number of facilities and greenhouse gas emissions in and near each overburdened community highly impacted by air pollution (OBC) in 2022 and 2023. Biogenic carbon (biogenic CO₂)¹⁷⁵ emissions are expected to be partially recaptured as part of the natural carbon cycle. For reporting purposes, biogenic CO₂ is subtracted from total metric tons of CO₂e, even though it has the same atmospheric warming effect as non-biogenic CO₂.

We reviewed data from 165 facilities in 2022 and 166 in 2023. In both reporting years, 49 facilities, or 30%, were within or nearby¹⁷⁶ OBCs. Of the 49 facilities, 22 are covered under the CCA as of 2023. Ecology's 2023 EJ Report included facility emissions from 2020 and 2021. Since 2020, total reported greenhouse gas emissions from facilities within and near OBCs have decreased by 20.3%, and by 6.3% after subtracting biogenic CO₂ emissions.

Some facilities that emit greenhouse gas emissions also emit significant amounts of criteria air pollutants. The proximity of industrial sites to where people live and work can cause public health concerns. Facility locations and additional information are included in each of the Community Reports that are part of this publication.

Table 13. Total number of facilities and greenhouse gas emissions reported in 2022 and 2023 in and nearby each overburdened community highly impacted by air pollution. Biogenic CO₂ is in brackets [].

Community Name	2022 Number of Facilities	2022 Emissions (MT CO ₂ e)	2023 Number of Facilities	2023 Emissions (MT CO ₂ e)
Spokane and Spokane Valley	5	443,941 [149,245]	5	432,774 [147,283]
Tri-Cities to Wallula	9	1,104,535 [385,234]	7	697,423 [228,624]
East Yakima	2	26,444 [0]	2	27,628 [0]

¹⁷⁵ Biogenic carbon refers to greenhouse gases released from the combustion, decomposition, or processing of materials derived from biological sources – such as wood, paper, biomass fuels, agriculture residues, food waste, or biogas. Under the Washington Greenhouse Gas Reporting Program, these emissions are reported separately from fossil-derived emissions because they result from carbon that circulates within the short-term natural carbon cycle rather than long-term carbon stores. Biogenic CO₂ acts the same way in the atmosphere as non-biogenic CO₂. Anthropogenic processes that include these emissions reduce a facility's environmental impact.

¹⁷⁶ "Nearby" refers to facilities within a three-mile radius of the community boundary that were included in this analysis.

Community Name	2022 Number of Facilities	2022 Emissions (MT CO ₂ e)	2023 Number of Facilities	2023 Emissions (MT CO ₂ e)
Lower Yakima Valley	3	61,768 [0]	3	62,347 [0]
Moxee Valley	2	174,253 [0]	2	178,342 [0]
Mattawa	0	0 [0]	0	0 [0]
George and West Grant County	0	0 [0]	0	0 [0]
Ellensburg	1	13,700 [0]	1	12,790 [0]
Wenatchee and East Wenatchee	2	25,291 [0]	2	22,202 [0]
Everett	1	69,711 [0]	1	66,124 [0]
North Seattle and Shoreline	0	0 [0]	0	0 [0]
South Seattle	9	717,063 [0]	9	755,589 [0]
South King County	3	66,302 [0]	3	64,784 [0]
Northeast Puyallup	2	47,294 [0]	2	62,121 [0]
South and East Tacoma	6	1,192,728 [853,428]	7	920,753 [568,579]
Vancouver	4	695,179 [0]	5	736,686 [0]
Total	49	4,638,209 [1,387,907]	49	4,039,563 [944,486]

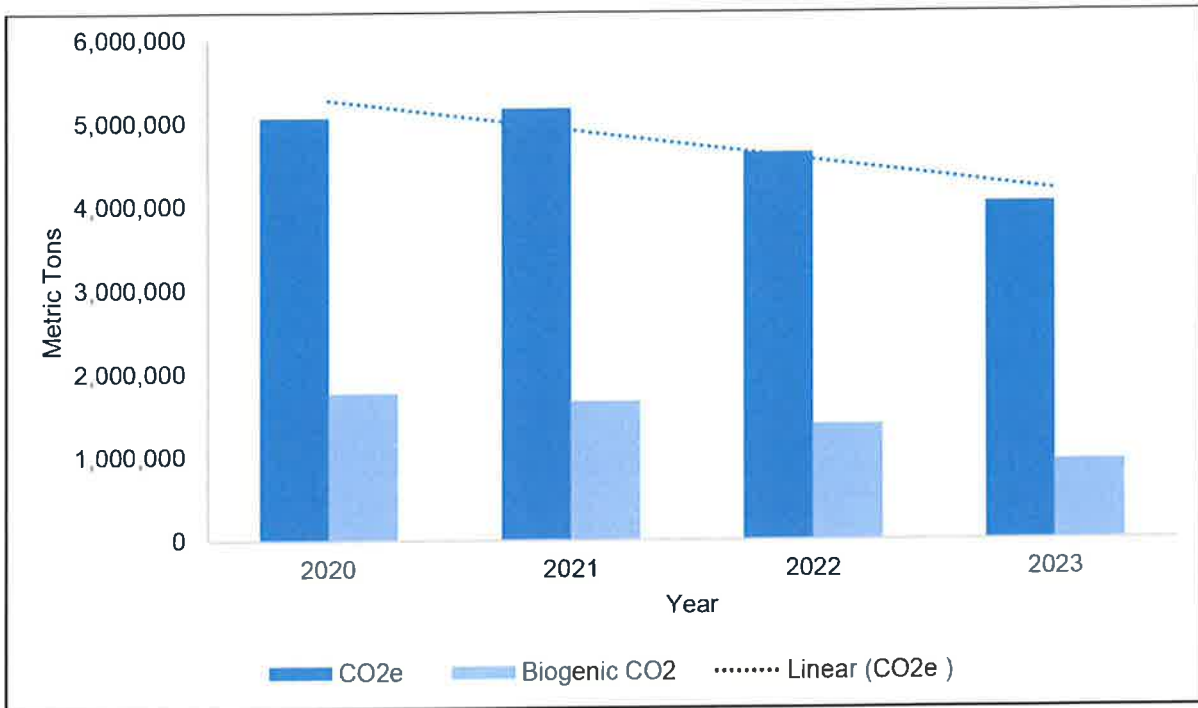


Figure 11. Comparison of annual CO₂e and biogenic CO₂ in metric tons (MT) from greenhouse gas reporting facilities that are in and nearby overburdened communities highly impacted by air pollution, 2020-2023.

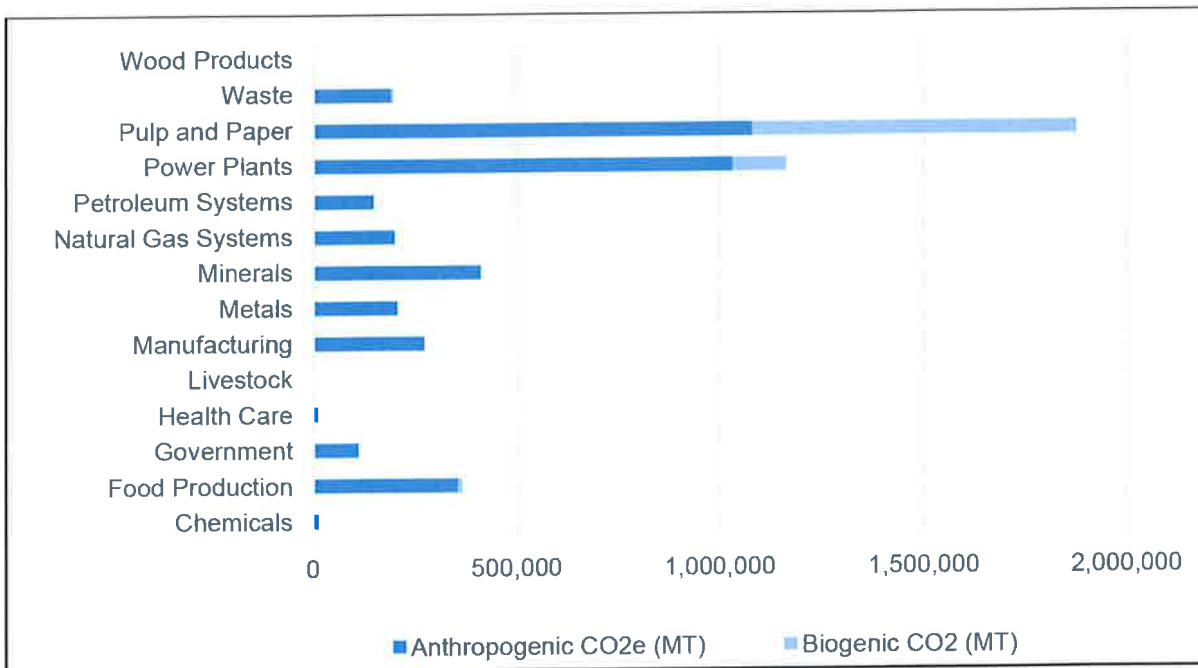


Figure 12. 2023 greenhouse gas emissions by facility sector within and nearby overburdened communities highly impacted by air pollution.

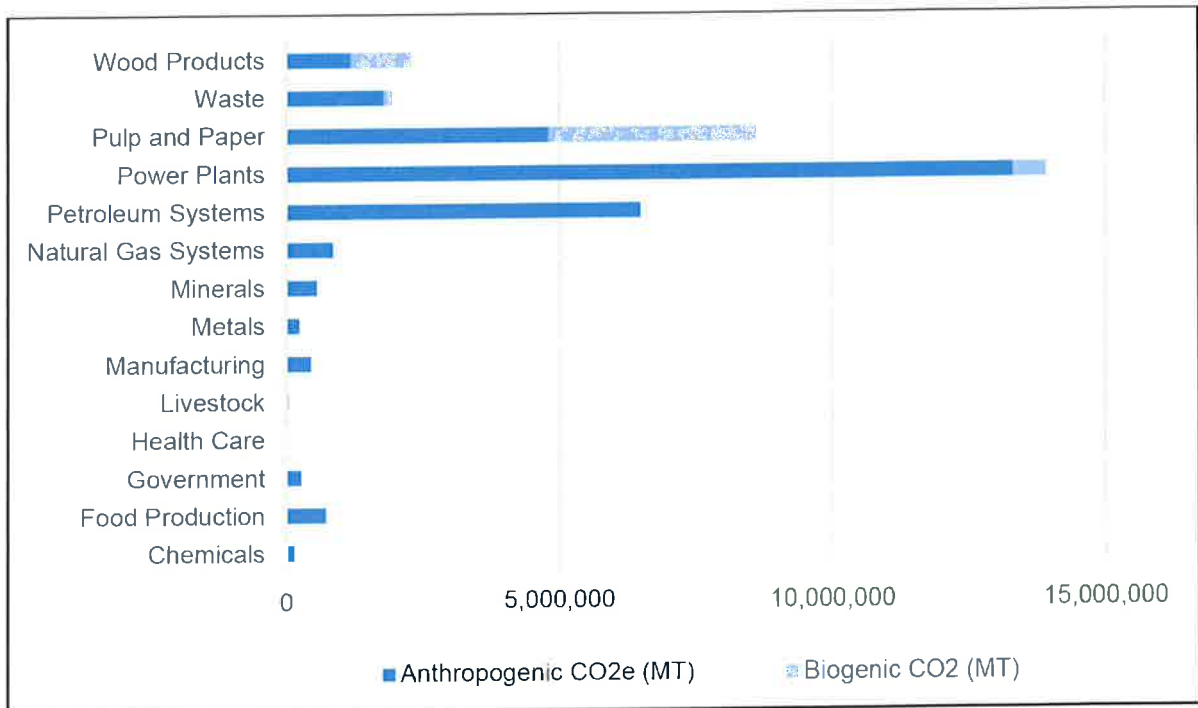


Figure 13. 2023 statewide greenhouse gas emissions by facility sector.

Mobile sources

Mobile sources create greenhouse gases as petroleum fuels are burned. Mobile sources include a variety of vehicles, engines, and equipment that can be categorized as either on-road or non-road.

On-road sources include:

- Passenger cars
- Trucks
- Buses
- Motorcycles

Non-road sources include:

- Marine vessels
- Aircraft
- Locomotives
- Lawn and agriculture equipment
- Construction equipment

- Recreation equipment

Table 14. Greenhouse gas emissions from mobile sources, 2019-2021.

Year	OBC (MT CO ₂ e)	Statewide (MT CO ₂ e)
2019	6,093,191	40,331,455
2020	4,766,401	31,549,052
2021	5,765,927	38,164,967

OBC = overburdened community highly impacted by air pollution

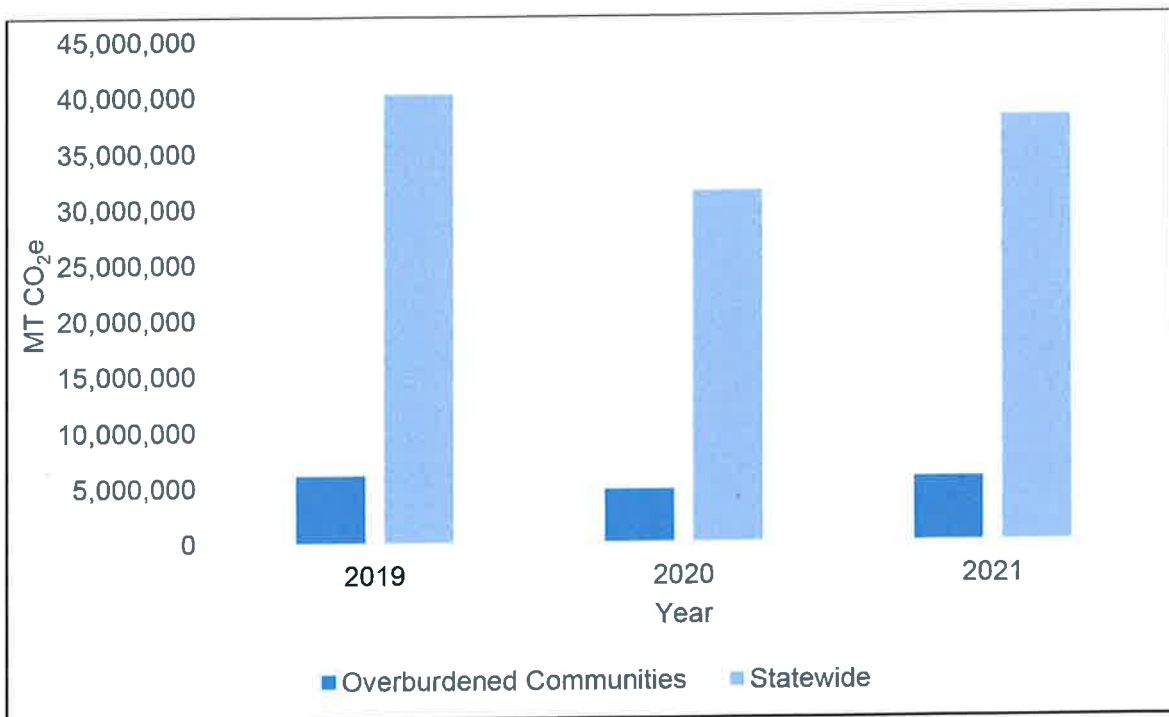


Figure 14. Comparison of annual statewide MT CO₂e from mobile sources to overburdened communities highly impacted by air pollution between 2019-2021.

The COVID-19 pandemic impacted Vehicle Miles Traveled (VMT)¹⁷⁷, and emissions from the transportation sector. According to the Washington State Department of Transportation (WSDOT), there was a 15% decrease in statewide VMT estimates between 2019 and 2020.¹⁷⁸

¹⁷⁷ VMT are used in MOVES to calculate emissions while the vehicle is in motion or during short periods of idling on public roadways. WSDOT makes estimates of county VMT by functional roadway classification using the national Department of Transportation's Highway Performance Monitoring System (HPMS) data.

¹⁷⁸ WSDOT annual mileage and travel information <https://wsdot.wa.gov/about/transportation-data/travel-data/annual-mileage-and-travel-information>

This drop in VMT estimates means that people drove fewer miles on public roadways. This contributed to a decrease in greenhouse gas emissions between 2019 to 2020, which is reflected in the Washington State Greenhouse Gas Emissions Inventory. The emission reductions during this time period are considered a temporary effect of COVID-19.

Listening sessions

Air pollution and health concerns

“When industries are fully operating, black smoke comes out and pollutes the whole area where people live.” – Burien listening session participant

All four pilot listening session participant groups—Burien, Sunnyside and local health jurisdiction (LHJ) staff—mentioned roadway pollution and wildfires as air pollution sources of concern. Additional local sources of concern were air traffic and residential mold for the group in Burien and pesticide application and agricultural burning for the group in Sunnyside. Participants in the sessions with LHJ staff mentioned warehouse traffic, agricultural pollution (including pesticide drift, fertilizers, and odors from dairies), airports, pollen, prescribed burns, industrial facilities, landfills, and seasonal pollutants such as O₃ in warmer months and smoke from wood stoves in colder months. They also mentioned dust, particularly dust spread by trucks on dirt roads and dust storms that occur during strong wind events.

Participants in both the Burien and Sunnyside listening sessions mentioned that air quality is better in the winter and worse in the summer, especially during the hottest times of day and when wildfires are burning. Although discussions focused on air pollution, several participants in both sessions also raised concerns regarding land and water pollution, as well as a shortage of trees and green spaces in their communities.

Participants in listening sessions shared concerns about health impacts for themselves, family members and community members resulting from both acute and long-term exposure to air pollution. All three participant groups brought up asthma numerous times. Participants were concerned with the high prevalence of asthma in their communities, particularly among children, as well as the increased severity of asthma related to air pollution exposure. In both in-person sessions, participants mentioned allergies, the physical and mental health effects of staying indoors during unhealthy air quality events, and the costs of accessing care to treat the effects of air pollution, particularly for people without health insurance.

In the LHJ sessions, local health practitioners shared concerns that included poor air quality, worsening chronic health conditions for people who already have them, and concerns from parents about children breathing polluted air during outdoor sports seasons. In the Burien session, participants expressed interest in knowing how to protect their families from air pollution, as well as concerns about shorter life expectancy in Seattle’s South Park neighborhood, which many had previously heard of. In the Sunnyside session, attendees mentioned eye irritation from heavy air pollution.

Places and populations of concern

Listening session participants shared concerns about places where populations sensitive to air pollution congregate, also known as sensitive receptor locations, as well as places more highly exposed to air pollution. The places mentioned included agricultural fields and areas near them, schools, outdoor sport and recreation facilities, areas near roadways, assisted living facilities, and outdoor events and concerts. One participant mentioned that while rural areas may have fewer industrial facilities than large urban areas, some of the rural facilities have people living close to them who may be highly exposed to air pollution.

Participants also listed groups of people who experience greater vulnerability to air pollution. They mentioned groups more sensitive to air pollution, including children, older adults, pregnant people, people with disabilities, and people with chronic diseases, particularly COPD, asthma, and cardiovascular disease. Among groups more highly exposed to air pollution, participants mentioned children playing sports, people with low incomes, public transit and commercial drivers, unhoused people, and outdoor workers such as agricultural and construction workers.

Strategies for addressing air pollution

Local health jurisdictions serving each of the 16 identified communities are already making efforts to prioritize populations with less access to resources. Staff from all 11 LHJs described actions their organizations are taking to protect residents from harmful air pollution, particularly during wildfire smoke events. Some of the activities they mentioned included:

- Supporting public health messaging for the community
 - Developing general messaging as well as focused messaging for schools
 - Utilizing DOH guidance and National Weather Service materials
 - Posting notices during smoke events with information on how best to protect oneself
- Using different colored flags for different air quality readings
- Distributing box fans, filters, and do-it-yourself fan kits
- Distributing N95 masks and highlighting their use to prevent breathing unhealthy air
- Giveaways through both focused outreach and public events
- Establishing clean air sites and cooling centers with partners such as churches and libraries, focusing on residents who do not have home air filtration
- Multilingual communication
- Partnering with community organizations and other trusted messengers, including healthcare providers, community navigator programs and community health workers
- Calling 911 to be added to the Vulnerable Persons Registry

Participants in the Burien listening session brought up air filters in different ways, including purchasing their own, which can be costly, and sometimes being able to obtain them from community giveaways. They commented that not enough filters are distributed to the people who need them and that many people don't hear about those events. In the Sunnyside listening session, participants mentioned receiving information related to environmental health from local organizations, including how to clean up the yard to avoid fire damage. One person mentioned a box fan distribution in nearby Wapato, outside the identified Lower Yakima Valley community's boundaries. In both in-person sessions, several people said they weren't aware of any available resources. In addition, they shared that they stayed indoors when air quality was especially bad.

Information needs and communication channels

"This is a good time for the Department of Ecology to take note of the most vulnerable neighbors, like us who live in South Park. In what way can we at home take care of our health, which is essential for us? With good health we can work and generate income. Without health we cannot work; we can't pay rent. Many situations can arise in our lives if we don't have good health. Therefore, learning to take care of our family from home with tools the Department of Ecology can give us would be great for everyone." – Burien listening session participant

"We talk a lot about priorities, but I think we, our families, are the priorities with regard to pollution, because it really affects our health, our children, adults, all families, really. We are a priority. I would also like for the Department of Ecology to give us tools for how we can help, how we can stop polluting and take care of ourselves at home." – Burien listening session participant

Listening session participants expressed a need for more accessible, concise and precise materials about air quality and health that use easy-to-understand language. They also discussed topics on which they would like to have more information available, which largely fell into two categories:

- Air monitoring
 - How to read and interpret air monitoring data, including the Air Quality Index
 - More distributed monitor capacity—participants pointed out that when very limited sensors are used to cover large areas, data is unreliable and puts credibility at risk
 - More widespread ability to measure CAPs other than PM, e.g. O₃ monitors
 - Explaining types of sensors and comparing quality or ease of use
 - Monitoring for ultrafine particles
 - More accurate or reliable data about pollution from industrial sources to be able to confidently provide health guidance to residents

- Air pollution impacts on health
 - Better understanding how air quality and prolonged exposure impact the prevalence of certain diseases or increase the health burden of asthma, especially for people who are more sensitive to negative impacts
 - Identifying where risk factors (e.g. elevated pollution levels, sensitive populations) overlap and developing targeted messaging
 - Creating or co-creating messaging for health care providers which reflect how people talk about air pollution in public spaces or at the dinner table
 - Specifying local pollution sources and describing how they affect human health

Participants also discussed effective communication tools and strategies to disseminate information in their local communities. These included the following:

- Local radio and TV, including Spanish radio
- Local newspapers
- Newsletters
- Schools, both through environmental education in class and distribution of materials
- Flyers at kiosks/community billboards
- Word of mouth
- Door-to-door education
- Social media, including videos
- Webpages, including dedicated wildfire smoke pages
- Mobile applications

Discussion

The 2023 EJ Report included ‘Next Steps’ that recommended the expansion and strengthening of the data analysis in subsequent publications of the biennial report. The 2025 EJ Report sought to address many of these recommendations in the following ways:

- Increase the spatial granularity of monitoring data: since 2023, the Department of Ecology has installed 45 new air monitors and sensors in or near overburdened communities highly impacted by air pollution (OBCs). Data collected through the end of 2024 from these monitors and sensors are included in this report.
- Account for wildfire smoke in the analysis: we reported PM_{2.5} concentrations both with wildfire days included and excluded to show the relative impact of wildfire smoke on air quality in OBCs.

- Expand analysis of the health impacts of CAPs: this report included the analysis of both the short-term and yearly health impacts of exposure to PM_{2.5} and O₃, including mortality and morbidity health outcomes. We included more recent years of mortality data (2022 and 2023) and calculated age- and race-adjusted mortality rates. We refined this analysis by using risk estimates that are specific to the Pacific Northwest and Northern California, which have similar socio-demographic compositions to Washington.
- Include socio-cultural information and incorporate qualitative research methodologies: we expanded our reporting of socio-cultural information. This information was gathered by community engagement specialists from the Departments of Health and Ecology, provided by community partners and organizations, or gained through the pilot listening sessions. The pilot sessions gathered information about community members' concerns, priorities, and strategies for addressing air quality and health. What we learned is reflected in the South Seattle and Lower Yakima Valley Community Reports, statewide listening session results, and the format and content of the EJ Report.
- Report levels of greenhouse gas emissions in communities: Ecology leveraged information from the statewide greenhouse gas inventory and greenhouse gas reporting program. One goal is to provide more information at community-level scales in future reports.

Criteria air pollution

This is the first EJ Report to include data from PM_{2.5} monitors and sensors within all 16 overburdened communities highly impacted by air pollution (OBCs). Some of these PM_{2.5} monitors and sensors were installed in late 2023 and 2024, so this report does not include three comprehensive years of data from each community. The next publication of the EJ Report will include monitoring data from 2024-2026, so there will be at least one reporting period of data available from nearly all the OBCs. This will provide more robust information for Ecology to report on trends in PM_{2.5} levels over time.

Overall, annual and daily levels of PM_{2.5} were lower in the 2022-2024 reporting period compared to 2020-2022. This may be attributed to the lesser impact of wildfire smoke on Washington in 2023 and 2024. Other criteria air pollutants that are monitored in the OBCs were below the NAAQS.

The 2025 Environmental Justice Report uses updated methods to report CAPs concentrations in OBCs. The 2023 report included modeled NO₂ data from Community-LINE (C-LINE) source model and O₃ concentrations from the NW-AIRQUEST Regional Background Concentration tool.¹⁷⁹ The models' data sources and tools have not been updated since the publication of the 2023 report. While modeling of NO₂ and O₃ concentrations for the 2025 report would have provided more extensive estimates of CAPs concentration levels, these values would not have had the same degree of accuracy as values reported from CAPs monitors.

¹⁷⁹ NW-AirQuest Regional Background Concentration tool, Background Concentrations 2014-2017
<https://idahodeq.maps.arcgis.com/apps/MapSeries/index.html?appid=0c8a006e11fe4ec5939804b873098dfe>

Therefore, this report includes CAPs concentrations data from only the Washington Network. The CAPs concentrations included in this report are the most up-to-date and accurate values available in Washington.

Health impacts

The first EJ Report published in 2023 focused on mortality associated with long-term (yearly) PM_{2.5} exposure.¹⁸⁰ In this second iteration of the report, we expand the scope of our health impacts assessment by including a second criteria air pollutant (O₃), estimating health impacts of both daily and yearly pollutant exposure, and including morbidities as health outcomes, including hospital admissions, ED visits, and cancer diagnoses. Because the methodology for producing the pollution concentration estimates for the BenMAP-CE modeling is different between the two reports, the health impact results from 2023 should not be directly compared to those included in this report.

Using EPA analytic tools, we estimated 430 deaths by any cause each year were associated with yearly PM_{2.5} exposure among adults ages 18-84 in overburdened communities highly impacted by air pollution (OBCs) and 261 deaths by any cause among older adults ages 65-99 during 2022-2023. In the 18-84 age group, the age-adjusted mortality rate associated with yearly PM_{2.5} exposure was nearly twice the statewide rate (48 vs 27 deaths per 100,000 population).

As in the 2023 health impacts assessment,¹⁸¹ we found that Hispanic and Black individuals had the highest age-adjusted mortality rates associated with yearly PM_{2.5} exposure among all racial and ethnic groups across the OBCs. Communities of color, particularly Black and Hispanic communities, have historically been disproportionately exposed to criteria air pollution in the U.S. A 2021 study found that nearly all PM_{2.5} emitter types contributed to racial disparities for pollutant exposure, regardless of state, urban and rural area, income levels, and exposure levels, demonstrating how pervasive this problem is.¹⁸² Racial inequities in environmental health have roots in discriminatory housing policies, deliberate siting of contaminated sites and industries that generate emissions near communities of color, and other systemically racist practices. Studies have shown that historical redlining and racially restrictive housing covenants, practices that restricted home ownership for predominantly Black communities and

¹⁸⁰ WA Department of Ecology, Air quality studies <https://ecology.wa.gov/research-data/scientific-reports/air-quality-studies>

¹⁸¹ WA Department of Ecology, Improving Air Quality in Overburdened Communities Highly Impacted by Air Pollution: 2023 Report, Washington State Department of Ecology <https://apps.ecology.wa.gov/publications/SummaryPages/2302115.html>

¹⁸² Tessum CW, Paoletta DA, Chambliss SE, Apte JS, Hill JD, Marshall JD (2021) PM_{2.5} polluters disproportionately and systemically affect people of color in the United States. *Sci Adv* 7(18).

other communities of color in the 20th century, are predictive of racial disparities in air pollution exposure and poor health outcomes across the U.S. today.^{183,184}

Our review demonstrates that Black and Hispanic individuals in communities overburdened by air pollution face disproportionate health impacts. These results highlight the need to understand the causes of these disparities, improve access to healthcare services, and reduce air pollution to prevent PM_{2.5} associated death and morbidity in Washington. Given a lack of published studies that assess the health effects of PM_{2.5} and O₃ by racial and ethnic groups in populations applicable to our analysis of WA residents, we were unable to do assessments of racial and ethnic disparities of other health outcomes. We will continue to explore ways to further assess the racial and ethnic health inequities associated with CAP exposure in future reports as new data become available in the scientific literature.

Additionally, our results indicate that PM_{2.5} and O₃ have a broad impact on population health in OBCs that include cause-specific deaths and non-fatal respiratory and cardiovascular conditions among people of all ages. These conditions include deaths from cardiovascular disease, including ischemic heart disease, deaths from lung cancer, hospital admissions associated with acute myocardial infarction, asthma exacerbations, and all respiratory conditions, asthma-related ED visits, and lung cancer diagnoses. Estimated rates of health outcomes were estimated to be higher than the statewide rates for nearly all conditions, suggesting that individuals in OBCs are at higher risk for adverse health conditions that are caused or exacerbated by PM_{2.5} and O₃ exposure.

Some limitations of our analysis should be considered when interpreting our findings:

- We made assumptions about where individuals were exposed to PM_{2.5} and O₃ based on their residential address at the time of the health event. We did not have information to consider exposures at job sites or changes in residence throughout the year. Additionally, we may have misidentified the census tract, and therefore OBC, of residence for individuals with inaccurate, incomplete or missing residential address information in reported health records.

¹⁸³ Lane HM, Morello-Frosch R, Marshall JD, Apte JS (2022) Historical redlining is associated with present-day air pollution disparities in U.S. cities. *Environ Sci Technol Lett* 9(4):345–350

¹⁸⁴ West KL, Allen E, LaPlante A, Durben AN, Palma VD (2024) Lasting legacy: the enduring relationship between racially restrictive housing covenants and health and wellbeing. *J Urban Health* (Preprint).

- The health impact functions used in our model are based on the best information available in the literature on the relationship between PM_{2.5} and O₃ and respective health outcomes. The underlying studies might have methodological limitations that bias the resulting effect estimates, include a population that is not generalizable statewide, or contain results that are out of date. This could lead to either overestimation or underestimation of the calculated numbers of outcomes associated with PM_{2.5} or O₃ concentrations in OBCs. Additionally, estimates for the same or related outcome representing different age groups are not directly comparable. This is due to differences in the underlying studies, including different geographies representing populations with different rates of health conditions, different time periods, and different sources and toxicities of PM_{2.5}.
- BenMAP-CE does not have the functionality to include daily health data for daily exposure analyses. Rather it assumes uniform daily rates based on the yearly average baseline rate. This is not representative of the variable risk of health outcomes throughout the year, where there are seasonal patterns, and likely introduces bias into our estimates.
- Each of the health datasets comes with its own limitations. ED visit data used for this analysis comes from the Washington state syndromic surveillance system which provides a near real-time summary of activity in healthcare facilities statewide. Records do not undergo a review or validation process before being reported, which can result in misclassification of diagnoses and other clinical information assigned to some records.
- Our analysis was limited to health outcomes for which there are concentration response functions in the published literature among study populations that are somewhat comparable to Washington's population (i.e., national population-based surveys and studies conducted in the Pacific Northwest region). Therefore, it excludes certain health conditions linked to PM_{2.5} and O₃ exposure, such as renal conditions, adverse pregnancy outcomes, and neurocognitive conditions. We will continue to review the scientific literature to identify new health outcomes to include in our analysis, as well as identify more appropriate and rigorous scientific studies for health outcomes we did include.

Greenhouse gas emissions

While the Climate Commitment Act (CCA) directs Ecology to ensure that the Cap-and-Invest Program achieves emissions reductions and to report greenhouse gas levels in the overburdened communities highly impacted by air pollution (OBCs), it does not require Ecology to develop a comprehensive local inventory for each of the 16 communities. The Cap-and-Invest Program tracks covered entities and their greenhouse gas reductions while generating pass-through funding for climate pollution reduction projects and implementing climate and air quality policies. The greenhouse gas information provided in this report aligns with the CCA's requirements.

The OBCs have unique boundaries, some encompassing multiple or partial counties and cities. Because of this complexity, it would be difficult to meaningfully quantify greenhouse gas inventories for each OBC. Some county- and city-wide greenhouse gas inventories already exist

throughout the state, with more expected to be published to measure progress toward climate protection goals and to inform local climate action plans.

Greenhouse gases primarily influence the global atmosphere but also have local implications through associated co-pollutants and localized climate effects. In future reports, we plan to include additional information on greenhouse gas trends and emission reductions related to air quality and climate programs, grant projects, and policies occurring within the communities.

Next Steps

Ecology, in consultation with DOH, will continue to expand and improve our analysis for future publications of the biennial EJ Report. The next report will be published by December 31, 2027. We will seek to improve the EJ Report in the following ways:

- Partner with Tribes highly impacted by air pollution who have signed MOUs with Ecology to develop Tribe-specific air quality and health reports for partnering Tribes. We intend to engage with Tribes through government-to-government meetings to develop agreements for data collection, analysis, and dissemination process for forthcoming publications of the EJ Report. Ecology and DOH are collaborating to maintain respect for each Tribe's data sovereignty protocols.
- Disseminate the report to communities that are overburdened and highly impacted by air pollution. Share results in accessible and meaningful ways.
- Develop further greenhouse gas analyses. Explore additional sources of data for inclusion in the report.
- Evaluate impacts of cap-and-invest on emissions from covered entities in overburdened communities highly impacted by air pollution.
- Explore additional data resources and tools for reporting CAPs levels. As the Washington Network expands, we will include data from additional monitors.
- Pursue additional methods for understanding the health impacts of cumulative air pollution exposure in multiple ways. First, we will explore the inclusion of new data sources to expand the types of health outcomes we are including in the report. We will also complete a literature review to identify new studies that we can apply to our health impact assessment. Additionally, we will explore the development of Washington-specific effect estimates for our model inputs using state-level data to limit reliance on studies from populations outside of Washington. We will additionally look at the co-impacts of greenhouse gas and criteria air pollution on human health.

Appendix A. National Ambient Air Quality Standards

Table A1. National Ambient Air Quality Standards.¹⁸⁵

Pollutant	Primary/ Secondary	Averaging Time	Level	Form
Carbon Monoxide (CO)	Primary	8 hours	9 ppm	Not to be exceeded more than once per year
	Primary	1 hour	35 ppm	Not to be exceeded more than once per year
Lead (Pb)	Primary and secondary	Rolling 3 month average	0.15 µg/m ³ (1)	Not to be exceeded
Nitrogen Dioxide (NO₂)	Primary	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	Primary and secondary	1 year	53 ppb (2)	Annual Mean
Ozone (O₃)	Primary and secondary	8 hours	0.070 ppm (3)	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
Particle Pollution (PM_{2.5})	Primary	1 year	9.0 µg/m ³	annual mean, averaged over 3 years
	Secondary	1 year	15.0 µg/m ³	annual mean, averaged over 3 years
	Primary and secondary	24 hours	35 µg/m ³	98th percentile, averaged over 3 years

¹⁸⁵ [NAAQS Table | US EPA](#)

Pollutant	Primary/ Secondary	Averaging Time	Level	Form
Particle Pollution (PM₁₀)	Primary and secondary	24 hours	150 µg/m ³	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide (SO₂)	Primary	1 hour	75 ppb (4)	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	Secondary	1 year	10 ppb	annual mean, averaged over 3 years

Appendix B. Air Quality Index

Table B1. Air Quality Index.¹⁸⁶

Air Quality Index Level	24-hour PM _{2.5}	24-hour PM ₁₀	8-hour O ₃	8-hour Carbon Monoxide	1-hour Sulfur Dioxide	1-hour Nitrogen Dioxide
Good (Green)	0-9.0 µg/m ³	0-54 µg/m ³	0-54 ppb	0-4.4 ppm	0-35 ppm	0-53 ppb
Moderate (Yellow)	9.1-35.4 µg/m ³	55-154 µg/m ³	55-70 ppb	4.5-9.4 ppm	36-75 ppm	54-100 ppb
Unhealthy for Sensitive Groups (Orange)	35.5-55.4 µg/m ³	155-254 µg/m ³	71-85 ppb	9.5-12.4 ppm	76-185 ppm	101-360 ppb
Unhealthy (Red)	55.5-125.4 µg/m ³	255-354 µg/m ³	86-105 ppb	12.5-15.4 ppm	186-304 ppm	361-649 ppb
Very Unhealthy (Purple)	125.5-225.4 µg/m ³	355-424 µg/m ³	106-200 ppb	15.5-30.4 ppm	305-604 ppm (24-hour)	650-1249 ppb
Hazardous (Maroon)	≥225.5 µg/m ³	≥425 µg/m ³	≥201 ppb	≥30.5 ppm	≥605 ppm (24-hour)	≥1250 ppb

¹⁸⁶ Air Quality Index [Technical Assistance Document for the Reporting of Daily Air Quality – the Air Quality Index \(AQI\)](#)

Appendix C. Air Quality and Health Eco-Health Relationship



Figure C1. Linkages between air quality and health outcomes (blue arrows) and ecosystems (green arrows). Source: EPA Eco-Health Relationship Browser¹⁸⁷

¹⁸⁷ U.S. EPA EnviroAtlas, Eco-Health Relationship Browser
https://enviroatlas.epa.gov/enviroatlas/Tools/EcoHealth_RelationshipBrowser/

Appendix D. Health Impacts Supplemental Materials

Table D1. Definitions used to identify health outcomes in Washington Department of Health datasets.

Health Outcome	WA DOH Data Source	Fields Used	Definition	Definition Source
Deaths – Any cause	CHS death statistical dataset ¹²⁴	None	Any death record, regardless of cause	None
Deaths – Cardiovascular disease	CHS death statistical dataset ¹²⁴	Cause of death (ACME_Cause_Category 1-20)	If any of the following ICD-10 codes are listed as a cause of death for a person: B33.2 G45 G46.0 G46.1 G46.2 G46.3 G46.4 G46.5 G46.6 G46.7 G46.8 I01 I02.0 I05 I06 I07 I08 I09 I11 I20 I21 I22 I23 I24 I25 I28.0 I28.1 I28.2 I28.3 I28.4 I28.5 I28.6 I28.7 I28.8 I30 I31.0 I31.1 I31.8 I31.9 I32 I33 I34 I35 I36 I37.0 I37.1 I37.2 I37.3 I37.4 I37.5 I37.6 I37.7 I37.8 I38 I39 I40 I41 I42.1 I42.2 I42.3 I42.4 I42.5 I42.6 I42.7 I42.8 I43 I47 I48 I51.0 I51.1 I51.2 I51.3 I51.4 I60 I61 I62 I63 I65 I66 I67.0 I67.1 I67.2 I67.3 I67.5 I67.6 I68.0 I68.1 I68.2 I69.0 I69.1 I69.2 I69.3 I70.2 I70.3 I70.4 I70.5 I70.6 I70.7 I70.8 I71 I72 I73 I77 I78 I79 I80 I81 I82 I83 I86 I87 I88 I89.0 I89.9 I98 K75.1	BenMAP-CE user manual, Table D-2: https://www.epa.gov/benmap/benmap-ce-manual-and-appendices
Deaths – Ischemic heart disease	CHS death statistical dataset ¹²⁴	Cause of death (ACME_Cause_Category 1-20)	If any of the following ICD-10 codes are listed as a cause of death for a person: I20 I21 I22 I23 I24 I25	BenMAP-CE user manual, Table D-2: https://www.epa.gov/benmap/benmap-ce-manual-and-appendices

Health Outcome	WA DOH Data Source	Fields Used	Definition	Definition Source
Deaths – Lung Cancer	CHS death statistical dataset ¹²⁴	Cause of death (ACME_Cause_Category 1-20)	If any of the following ICD-10 codes are listed as a cause of death for a person: C30 C31 C32 C33 C34 C35 C36 C37 C38 C39	BenMAP-CE user manual, Table D-2: https://www.epa.gov/benmap/benmap-ce-manual-and-appendices
Deaths – Respiratory	CHS death statistical dataset ¹²⁴	Cause of death (ACME_Cause_Category 1-20)	If any of the following ICD-10 codes are listed as a cause of death for a person: J00 J01 J02 J03 J04 J05 J06 J09 J10 J11 J12 J13 J14 J15 J16 J17 J18 J19 J20 J21 J22 J23 J24 J25 J26 J27 J28 J29 J30 J31 J32 J33 J34 J35 J36 J37 J38 J39 J40 J41 J42 J43 J44 J45 J46 J47 J48 J49 J50 J51 J52 J53 J54 J55 J56 J57 J58 J59 J60 J61 J62 J63 J64 J65 J66 J67 J68 J69 J70 J71 J72 J73 J74 J75 J76 J77 J78 J79 J80 J81 J82 J83 J84 J85 J86 J87 J88 J89 J90 J91 J92 J93 J94 J95 J96 J97 J98	BenMAP-CE user manual, Table D-2: https://www.epa.gov/benmap/benmap-ce-manual-and-appendices
Hospital Admissions – Acute Non-Fatal Myocardial Infarction	CHARS ¹²⁵	Diagnostic categories (DIAG1-DIAG25)	If any of the following ICD-10 diagnostic codes are assigned to a patient's hospitalization record: I21 I22	IHME diagnostic code list: https://ghdx.healthdata.org/record/ihme-data/gbd-2017-cause-icd-code-mappings

Health Outcome	WA DOH Data Source	Fields Used	Definition	Definition Source
Hospital Admissions – Asthma	CHARS ¹²⁵	Diagnostic categories (DIAG1-DIAG25)	If any of the following ICD-10 diagnostic codes are assigned to a patient's hospitalization record: J45 J46.0	IHME diagnostic code list: https://ghdx.healthdata.org/record/ihme-data/gbd-2017-cause-icd-code-mappings
Hospital Admissions – All Respiratory	CHARS ¹²⁵	Diagnostic categories (DIAG1-DIAG25)	If any of the following ICD-10 diagnostic codes are assigned to a patient's hospitalization record: J00 J01 J02 J03 J04 J05 J06 J09 J10 J11 J12 J13 J14 J15 J16 J17 J18 J19 J20 J21 J22 J23 J24 J25 J26 J27 J28 J29 J30 J31 J32 J33 J34 J35 J36 J37 J38 J39 J40 J41 J42 J43 J44 J45 J46 J47 J48 J49 J50 J51 J52 J53 J54 J55 J56 J57 J58 J59 J60 J61 J62 J63 J64 J65 J66 J67 J68 J69 J70 J71 J72 J73 J74 J75 J76 J77 J78 J79 J80 J81 J82 J83 J84 J85 J86 J87 J88 J89 J90 J91 J92 J93 J94 J95 J96 J97 J98	IHME diagnostic code list: https://ghdx.healthdata.org/record/ihme-data/gbd-2017-cause-icd-code-mappings

Health Outcome	WA DOH Data Source	Fields Used	Definition	Definition Source
ED Visits – Asthma	RHINO ¹²⁶	Chief complaint and discharge diagnosis (CCDD) field	Search CC and DD Field: (^asthma^,or,^[;/ asma^,or,asma^,or,^asthama^,or,^asthma^,or,^asthmia^ ,or,^bronchospasm^,or,(, (^Airway^,or,^Disease^),AND, ^Reactive^),or,(^Airway^,AND,^Disease^),),or,^J45^,or,^ [; /]281239006^,or,^[; /]195967001^,or,^[; /]708038006^,or,^[; /]405944004^,or,^[; /]708090002^,or,^[; /]56018004^,or,^[; /]304527002^,or,^[; /]1751000119100^,or,^[; /]401000119107^,or,^[; /]426979002^,or,^[; /]409663006^,or,^[; /]266364000^,or,^[; /]31387002^,or,^[; /]389145006^,or,^[; /]442025000^,or,^[; /]708093000^,or,^[; /]135171000119106^,or,^[; /]99031000119107^,or,^[; /]135181000119109^,or,^[; /]425969006^,or,^[; /]370218001^,or,^[; /]57546000^,or,^[; /]312453004^,or,^[; /]707446004^,or,^[; /]427295004^,or,^[; /]370219009^,or,^[; /]233678006^,or,^[; /]195949008^,or,^[; /]707447008^,or,^[; /]707445000^,or,^[; /]233683003^,or,^[; /]708094006^,or,^[; /]55570000^,or,^[; /]426656000^,or,^[; /]707980005^,or,^[; /]390798007^,or,^[; /]5281000124103^,or,^[; /]370221004^),ANDNOT,^not asthma^	National Syndromic Surveillance Program Community of Practice: https://knowledgerepository.syndromicsurveillance.org/cdc-asthma-ccdd-v1

Health Outcome	WA DOH Data Source	Fields Used	Definition	Definition Source
Lung Cancer Diagnoses	WSCR ¹²⁷	ICD-O-3 site code (primarySite); NCI SEER Cancer Site	primarySite has ICD-O-3 code C34.0-C34.9, excluding histology codes 9140, 9050-9055 and 9590-9993 NCI SEER Cancer Site: "Lung and bronchus"	Gharibvand, et al. 2017. <i>Environ Health Perspect.</i> 2017 Mar;125(3):378-384 https://pubmed.ncbi.nlm.nih.gov/27519054/

CHARS: Comprehensive Hospital Abstract Reporting System; CHS: Center for Health Statistics; ED: Emergency department; ICD: International Classification of Diseases; IHME: Institute for Health Metrics and Evaluation; NCI: National Cancer Institute; RHINO: Rapid Health Information Network; SEER: Surveillance, Epidemiology, and End Results Program of the National Cancer Institute; WSCR: Washington State Cancer Registry.

Text D1. Health impact function literature review PubMed search strategy

(particulate matter OR PM_{2.5} OR aerosol OR ozone OR O₃ OR (nitrogen AND (oxides OR oxide OR dioxide)) OR nitric oxide OR NO₂ OR NO_x OR carbon monoxide OR sulfur dioxide OR SO₂ SO_x OR (sulfur AND (oxides OR oxide OR dioxide)) OR NAAQS OR ((air OR airborne) AND criteria) OR "criteria air pollutants" OR "criteria pollutants" OR air pollutants)

AND

(response factor OR response function OR dose response OR concentration-response function OR concentration response function OR odds ratio OR risk ratio OR relative risk OR relative rate OR "RR" OR incidence rate OR "IR" OR incidence rate ratio OR "IRR" OR rate ratio OR hazard ratio OR association)

AND

(Hospitalization OR hospitalized OR emergency department OR emergency room OR inpatient OR inpatients OR outpatient OR outpatient OR outpatient clinics, hospital OR death OR mortality OR mortality rate OR morbidity OR hospital admission)

AND

(Environmental Justice OR disadvantaged OR minority OR overburdened OR socio-demographic OR sociodemographic OR socioeconomic OR disparity OR disparities OR (social AND (position OR hierarchy)) OR race OR ethnicity OR underserved OR disproportionately impacted OR racial groups OR White People [MeSH] OR Black People [MeSH] OR Hispanic [MeSH] or Latino Or Asian People [MeSH] OR American Indian or Alaska Native [MeSH] OR Native Hawaiian or Other Pacific Islander [MeSH] OR Ethnic and Racial Minorities OR vulnerable populations OR Medically Underserved Area)

AND (2020:2024[pdat])

Text D2. Concentration-response literature review risk of bias assessment tool

If a study gets a 'yes' for each of the 6 criteria below they will be determined to have lower risk of bias. If a study gets one or more 'no' they will be determined to be of higher risk of bias.

- Generalizability to Washington population:
 - Yes: Study conducted in Washington, the Pacific Northwest (including Oregon and Idaho), or nationwide in US AND is a representative or population-based sample
 - No: Non-population-based national study OR conducted in state/region outside of the PNW, including settings outside the US
- Participant selection:
 - Yes: For survey-based studies, response rate is higher than 60% AND the attrition rate is less than 20% in follow-up studies
 - No: For survey-based studies, response rate is $\leq 60\%$ AND the attrition rate is $\geq 20\%$ in longitudinal follow-up studies (or no mention of these metrics are made)
 - N/A: Not a survey-based or longitudinal study
- Quality of air pollution data:
 - Yes: Ambient levels of $PM_{2.5}$ and O_3 are estimated from representative monitoring data and/or published and validated air pollution prediction models. If prediction modeling is used, R^2 is reported and is ≥ 0.80 . Spatial resolution of exposure data is reported and is at census tract level or more granular.
 - No: Above criteria are not met (examples include studies that use only the nearest monitoring data to assign exposure to a population)
- Quality of health data:
 - Yes: The health outcome of interest is objectively measured OR taken from medical records OR taken from an appropriate surveillance system OR taken from questionnaires or interviews using a known scale or validated assessment method. Spatial resolution of the health data is reported and is at ZIP code level or more granular.
 - No: None of the above criteria are met
- Accounting for important confounders:
 - Yes: Important confounders are accounted for in the analysis. At a minimum, effect estimates are adjusted for/conditioned on age and sex.
 - No: Does not measure or adjust for confounding variables (or make mention thereof)

- General quality of methods/statistical modeling:
 - Yes: Study design, methods, data, assumptions, limitations are clearly stated. Statistical methods for analyses are appropriate, and the results provide enough precision to support the conclusions
 - No: Significant concerns about one or more of the above study characteristics

Table D2. Health effect estimates (% change) used for yearly PM_{2.5} analysis.

Health Effect	Age Group	Effect Estimate (%) (Mortality/Hospital admissions associated with 10 µg/m ³ increase in annual average PM _{2.5})	Study Region	Source
Death- any cause	18 to 84	1.13 (12% overall increase) among all people; 1.04 (11% increase) among non-Hispanic whites; 1.40 (15% increase) among non-Hispanic Blacks; 0.95 (10% increase) among non-Hispanic Asians, AIAN, NHOPI, and two or more races; 1.82 (20% increase) among Hispanics	Nationwide U.S.	Pope et al., 2019
Death- any cause	65 to 99	0.7 (7.3% overall increase) among older adults; 0.61 (6.3% increase) among non-Hispanic whites; 1.89 (20.8% increase) among non-Hispanic Blacks; 0.92 (9.6% increase) among non-Hispanic Asians, AIAN, NHOPI, and two or more races; 1.1 (11.6% increase) among Hispanics	Nationwide U.S.	Di et al., 2017 ²³
Death- cardiovascular disease	18 to 99	0.77 (8% increase)	Northern California	Alexeeff et al., 2023
Death- ischemic heart disease	30 to 99	2.15 (15% increase)	116 U.S. cities	Krewski et al., 2009
Death- ischemic heart disease	30 to 99	1.31 (14% increase)	Nationwide U.S.	Pope et al., 2019
Death- ischemic heart disease	30 to 99	1.40 (15% increase)	Nationwide U.S.	Jerrett et al., 2017
Death-lung cancer	30 to 99	1.31 (11% increase)	116 U.S. cities	Krewski et al., 2009 ^{Error!} Bookmark not defined.

Health Effect	Age Group	Effect Estimate (%) (Mortality/Hospital admissions associated with 10 µg/m ³ increase in annual average PM _{2.5})	Study Region	Source
Death-lung cancer	30 to 99	0.86 (13% increase)	Nationwide U.S.	Turner et al., 2016
Hospital admissions- acute myocardial infarction	18 to 99	1.13 (12% increase)	Northern California	Alexeeff et al., 2023 ^{Error!} Bookmark not defined.
Lung cancer	30 to 99	3.78 (42% increase)	Nationwide U.S. and 5 Canadian provinces	Gharibvand et al., 2016

AIAN = American Indian and Alaska Native, NHOPI = Native Hawaiian and Other Pacific Islander, PM = particulate matter, µg/m³ = micrograms per cubic meter

Table D3. Health effect estimates used for daily PM_{2.5} analysis.

Health Effect	Age Group	Effect Estimate (%) (Mortality/Hospital admissions associated with 10 µg/m ³ increase in daily PM _{2.5})	Study Region	Source
Death- any cause	0 to 99	0.0145 (NA)% increase	150 cities across U.S. 46 states	Ito et al., 2013
Death- any cause	65 to 99	0.0638 (0.64% increase)	121 U.S. communities	Zanobetti et al., 2014
Death- cardiovascular disease	0 to 99	0.079 (0.79% increase)	7 U.S. states	Liu et al., 2022 ^{Error!} Bookmark not defined.
Death-respiratory disease	0 to 99	0.116 (1.16% increase)	7 U.S. states	Liu et al., 2022
ED visits - asthma	0 to 99	0.56 (4% increase)	Greater Tacoma, Washington	Mar et al., 2010
ED visits - asthma	0 to 17	0.414 (12.1% increase)	Seattle, Washington	Norris, G., et al., 1999

Health Effect	Age Group	Effect Estimate (%) (Mortality/Hospital admissions associated with 10 µg/m ³ increase in daily PM _{2.5})	Study Region	Source
ED visits - asthma	0 to 99	0.271 (3% increase)	Spokane, Washington	Slaughter, J. C., et al., 2005
Hospital admissions-asthma	0 to 64	0.332 (3.4% increase)	Seattle, Washington	Sheppard et al., 2003
Hospital admissions-nonfatal acute myocardial infarction	18 to 99	0.198 (2% increase)	King County, Washington	Sullivan et al., 2005
Hospital admissions-nonfatal acute myocardial infarction	18 to 99	0.225 (2.25% increase)	26 U.S. Communities	Zanobetti et al., 2009
Hospital admissions-all respiratory	65 to 99	0.207 (2.07 % increase)	26 U.S. Communities	Zanobetti et al., 2009 ^{Error!} Bookmark not defined.

ED = emergency department, PM = particulate matter, µg/m³ = micrograms per cubic meter

Table D4. Annual health effect estimates used for seasonal O₃ analysis.

Health Effect	Age Group	Effect Estimate (Mortality associated with 10 ppb increase in O ₃)	Study Region	Source
Death- any cause	65 to 74	0.119 (1.2% increase)	Nationwide U.S.	Di et al., 2017 ^{Error!} Bookmark not defined.
Death- any cause	75 to 84	0.04 (0.4% increase)	Nationwide U.S.	Di et al., 2017 ^{Error!} Bookmark not defined.
Death- any cause	85 to 99	0.149 (1.5% increase)	Nationwide U.S.	Di et al., 2017 ^{Error!} Bookmark not defined.

ED = emergency department, PM = particulate matter, µg/m³ = micrograms per cubic meter

Table D5. Annual health effect estimates used for daily 8-hour maximum O₃ analysis.

Health Effect	Age Group	Effect Estimate (Mortality/hospital admissions associated with 10 ppb increase in daily O ₃)	Study Region	Source
Death- any cause	0 to 99	0.051 (0.32% increase)	48 U.S. cities	Zanobetti and Schwartz, 2008
ED visits - asthma	0 to 99	1.044 (multiple estimated increases in 0 to 17); 0.77 (multiple estimated) increases in 18 to 99	Seattle, Washington	Mar and Koenig, 2009
Hospital admissions-All Respiratory	65 to 99	0.49 (NA%) increase	Tacoma, Washington	Schwartz, 1995

ED = emergency department, PM = particulate matter, ppb = parts per billion

Appendix E. Community Reports

[Ellensburg Community Report](#)¹⁸⁸

[Everett Community Report](#)¹⁸⁹

[George and West Grant County Community Report](#)¹⁹⁰

[South King County Community Report](#)¹⁹¹

[Mattawa Community Report](#)¹⁹²

[Moxee Valley Community Report](#)¹⁹³

[Northeast Puyallup Community Report](#)¹⁹⁴

[North Seattle and Shoreline Community Report](#)¹⁹⁵

[South Seattle Community Report](#)¹⁹⁶

[Spokane and Spokane Valley Community Report](#)¹⁹⁷

[South and East Tacoma Community Report](#)¹⁹⁸

[Tri-Cities to Wallula Community Report](#)¹⁹⁹

[Vancouver Community Report](#)²⁰⁰

[Wenatchee and East Wenatchee Community Report](#)²⁰¹

[East Yakima Community Report](#)²⁰²

[Lower Yakima Valley Community Report](#)²⁰³

¹⁸⁸ <https://apps.ecology.wa.gov/publications/parts/2502037part1.pdf>

¹⁸⁹ <https://apps.ecology.wa.gov/publications/parts/2502037part2.pdf>

¹⁹⁰ <https://apps.ecology.wa.gov/publications/parts/2502037part3.pdf>

¹⁹¹ <https://apps.ecology.wa.gov/publications/parts/2502037part4.pdf>

¹⁹² <https://apps.ecology.wa.gov/publications/parts/2502037part5.pdf>

¹⁹³ <https://apps.ecology.wa.gov/publications/parts/2502037part6.pdf>

¹⁹⁴ <https://apps.ecology.wa.gov/publications/parts/2502037part7.pdf>

¹⁹⁵ <https://apps.ecology.wa.gov/publications/parts/2502037part8.pdf>

¹⁹⁶ <https://apps.ecology.wa.gov/publications/parts/2502037part9.pdf>

¹⁹⁷ <https://apps.ecology.wa.gov/publications/parts/2502037part10.pdf>

¹⁹⁸ <https://apps.ecology.wa.gov/publications/parts/2502037part11.pdf>

¹⁹⁹ <https://apps.ecology.wa.gov/publications/parts/2502037part12.pdf>

²⁰⁰ <https://apps.ecology.wa.gov/publications/parts/2502037part13.pdf>

²⁰¹ <https://apps.ecology.wa.gov/publications/parts/2502037part14.pdf>

²⁰² <https://apps.ecology.wa.gov/publications/parts/2502037part15.pdf>

²⁰³ <https://apps.ecology.wa.gov/publications/parts/2502037part16.pdf>

East Yakima Community 2025 Environmental Justice Report



Publication Information

This report is available on the Department of Ecology's website at <https://apps.ecology.wa.gov/publications/summarypages/2502037.html>

Contact Information

Air Quality Program

P.O. Box 47600

Olympia, WA 98504-7600

Phone: 360-407-6800

Website: [Washington State Department of Ecology](https://www.ecy.wa.gov/)

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Executive Summary

The East Yakima Community Report provides community information, demographic data, greenhouse gas emissions data, and information about criteria air pollutant levels (CAPs) and their health impacts. This document provides information about air quality and health impacts to those who live, work, and play in the East Yakima community.

For more information about the background and methodology of this Community Report, please visit *2025 Environmental Justice Report: Overburdened Communities Highly Impacted by Air Pollution* (2025 EJ Report).



Community Overview

The East Yakima community was identified as overburdened and highly impacted by air pollution because it met the statewide screening criteria based on the Washington Environmental Health Disparities map¹ ranking, the EJScreen demographic index,² and experiences elevated levels of short-term and long-term exposure to fine particulate matter (PM_{2.5}) year-round. Previous modeling results indicate that ozone (O₃) and nitrogen dioxide (NO₂) contribute to the air pollution in this community. Community identification is described in more detail in the [Overburdened Communities Highly Impacted by Air Pollution Story Map](#).

Land Area: 15.8 sq. mi

Population: 59,938

County: Yakima

Municipal Government: Yakima, Union Gap City Councils

Ecology Region: Central

Local Clean Air Authority: Yakima Regional Clean Air Agency

Local Health Jurisdiction: Yakima Health District

Primary Languages Spoken: English, Spanish

Primary pollutant of concern: Short-term PM_{2.5}, long-term PM_{2.5}, cumulative criteria air pollution



Geographic characteristics

East Yakima is in the upper Yakima Valley. It includes most of the mid-sized city of Yakima, which is the largest in Yakima County and one of the most populous in Central Washington. In addition, the designated community contains the neighboring municipality of Union Gap on the south end. It is bounded by Interstate 82 and the Yakima River to the east and State Route 12 and the Naches River to the north.

¹ Washington Environmental Health Disparities map <https://doh.wa.gov/data-and-statistical-reports/washington-tracking-network-wtn/washington-environmental-health-disparities-map>

² EJScreen demographic index <https://www.epa.gov/ejscreen>

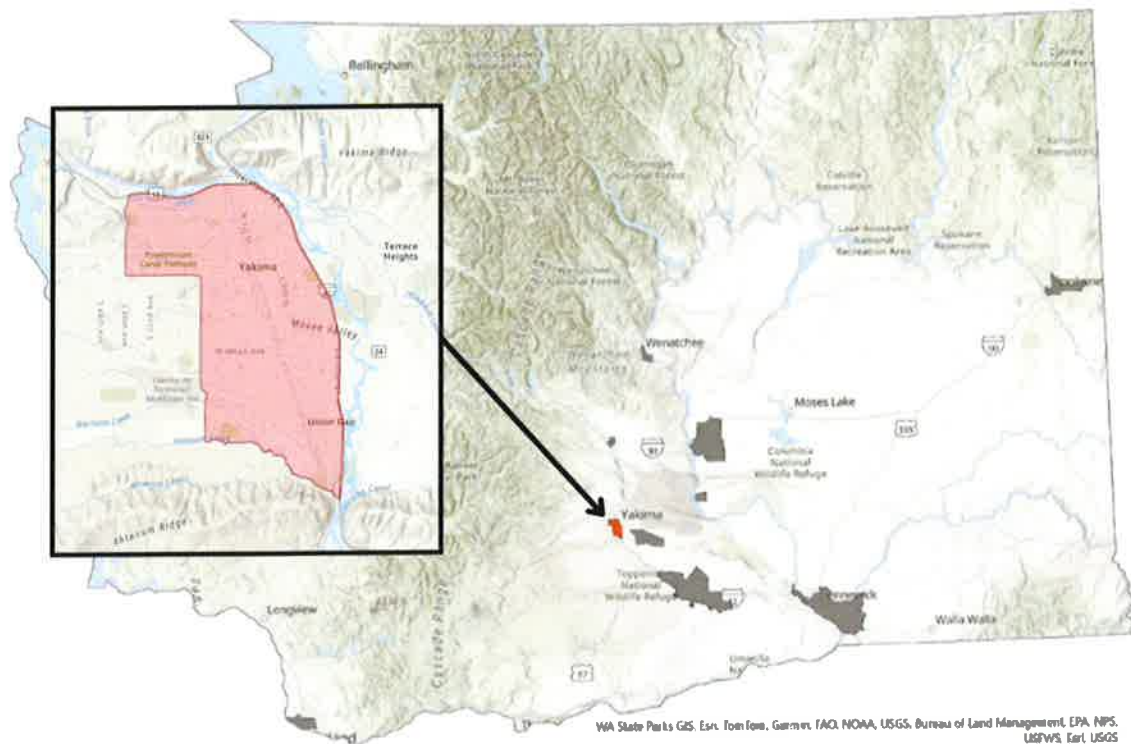


Figure 1. Map of the 16 overburdened communities highly impacted by air pollution in Washington state (gray), with East Yakima highlighted (red).

Socioeconomic characteristics

The community includes a downtown commercial area and mixed single-family and multi-family housing. There are many agricultural and food processing facilities connected to the rail lines that run north-south through the middle of the community. The city of Yakima is surrounded by smaller towns and agricultural lands elsewhere in Yakima County.

Nearly half the population of East Yakima is Hispanic, and over half of households speak a language other than English, predominantly Spanish.^{3,4} The community also has a younger population compared to Washington state; 3 out of 10 residents are children. More than double the statewide average (16%) of residents lack health insurance coverage. East Yakima also has many schools, childcare facilities, health clinics, long-term care facilities, and migrant

³ American Community Survey Data <https://www.census.gov/programs-surveys/acs/data.html>

⁴ WA Office of Financial Management, Estimates of April 1 population by age, sex, race and Hispanic origin <https://ofm.wa.gov/data-research/population-demographics/forecasts-projections/age-sex-race-and-hispanic-origin/information/>

farmworker housing. One-fifth of workers are in natural resources, construction, and maintenance occupations; of these, over half work in agriculture, fishing, and forestry.

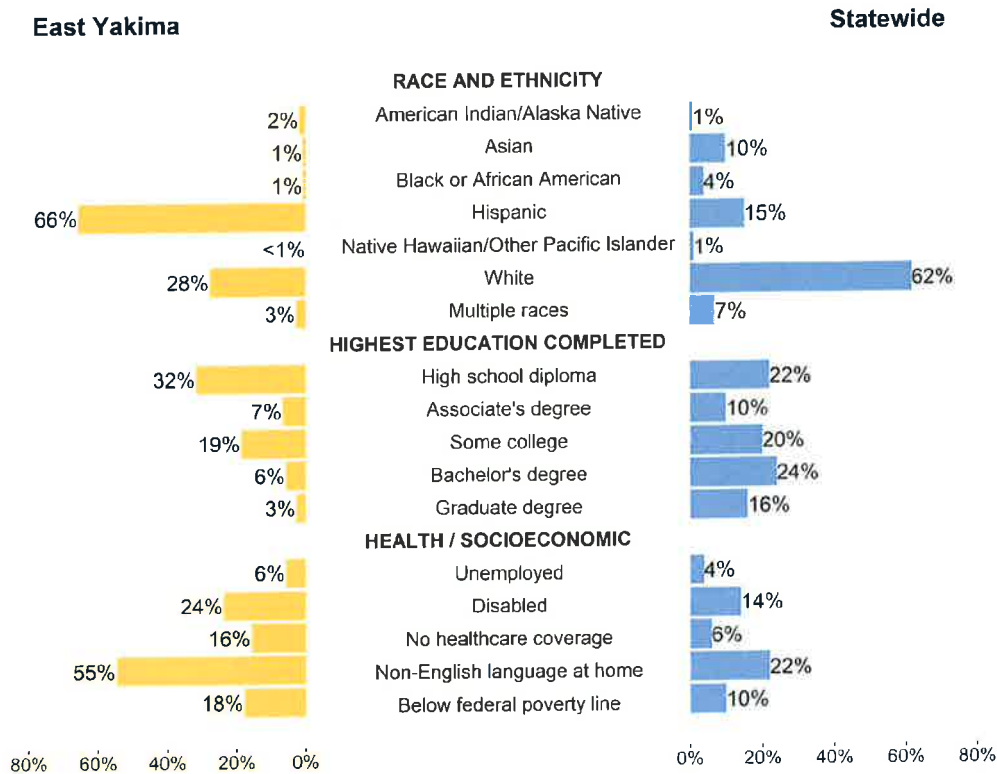


Figure 2. Sociodemographic characteristics of East Yakima compared to statewide percentages, based on Washington State's 2024 estimated population of 8,035,700.⁵

Health characteristics

According to 2022 CDC health survey data,⁶ East Yakima has elevated prevalences of chronic health conditions among individuals aged 18 years and older relative to the statewide population, including asthma (12.9% vs. 11.4%), cardiovascular disease (7.4% vs. 5.7%), COPD (8.5% vs. 5.7%), diabetes (14.3% vs. 9.6%), and stroke (4.6% vs. 3.1%). These prevalences are

⁵ WA Office of Financial Management, Nov 2024 Data Tables, Population by age and sex https://ofm.wa.gov/wp-content/uploads/sites/default/files/public/dataresearch/pop/stfc/stfc_2024.xlsx

⁶ U.S. Centers for Disease Control and Prevention, PLACES Data Portal <https://www.cdc.gov/places/tools/data-portal.html>

not necessarily attributable to air pollution. Community and statewide prevalences that have overlapping 95% confidence intervals, as shown in Figure 3, might not be statistically significant.

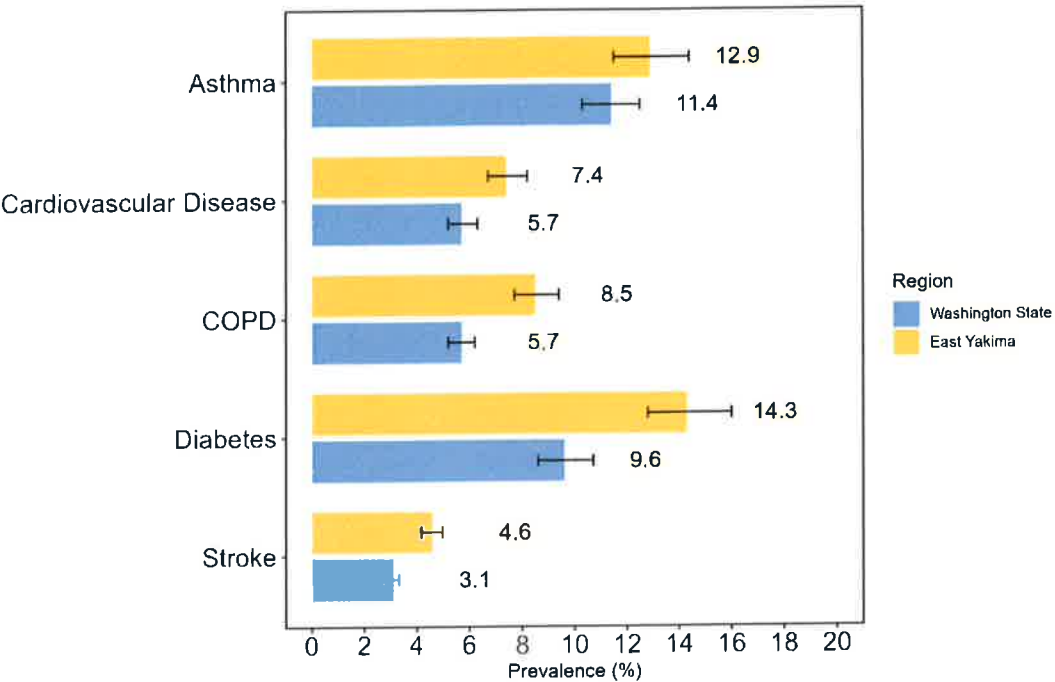


Figure 3. Prevalence of chronic health conditions among people ages 18 years and older in East Yakima census tracts compared with Washington State.

Data come from CDC PLACES, 2024 release, which uses 2022 survey data.⁶ Yellow and blue bars indicate the estimated prevalence of each condition, and the black lines indicate the 95% confidence interval.

Air Monitoring

In the East Yakima community, PM_{2.5} and PM₁₀ have been continuously monitored at the Yakima-4th Ave monitoring site by Ecology and Yakima Regional Clean Air Agency (YRCAA). In 2025, Ecology installed four PM_{2.5} sensors (SensWA) at Union Gap-4th St, Yakima-River Rd, Yakima-W Viola Ave, and Yakima-S 9th St using Climate Commitment Act (CCA) funds. Data from these sensors will be included in the next biennial EJ Report. For this reporting period, we assessed data from the Yakima-4th Ave monitoring site.

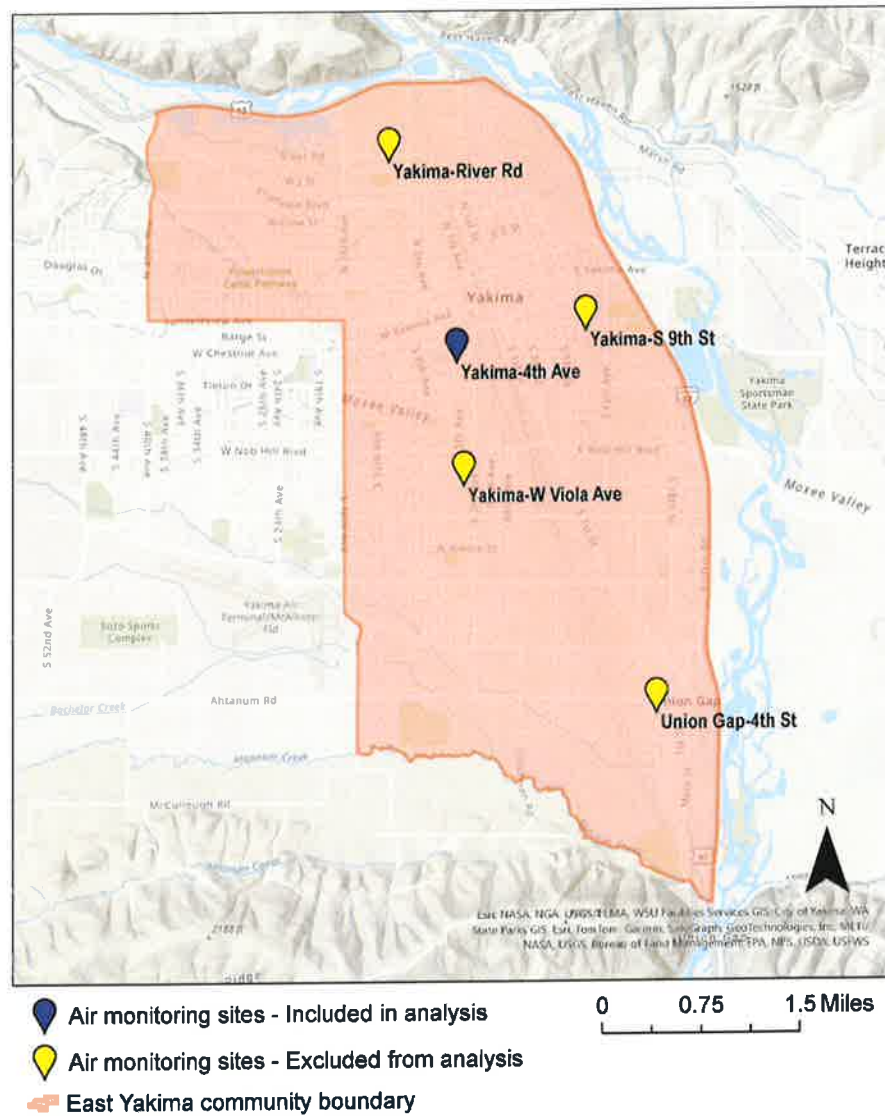


Figure 4. Map of East Yakima air monitoring sites.

Table 1. East Yakima criteria air pollutant monitors.

Monitoring Site	Type	Site Owner	Pollutants Monitored
Yakima-4 th Ave	Regulatory	YRCAA	PM _{2.5} , PM ₁₀

Criteria Air Pollution

This report summarizes criteria air pollutant (CAPs) concentrations in the East Yakima community from 2022 through 2024. CAPs concentrations for PM_{2.5} and PM₁₀ are calculated using data from the Washington Ambient Air Monitoring Network and reported according to the Environmental Protection Agency's (EPA) methodology. More information can be found in the background and methods sections of the 2025 EJ Report.

In addition to analyzing monitored criteria air pollution concentrations, we calculated the number of days per year residents of the East Yakima community experienced unhealthy air quality, according to EPA's Air Quality Index (AQI). The AQI is a six-category color-coded scale used to communicate daily air quality levels to the public. Days when an AQI above 100 are considered "unhealthy for sensitive groups" or worse.

Between 2022-2024, the East Yakima community experienced an average of 2.7 days with unhealthy air quality (Figure 5). In comparison, between 2020-2022, the annual average was 11 days. Most unhealthy air quality days were primarily caused by wildfire smoke.

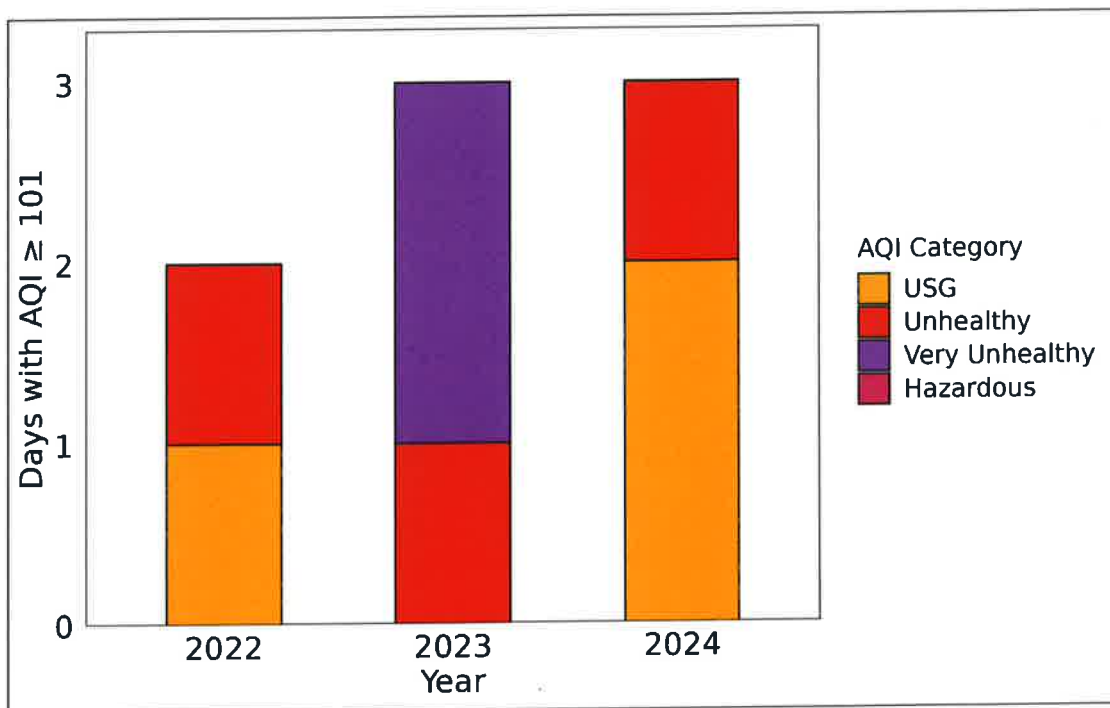


Figure 5. Number of days 2022-2024 with unhealthy air quality. Includes days impacted by wildfire smoke.

Table 2 includes 24-hour PM_{2.5} (98th percentile) concentrations. PM_{2.5} concentrations are measured over 24-hour periods in micrograms per cubic meter (µg/m³). The EPA establishes national ambient air quality standards (NAAQS), which define the maximum allowable levels (thresholds) for each criteria pollutant. The NAAQS threshold for 24-hour PM_{2.5} (98th percentile) is 35 µg/m³. The design value for 24-hour PM_{2.5} (98th percentile) is a statistic that describes the air quality of a location relative to the NAAQS over a three-year period and is used to describe short-term fine particulate exposure.

From 2022 to 2024, the 24-hour PM_{2.5} (98th percentile) concentrations at the Yakima-4th Ave monitoring site ranged from 25.4 to 29.4 µg/m³. The 2024 design value was below the NAAQS threshold (Table 2; Figure 6). Wildfire-impacted days when the 24-hour average PM_{2.5} concentration exceeded 35.4 µg/m³ were excluded from these calculations. The annual (98th percentile) of 24-hour PM_{2.5}, excluding wildfire-impacted days, was approximately 8% lower than when all days were included.

Table 2. 24-hour PM_{2.5} (98th percentile) concentrations and 2024 design values, 2022-2024. Units are in µg/m³. Brackets [] exclude wildfire days when 24-hour average PM_{2.5} concentration exceeded 35.4 µg/m³. 24-hour PM_{2.5} (98th percentile) NAAQS is 35 µg/m³.

Monitoring Site	2022 24-hour 98 th Percentile	2023 24-hour 98 th Percentile	2024 24-hour 98 th Percentile	2024 Design Value
Yakima-4 th Ave	29.4 [29.0]	25.4 [23.0]	26.4 [22.1]	27 [25]

NAAQS = national ambient air quality standards, PM = particulate matter, µg/m³ = micrograms per cubic meter

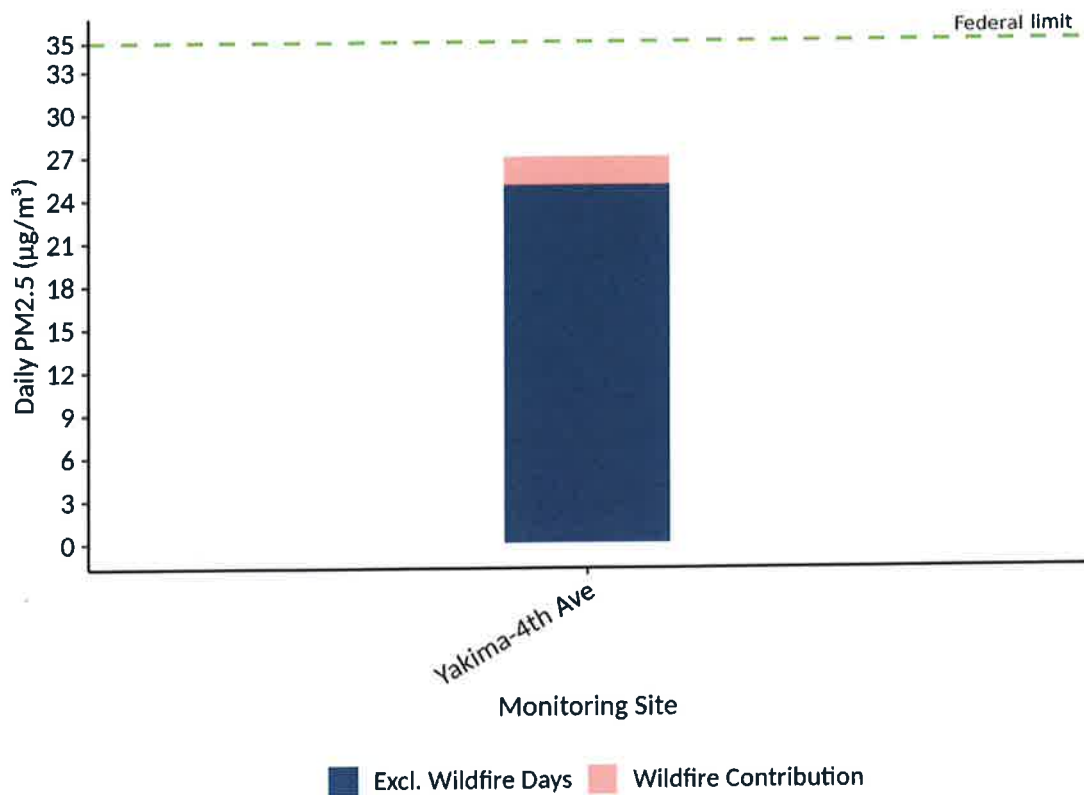


Figure 6. 24-hour PM_{2.5} (98th percentile) concentrations, 2022-2024. Annual concentrations calculated with and without days elevated from wildfire smoke. Dark blue bar includes three complete years of data, 2022-2024; dashed line is the federal limit (NAAQS) for 24-hr PM_{2.5}.

Table 3 includes annual mean PM_{2.5} concentrations between 2022 to 2024 and 2024 design values. The annual PM_{2.5} design value is a three-year average of annual mean concentrations used to describe long-term exposure. At the Yakima-4th Ave monitoring site, the 2024 design value remained below the NAAQS threshold of 9.0 µg/m³. In contrast, the 2022 annual mean concentration exceeded the threshold, primarily due to wildfire smoke (Table 3). Overall, annual PM_{2.5} concentrations show a slight downward trend from 2022-2024.

Table 3. Annual mean PM_{2.5} concentrations and 2024 design values, 2022–2024. Units are in µg/m³. Brackets [] exclude wildfire days when the average PM_{2.5} concentration exceeded 15.0 µg/m³. Annual PM_{2.5} NAAQS is 9.0 µg/m³.

Monitoring Site	2022	2023	2024	2024 Design Value
Yakima-4 th Ave	9.14 [8.43]	8.79 [7.78]	7.13 [6.36]	8.4 [7.5]

NAAQS = national ambient air quality standards, PM = particulate matter, µg/m³ = micrograms per cubic meter

For PM₁₀, the 24-hour standard is 150 µg/m³, which should not be exceeded more than once per year on average over a three-year period. In 2023, two days at the Yakima-4th Ave monitoring site exceeded the PM₁₀ standard due to wildfire smoke (Table 4). Aside from these wildfire-impacted days, monitored PM₁₀ concentrations remained below the NAAQS.

Table 4. Annual number of exceedances of PM₁₀ (µg/m³) and 2024 design values, 2022-2024.

Monitoring Site	Pollutant	2022	2023	2024	2024 Design Value	NAAQS Level	Form
Yakima-4 th Ave	PM ₁₀	0	2	0	0.7	1 (µg/m ³)	# of annual exceedances >150 µg/m ³ , averaged over 3 years

µg/m³ = micrograms per cubic meter

Health Impacts of Criteria Air Pollution

We estimated the number and rate of deaths and morbidities associated with PM_{2.5} and O₃ concentrations by age range and using health effect estimates from peer-reviewed studies (Appendix B, Table 2 in the 2025 EJ Report). All estimates are rounded to the nearest whole number. We present ranges of deaths or morbidities where multiple studies assessed that health outcome.

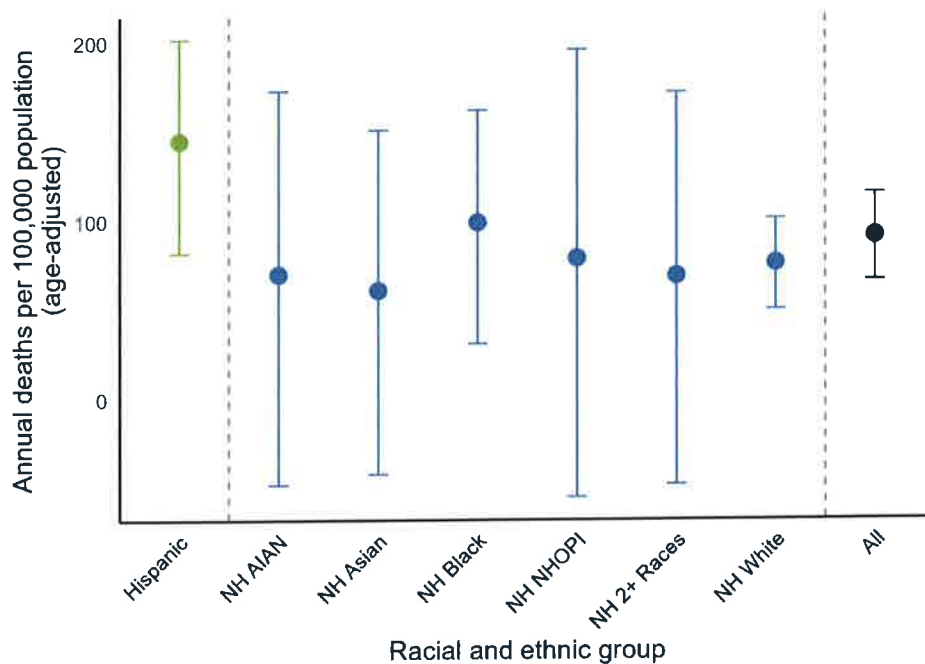
PM_{2.5}

We estimated 33 deaths by any cause (78 deaths per 100,000 population, Table B1) related to yearly PM_{2.5} exposure. Among older adults, which is a smaller portion of the population, we

estimated 20 total deaths (256 deaths per 100,000 population) each year associated with yearly PM_{2.5} exposure (Table B2).

Among different racial and ethnic groups (Figure 7), we estimated most PM_{2.5} related deaths by any cause per year to be among Hispanic people (22 deaths among 18–84 year-olds) as was the highest annual age-adjusted mortality rate (145 deaths per 100,000 population), after adjusting for age distribution.⁷ Non-Hispanic Black people had the second highest annual age-adjusted mortality rate (99 deaths per 100,000 population).

Figure 7 is based on the study by Pope et al. (2019),⁸ where AIAN refers to American Indian and Alaska Native; NH to non-Hispanic; and NHOPi to Native Hawaiian and Other Pacific Islander. The bars indicate the 95% confidence interval (CI) for each rate.



⁷ Age-adjusted mortality rates represent the mortality rate if the age distribution in that race category matched the age distribution of the total Washington State population. This allows for better comparability given that different race groups can have different age distributions and the risk of death is higher in older age groups. We see higher age-adjusted rates for race categories other than the non-Hispanic White group given that these groups are generally younger in overburdened communities compared to the statewide age distribution; when we standardize these groups to the state age distribution (which has a higher proportion of older people) the estimated mortality rates are higher. More information about our age-adjustment methods can be found in the 2025 EJ Report.

⁸ Pope, C.A., 3rd, Lefler, J.S., Ezzati, M., Higbee, J.D., Marshall, J.D., Kim, S.Y., Bechle, M., Gilliat, K.S., Vernon, S.E., Robinson, A.L., & Burnett, R.T. (2019). Mortality Risk and Fine Particulate Air Pollution in a Large, Representative Cohort of U.S. Adults. *Environmental Health Perspectives*, 127(7), 77007.

Figure 7. Age-adjusted annual death rates by any cause associated with annual PM_{2.5} exposure among ages 18-84 by racial and ethnic group in East Yakima.

When assessing specific causes of death related to yearly PM_{2.5} concentrations (Table B3), we estimated 12 deaths due to cardiovascular disease (28 deaths per 100,000 population), 13 to 21 deaths due to ischemic heart disease (41 to 66 deaths per 100,000 population), and 2 deaths per year due to lung cancer (5 to 7 deaths per 100,000 population) among adults.

Regarding non-fatal health outcomes (Table B3), an estimated 16 hospital admissions (38 visits per 100,000 population) for acute non-fatal myocardial infarction were associated with yearly PM_{2.5} concentrations among adults. Additionally, 7 lung cancer diagnoses per year were associated with annual PM_{2.5} exposure among all people (23 diagnoses per 100,000 population).

Daily PM_{2.5} exposure (Table B4) was associated with 1 death by any cause (1 per 100,000 population) among all people and 2 deaths by any cause (23 per 100,000 population) among older adults ages 65 to 99. For non-fatal conditions, daily PM_{2.5} was associated with 3 acute non-fatal myocardial infarction admissions (7 to 8 per 100,000 population) among all adults, and 10 respiratory admissions (134 per 100,000 population) among older adults ages 65 to 99, 3 asthma hospital admissions (6 per 100,000 population) among people ages 0 to 64. Additionally, 14 to 26 asthma-related emergency department (ED) visits (24 to 44 per 100,000 population) among all people and 17 asthma-related ED visits (99 per 100,000 population) among youths ages 0 to 17 years were associated with daily PM_{2.5} exposure.

Ozone

We estimated that O₃ exposure during the warm season (Table B5) was associated with 6 seasonal deaths by any cause among older adults ages 65 to 99 (73 deaths per 100,000 population). Daily O₃ exposure was associated with 2 deaths by any cause (3 per 100,000 population), 33 asthma-related ED visits (55 per 100,000 population) among all people and 21 respiratory hospital admissions (277 per 100,000 population) among older adults ages 65 to 99.

Greenhouse Gas Emissions

Greenhouse gas results for the East Yakima overburdened community highly impacted by air pollution include: 1) Emissions from greenhouse gas reporting entities per RCW 70A.65⁹ and WAC 173-441,¹⁰ -446;¹¹ and 2) Mobile source emissions.¹²

We did not collect information or model greenhouse gas emissions from other sources at this time. The greenhouse gas information provided in this report aligns with the CCA's requirements. For further information on methods and statewide results, refer to the 2025 EJ Report.

Facilities

Washington State requires certain businesses that emit more than 10,000 metric tons of carbon dioxide equivalents (MT CO₂e) to report to the Washington Greenhouse Gas Reporting Program.¹³ Businesses that emit over 25,000 MT CO₂e are also subject to the Cap-and-Invest Program (covered sources). Each reporting facility is required to follow a compliance plan.

In the East Yakima community, two facilities (Figure 8; Table 5) within and near the community boundary reported their emissions in 2022 and 2023. The total reported emissions from these facilities was 26,444 MT CO₂e in 2022 and 27,628 MT CO₂e in 2023, a 4.5% year-to-year increase. Some facilities in other communities report biogenic carbon (biogenic CO₂)¹⁴ emissions, which are expected to be partially recaptured as part of the natural carbon cycle. For reporting purposes, biogenic CO₂ is subtracted from total metric tons of CO₂e, even though it has the same atmospheric warming effect as non-biogenic CO₂. There were no facilities that reported biogenic CO₂ in East Yakima. Since 2020, total reported greenhouse gas emissions from facilities within and near OBCs have decreased by 20.3%, and by 6.3% after subtracting biogenic CO₂ emissions. Some year-to-year fluctuations in emissions from individual facilities are expected.

⁹ Greenhouse Gas Emissions – Cap-and-Invest Program <https://app.leg.wa.gov/RCW/default.aspx?cite=70A.65>

¹⁰ Reporting of Emissions of Greenhouse Gases <https://app.leg.wa.gov/WAC/default.aspx?cite=173-441>

¹¹ Climate Commitment Act – Program Rule <https://app.leg.wa.gov/WAC/default.aspx?cite=173-446>

¹² Environmental Justice Review <https://app.leg.wa.gov/RCW/default.aspx?cite=70A.65.020>

¹³ Mandatory greenhouse gas reports <https://ecology.wa.gov/air-climate/reducing-greenhouse-gas-emissions/tracking-greenhouse-gases/mandatory-greenhouse-gas-reports>

¹⁴ Biogenic carbon refers to greenhouse gases released from the combustion, decomposition, or processing of materials derived from biological sources – such as wood, paper, biomass fuels, agriculture residues, food waste, or biogas. Under the Washington Greenhouse Gas Reporting Program, these emissions are reported separately from fossil-derived emissions because they result from carbon that circulates within the short-term natural carbon cycle rather than long-term carbon stores. Biogenic CO₂ acts the same way in the atmosphere as non-biogenic CO₂. Anthropogenic processes that include these emissions reduce a facility's environmental impact.

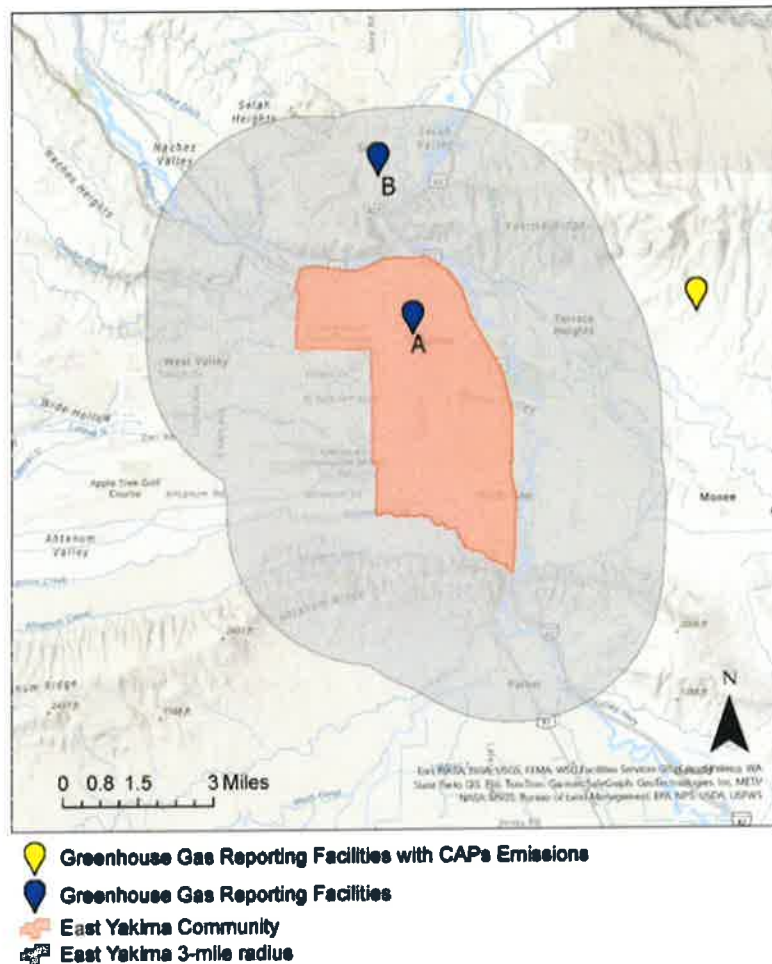


Figure 8. Reporting facilities as of 2023 that are in or near the East Yakima community boundary. Facility letters correspond with Table 5.

The emissions in Table 5 are in MT CO₂e. Each greenhouse gas uses a conversion factor known as its Global Warming Potential (GWP), in this case AR4 GWP¹⁵, to convert emissions into CO₂e. A GWP describes how much heat a greenhouse gas traps in the atmosphere relative to carbon dioxide over a specific time horizon (20, 100, or 500 years). AR4 GWPs are published in the 2007 Intergovernmental Panel on Climate Change (IPCC).¹⁶ The Greenhouse Gas Reporting

¹⁵ Reporting of Emissions of Greenhouse Gases <https://app.leg.wa.gov/WAC/default.aspx?cite=173-441>

¹⁶ Intergovernmental Panel on Climate Change <https://www.ipcc.ch/>

Program uses AR4 GWPs mainly for regulatory stability, consistency, and alignment with other federal programs.

Table 5. Facility emissions in or nearby¹⁷ the East Yakima community. Biogenic CO₂ is in brackets [].

	Facility Name/City	Facility Sector	Within Community Boundary	CCA-Covered Facility ¹⁸	Source of CAPs ¹⁹	2022 Emissions (MTCO ₂ e)	2023 Emissions (MTCO ₂ e)
A	Michelson Packaging – Yakima	Pulp and Paper	Yes	No	No	9,536 [0]	11,886 [0]
B	Tree Top – Selah	Food Production	Nearby	No	No	16,908 [0]	15,742 [0]

¹⁷ “Nearby” refers to facilities within a three-mile radius of the community boundary that were included in this analysis.

¹⁸ Large emitters of greenhouse gases, specifically those emitting 25,000 or more MT CO₂e annually in Washington State that are part of the Cap-and-Invest program established by the Climate Commitment Act.

¹⁹ Major sources of criteria air pollutants are designated in the Air Operating Permit program. A major source is any stationary source that has the actual or potential to emit ≥100 tons per year for any air pollutant. Many sources emit far below the threshold. More information can be found at <https://ecology.wa.gov/regulations-permits/permits-certifications/air-quality-permits/air-operating-permit>

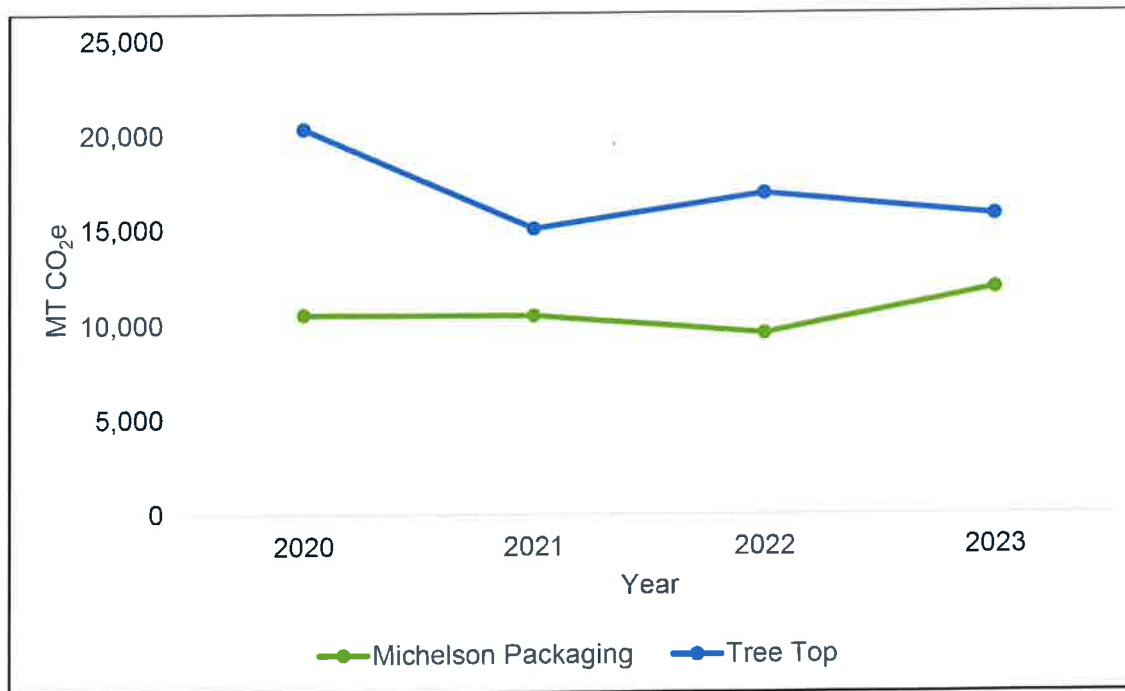


Figure 9. Greenhouse gas reporting facilities and their emissions from 2020-2023.

Mobile sources

In the East Yakima community, greenhouse gas emissions from mobile sources increased by 21% from 2020 to 2021 (Table 6) but have decreased by 5.4% between 2019 to 2021.²⁰ Mobile sources consist of on-road and non-road emissions. The drop in emissions in 2020 was largely due to a decrease in vehicle traffic that was attributed to the COVID-19 pandemic.^{21,22}

Similar to Table 5, the results in Table 6 use AR5 GWPs to convert greenhouse gas emissions into CO₂e. In 2013-2014, the IPCC published AR5 GWPs and AR6 GWPs in 2021-2022. The Washington Greenhouse Gas Emissions Inventory²³ uses AR5 GWPs in mobile source emission estimates, as the inventory models for greenhouse gas accounting are revised as science improves.

²⁰ Improving Air Quality in Overburdened Communities Highly Impacted by Air Pollution 2023 Report
<https://apps.ecology.wa.gov/publications/SummaryPages/2302115.html>

²¹ Washington State Greenhouse Gas Emissions Inventory: 1990-2021, Jan 2025
<https://apps.ecology.wa.gov/publications/SummaryPages/2414077.html>

²² Reducing Greenhouse Gas Emissions from the Transportation Sector through Climate Planning, Dec 2024
<https://www.epa.gov/system/files/documents/2024-12/420f24042.pdf>

²³ Washington State Greenhouse Gas Emissions Inventory: 1990-2021, Jan 2025
<https://apps.ecology.wa.gov/publications/SummaryPages/2414077.html>

Table 6. Greenhouse gas emissions from mobile sources per capita from 2020-2021.

Population	2020 Emissions (MT CO ₂ e)	2020 Per Capita MT CO ₂ e	2021 Emissions (MT CO ₂ e)	2021 Per Capita MT CO ₂ e
59,803	256,838	4.3	310,698	5.2

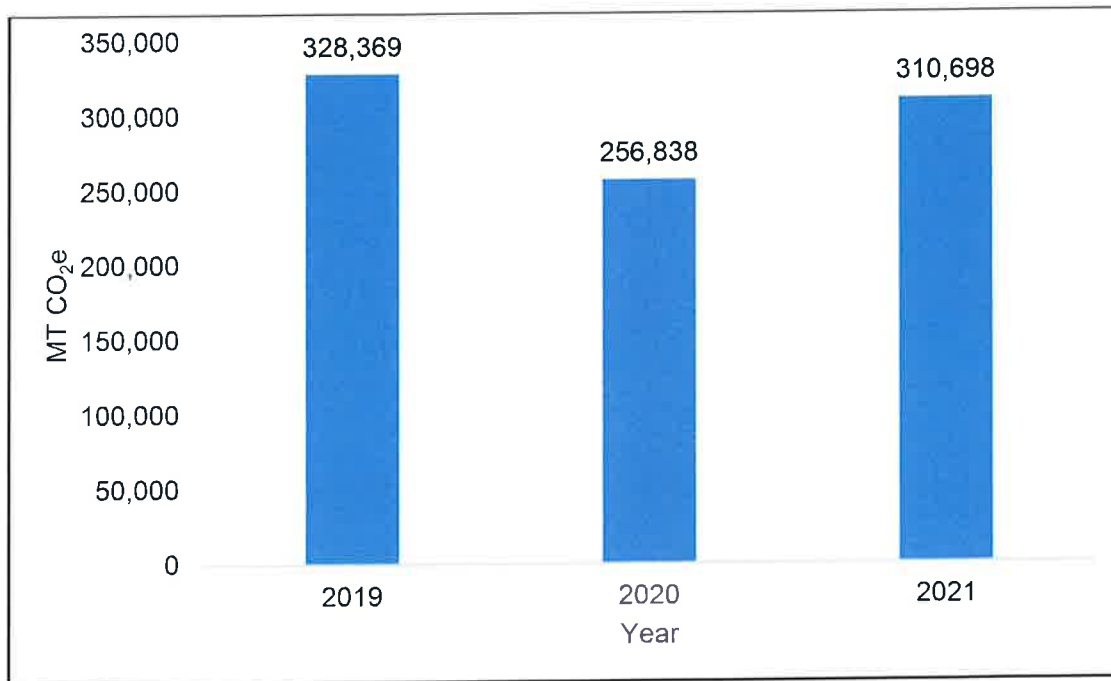


Figure 10. Annual greenhouse gas emissions from mobile sources in the East Yakima community, 2019-2021.

Community Resources

These resources provide more information about air quality and health in the East Yakima community:

- [Yakima Health District data and reports page](#)²⁴
- [Yakima Memorial Hospital 2022 Community Health Needs Assessment](#)²⁵

²⁴ <https://www.yakimacounty.us/277/Community>

²⁵ <https://www.multicare.org/wp-content/uploads/2024/05/yakima-chna-2022.pdf>

- [Yakima Valley Trends - Health indicators](#)²⁶
- [Zero-emission and electric vehicles mapping tool | WSDOT](#)²⁷
- [Home | Washington Climate Action](#)²⁸
- [Climate Resilience Plan for Washington Agriculture | Washington State Department of Agriculture](#)²⁹

²⁶ <https://yakimavalleytrends.org/category.cfm?id=7>

²⁷ <https://wsdot.wa.gov/business-wsdot/grants/zero-emission-vehicle-grants/zero-emission-and-electric-vehicles-mapping-tool>

²⁸ <https://climate.wa.gov/>

²⁹ <https://agr.wa.gov/washington-agriculture/climate-resilience-plan-for-washington-agriculture>

Appendix A. Criteria Air Pollution

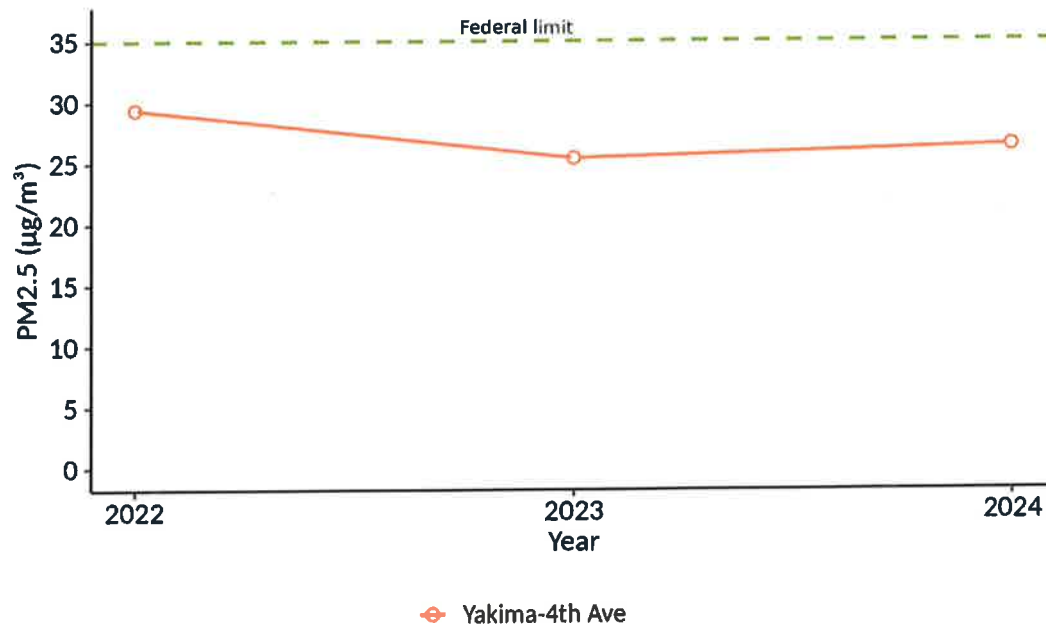


Figure A1. 24-hour $PM_{2.5}$ (98th percentile) concentrations at the East Yakima monitoring site. Days impacted by wildfire smoke are included. Dashed line is the federal limit for 24-hr $PM_{2.5}$ (35 $\mu\text{g}/\text{m}^3$).

Appendix B. Supplemental Health Impacts Tables

Table B1. Estimated annual deaths by any cause related to yearly PM_{2.5} exposure among 18–84-year-olds in East Yakima by racial and ethnic group, 2022–2023 (based on effect estimates in study by Pope, et al., 2019⁸).

Racial and Ethnic Group	Population (18-84-year-olds)	Estimated Annual Deaths [95% CI]	Estimated annual deaths per 100,000 population [95% CI]	Estimated age-adjusted annual deaths per 100,000 population [95% CI]
All	41,626	33 [24 to 41]	78 [57 to 99]	91 [66 to 115]
Hispanic	24,731	22 [13 to 31]	89 [51 to 124]	145 [82 to 202]
Non-Hispanic AIAN	728	<1 [0 to 1]	50 [-35 to 125]	70 [-48 to 173]
Non-Hispanic Asian	328	<1 [0 to 1]	62 [-43 to 153]	61 [-42 to 151]
Non-Hispanic Black	674	1 [0 to 1]	88 [27 to 143]	99 [31 to 162]
Non-Hispanic NHOPI	39	<1 [range<1]	45 [-31 to 113]	79 [-55 to 196]
Non-Hispanic 2+ races	1,200	1 [-1 to 2]	63 [-44 to 157]	69 [-48 to 172]
Non-Hispanic White	13,927	14 [9 to 19]	103 [67 to 137]	76 [50 to 101]

AIAN: American Indian and Alaska Native; CI: confidence interval; NHOPI: Native Hawaiian and Other Pacific Islander.

Race categories only include people who identify as non-Hispanic to reflect the race categories used in the study by Pope, et al.

Population is the average of the 2022 and 2023 Washington State Office of Financial Management estimates for the census tracts that comprise this overburdened community.

The age-adjusted rate indicates the expected rate if the age distribution in this overburdened community matched that of Washington State.

Table B2. Estimated annual deaths by any cause related to yearly PM_{2.5} exposure among 65–99-year-olds in East Yakima by racial and ethnic group, 2022–2023 (based on effect estimates in study by Di, et al., 2017³⁰).

Racial and Ethnic Group	Population (65-99-year-olds)	Estimated Annual Deaths [95% CI]	Estimated annual deaths per 100,000 population [95% CI]	Estimated age-adjusted annual deaths per 100,000 population [95% CI]
All	7,733	20 [19 to 20]	256 [249 to 263]	235 [229 to 241]
Hispanic	1,966	5 [5 to 6]	272 [235 to 306]	287 [248 to 324]
AIAN	301	1 [0 to 1]	179 [110 to 244]	191 [118 to 261]
Asian	94	<1 [range<1]	177 [140 to 212]	174 [138 to 209]
Black	163	1 [1 to 1]	383 [369 to 397]	383 [368 to 397]
NHOPI	15	<1 [range<1]	146 [90 to 199]	159 [98 to 217]
2+ races	629	1 [1 to 2]	211 [130 to 287]	212 [131 to 289]
White	6,532	11 [11 to 11]	169 [162 to 175]	153 [147 to 158]

AIAN: American Indian and Alaska Native; CI: confidence interval; NHOPI: Native Hawaiian and Other Pacific Islander

Race categories include people who identify as Hispanic and non-Hispanic to reflect the race categories used in the study by Di, et al.

Population is the average of the 2022 and 2023 Washington State Office of Financial Management estimates for the census tracts that comprise this overburdened community.

The age-adjusted rate indicates the expected rate if the age distribution in this overburdened community matched that of Washington State.

³⁰ Di, Q., Wang Y., Zanobetti, A., Wang, Y., Koutrakis, P., Choirat, C., Dominici, F., Schwartz, J.D. 2017. Air Pollution and Mortality in the Medicare Population. *The New England Journal of Medicine*, 376(26), pp. 2513-2522.

Table B3. Annual mortality and morbidity associated with yearly PM_{2.5} exposure (yearly 24-hour average concentrations) in East Yakima, 2022-2023. Brackets [] include 95% confidence interval.

Health Outcome	Age Group	Source of Risk Estimate	Population	Estimated Annual Number [95% CI]	Estimated annual rate per 100,000 population [95% CI]
Deaths – Any cause	65 to 99	Di et al., 2017 ³¹	7,733	20 [19 to 20]	256 [249 to 263]
Deaths – Any cause	18 to 84	Pope et al., 2019 ³²	41,626	33 [24 to 41]	78 [57 to 99]
Deaths – Cardiovascular disease	18 to 99	Alexeeff et al., 2023 ³³	42,759	12 [5 to 19]	28 [11 to 43]
Deaths – Ischemic heart disease	30 to 99	Jerrett et al., 2017 ³⁴	32,008	14 [11 to 17]	44 [33 to 54]
Deaths – Ischemic heart disease	30 to 99	Krewski et al., 2009 ³⁵	32,008	21 [17 to 25]	66 [54 to 78]
Deaths – Ischemic heart disease	30 to 99	Pope et al., 2019 ³⁶	32,008	13 [10 to 17]	41 [30 to 52]

³¹ Di, Q., Wang Y., Zanobetti, A., Wang, Y., Koutrakis, P., Choirat, C., Dominici, F., Schwartz, J.D. 2017. Air Pollution and Mortality in the Medicare Population. *The New England Journal of Medicine*, 376(26), pp. 2513-2522.

³² Pope, C.A., 3rd, Lefler, J.S., Ezzati, M., Higbee, J.D., Marshall, J.D., Kim, S.Y., Bechle, M., Gilliat, K.S., Vernon, S.E., Robinson, A.L., & Burnett, R.T. (2019). Mortality Risk and Fine Particulate Air Pollution in a Large, Representative Cohort of U.S. Adults. *Environmental Health Perspectives*, 127(7), 77007.

³³ Alexeeff SED, K. Van Den Eeden, S. Schwartz, J. Liao, N. S. Sidney, S. Association of Long-term Exposure to Particulate Air Pollution with Cardiovascular Events in California. *JAMA Network Open*. 2023;6(2):e230561.

³⁴ Jerrett, 2017. Comparing the Health Effects of Ambient Particulate Matter Estimated Using Ground-Based Versus Remote Sensing Exposure Estimates. *Environmental Health Perspectives*. 2017 Apr;125(4):552-559. doi: 10.1289/EHP575. Epub 2016 Sep 9.

³⁵ Krewski D, Jerrett M, Burnett R, et al. 2009. Extended Follow-Up and Spatial analysis of the American Cancer Society Linking Particulate Air Pollution and Mortality. Health Effects Institute, Cambridge MA

³⁶ Pope, C.A., 3rd, Lefler, J.S., Ezzati, M., Higbee, J.D., Marshall, J.D., Kim, S.Y., Bechle, M., Gilliat, K.S., Vernon, S.E., Robinson, A.L., & Burnett, R.T. (2019). Mortality Risk and Fine Particulate Air Pollution in a Large, Representative Cohort of U.S. Adults. *Environmental Health Perspectives*, 127(7), 77007.

Health Outcome	Age Group	Source of Risk Estimate	Population	Estimated Annual Number [95% CI]	Estimated annual rate per 100,000 population [95% CI]
Deaths – Lung Cancer	30 to 99	Krewski, et al., 2009 ³⁷	32,008	2 [1 to 4]	7 [3 to 11]
Deaths – Lung Cancer	30 to 99	Turner et al., 2016 ³⁸	32,008	2 [0 to 3]	5 [1 to 8]
Hospital Admissions – Acute Non-Fatal Myocardial Infarction	18 to 99	Alexeeff, et al., 2023 ³⁹	42,759	16 [9 to 23]	38 [22 to 54]
Lung Cancer Diagnoses	30 to 99	Gharibvand et al., 2016 ⁴⁰	32,009	7 [2 to 11]	23 [7 to 35]

CI: confidence interval. CIs are inversely proportional to population sizes reflecting higher uncertainty when estimating effects with smaller numbers of people. CIs that include 0 indicate that it is plausible that no deaths are associated with PM_{2.5} in this group in this community.

Population is the average of the 2022 and 2023 Washington State Office of Financial Management estimates for the census tracts that comprise this overburdened community.

The age-adjusted rate indicates the expected rate if the age distribution in this overburdened community matched that of Washington State.

Health outcomes were selected based on the availability of effect estimates for that outcome relevant to the Washington population in the scientific literature. Where multiple effect estimates exist, we listed the model results separately for each. See the 2025 EJ Report for more information.

³⁷ Krewski D, Jerrett M, Burnett R, et al. 2009. Extended Follow-Up and Spatial analysis of the American Cancer Society Linking Particulate Air Pollution and Mortality. Health Effects Institute, Cambridge MA

³⁸ Turner, M.C., Jerrett, M., Pope, C.A., III, Krewski, D., Gapstur, S.M., Diver, W.R., Beckerman, B.S., Marshall, J.D., Su, J., Crouse, D.L., & Burnett, R.T. (2016). Long-term ozone exposure and mortality in a large prospective study. *American Journal of Respiratory Critical Care Medicine* 193(10): 1134-1142.

³⁹ Alexeeff SED, K. Van Den Eeden, S.Schwartz, J.Liao, N. S.Sidney, S. Association of Long-term Exposure to Particulate Air Pollution with Cardiovascular Events in California. *JAMA Network Open*. 2023;6(2):e230561.

⁴⁰ Gharibvand, L., Shavlik, D., Ghamsary, M., Beeson, W.L., Soret, S., Knutsen, R., & Knutsen, S.F. (2016). The association between ambient fine particulate air pollution and lung cancer incidence: results from the AHSMOG-2 study. *Environmental Health Perspectives* 125 (3): 378?384

Table B4. Annual mortality and morbidity associated with daily PM_{2.5} exposure (daily 24-hour average concentrations) in East Yakima, 2022-2023. Brackets [] include 95% confidence interval.

Health Outcome	Age Group	Source of Risk Estimate	Population	Estimated Annual Number [95% CI]	Estimated annual rate per 100,000 population [95% CI]
Deaths – Any cause	0 to 99	Ito et al., 2013 ⁴¹	59,783	1 [0 to 1]	1 [0 to 2]
Deaths – Any cause	65 to 99	Zanobetti et al., 2014 ⁴²	7,733	2 [1 to 2]	23 [15 to 30]
Deaths – Cardiovascular disease	0 to 99	Liu et al., 2022 ⁴³	59,783	1 [0 to 2]	2 [0 to 4]
Deaths – Respiratory	0 to 99	Liu et al., 2022 ⁴⁴	59,783	2 [0 to 3]	3 [0 to 5]
Hospital Admissions – Acute Non-Fatal Myocardial Infarction	18 to 99	Sullivan et al., 2005 ⁴⁵	42,759	3 [-4 to 9]	7 [-9 to 21]

⁴¹ Ito, K., Ross, Z., Zhou, J., Nádas, A., Lippmann, M. and Thurston, G.D., 2013. NPACT Study 3. Time-series analysis of mortality, hospitalizations, and ambient PM_{2.5} and its components. National Particle Component Toxicity (NPACT) Initiative. <https://www.healtheffects.org/publication/national-particle-component-toxicity-npact-initiative-integrated-epidemiologic-and>

⁴² Zanobetti, A., Dominici, F., Wang, Y. and Schwartz, J.D., 2014. A national case-crossover analysis of the short-term effect of PM_{2.5} on hospitalizations and mortality in subjects with diabetes and neurological disorders. *Environmental Health*, 13(1), p.38.

⁴³ Liu, R.A., Wei, Y., Qiu, X., Kosheleva, A. and Schwartz, J.D., 2022. Short term exposure to air pollution and mortality in the US: a double negative control analysis. *Environmental Health*, 21(1), p.81.

⁴⁴ Liu, R.A., Wei, Y., Qiu, X., Kosheleva, A. and Schwartz, J.D., 2022. Short term exposure to air pollution and mortality in the US: a double negative control analysis. *Environmental Health*, 21(1), p.81.

⁴⁵ Sullivan, J., L. Sheppard, A. Schreuder, N. Ishikawa, D. Siscovick and J. Kaufman. 2005. Relation between short-term fine-particulate matter exposure and onset of myocardial infarction. *Epidemiology*. Vol. 16 (1): 41-8.

Health Outcome	Age Group	Source of Risk Estimate	Population	Estimated Annual Number [95% CI]	Estimated annual rate per 100,000 population [95% CI]
Hospital Admissions – Acute Non-Fatal Myocardial Infarction	18 to 99	Zanobetti et al., 2009 ⁴⁶	42,759	3 [2 to 5]	8 [4 to 11]
Hospital Admissions – All Respiratory	65 to 99	Zanobetti et al., 2009 ⁴⁷	7,733	10 [6 to 15]	134 [76 to 189]
Hospital Admissions – Asthma	0 to 64	Sheppard et al., 2003 ⁴⁸	52,050	3 [1 to 5]	6 [2 to 10]
ED Visits – Asthma	0 to 99	Mar et al., 2010 ⁴⁹	59,783	26 [7 to 44]	44 [11 to 74]
ED Visits – Asthma	0 to 99	Slaughter, J. C., et al., 2005 ⁵⁰	59,783	14 [-12 to 38]	24 [-20 to 63]
ED Visits – Asthma	0 to 17	Norris, G., et al., 1999 ⁵¹	17,024	17 [9 to 24]	99 [52 to 142]

⁴⁶ Zanobetti, A., Franklin, M., Koutrakis, P. and Schwartz, J., 2009. Fine particulate air pollution and its components in association with cause-specific emergency admissions. *Environmental Health*, 8(1), p.58.

⁴⁷ Zanobetti, A., Franklin, M., Koutrakis, P. and Schwartz, J., 2009. Fine particulate air pollution and its components in association with cause-specific emergency admissions. *Environmental Health*, 8(1), p.58.

⁴⁸ Sheppard, L. Ambient Air Pollution and Nonelderly Asthma Hospital Admissions in Seattle, Washington, 1987-1994. In: Revised Analyses of Time-Series Studies of Air Pollution and Health. 2003, Health Effects Institute: Boston, MA. p. 227-230.

⁴⁹ Mar, T. F., J. Q. Koenig and J. Primomo. 2010. Associations between asthma emergency visits and particulate matter sources, including diesel emissions from stationary generators in Tacoma, Washington. *Inhalation Toxicology*. Vol. 22 (6): 445-8.

⁵⁰ Slaughter, J. C., E. Kim, L. Sheppard, J. H. Sullivan, T. V. Larson and C. Claiborn. 2005. Association between particulate matter and emergency room visits, hospital admissions and mortality in Spokane, Washington. *Journal of Exposure Analysis and Environmental Epidemiology*. Vol. 15

⁵¹ Norris, G., et al. An association between fine particles and asthma emergency department visits for children in Seattle. *Environmental Health Perspectives*, 1999. 107(6): p. 489-93.

Health Outcome	Age Group	Source of Risk Estimate	Population	Estimated Annual Number [95% CI]	Estimated annual rate per 100,000 population [95% CI]
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ED: emergency department; CI: confidence interval. CIs are inversely proportional to population sizes reflecting higher uncertainty when estimating effects with smaller numbers of people. CIs that include 0 indicate that it is plausible that no deaths are associated with PM_{2.5} in this group in this community.

Population is the average of the 2022 and 2023 Washington State Office of Financial Management estimates for the census tracts that comprise this overburdened community.

The age-adjusted rate indicates the expected rate if the age distribution in this overburdened community matched that of Washington State.

Health outcomes were selected based on the availability of effect estimates for that outcome relevant to the Washington population in the scientific literature. Where multiple effect estimates exist, we listed the model results separately for each. See the 2025 EJ Report for more information.

Table B5. Annual mortality and morbidity associated with seasonal and daily O₃ exposure (seasonal and daily 8-hour maximum concentrations) in East Yakima, 2022-2023. Brackets [] include 95% confidence interval.

Health Outcome	Age Group	Source of Risk Estimate	Population	Estimated Annual Number [95% CI]	Estimated annual rate per 100,000 population [95% CI]
Deaths – Any cause (Seasonal)	65 to 99	Di, et al. 2017 ⁵²	7,733	6 [4 to 7]	73 [50 to 96]
Deaths – Any cause (Daily)	0 to 99	Zanobetti and Schwartz, 2008 ⁵³	59,783	2 [1 to 3]	3 [2 to 5]

⁵² Di, Q., Wang Y., Zanobetti, A., Wang, Y., Koutrakis, P., Choirat, C., Dominici, F., Schwartz, J.D. 2017. Air Pollution and Mortality in the Medicare Population. *The New England Journal of Medicine*, 376(26), pp. 2513-2522.

⁵³ Zanobetti, A. and Schwartz, J., 2008. Mortality displacement in the association of ozone with mortality: an analysis of 48 cities in the United States. *American Journal of Respiratory and Critical Care Medicine*, 177(2), pp.184-189.

Health Outcome	Age Group	Source of Risk Estimate	Population	Estimated Annual Number [95% CI]	Estimated annual rate per 100,000 population [95% CI]
ED Visits – Asthma (Daily)	0 to 99	Mar and Koenig, 2009 ⁵⁴	59,783	33 [8 to 54]	55 [14 to 91]
Hospital Admissions – All Respiratory (Daily)	65 to 99	Schwartz, 1995 ⁵⁵	7,733	21 [6 to 35]	277 [80 to 454]

ED: emergency department; CI: confidence interval. CIs are inversely proportional to population sizes reflecting higher uncertainty when estimating effects with smaller numbers of people. CIs that include 0 indicate that it is plausible that no deaths are associated with O₃ in this group in this community.

Population is the average of the 2022 and 2023 Washington State Office of Financial Management estimates for the census tracts that comprise this overburdened community.

Age-adjusted rate indicates the expected rate if the age distribution in this overburdened community matched that of Washington State.

Health outcomes were selected based on the availability of effect estimates for that outcome relevant to the Washington population in the scientific literature. Where multiple effect estimates exist, we listed the model results separately for each. See the 2025 EJ Report for more information.

⁵⁴ Mar, T.F. and Koenig, J.Q. (2009). Relationship between visits to emergency departments for asthma and ozone exposure in greater Seattle, Washington. *Annals of Allergy, Asthma & Immunology*, 103, 474-479.

⁵⁵ Schwartz, J., 1995. Short term fluctuations in air pollution and hospital admissions of the elderly for respiratory disease. *Thorax*, 50(5), pp.531-538.



Climate Action Plan

For the City of Yakima, WA

Sustainable Yakima Committee

November 2023

Table of Contents

Executive Summary	3
INTRODUCTION	4
Plan Goals	4
Why the City Needs a Plan	4
BACKGROUND	6
Yakima's Contribution to Climate Change	6
Climate Change Impact on Yakima's Resources	6
Alignment with Existing Plans & Laws	8
AREAS OF FOCUS	9
Sector 1: Environmental Justice	9
Sector 2: Energy Efficiency and Renewable Energy	10
Sector 3: Water Conservation	13
Sector 4: Carbon Offsetting	13
Sector 5: Recycling and Waste Management	14
KEY TERMS	16
Committee Members	17
TABLE	18

Executive Summary

On May 17, 2022, the Yakima City Council established the Sustainable Yakima Committee to serve as an advisory committee on issues related to sustainability, renewable energy, recycling, and climate change, and to provide advice and/or recommendations to the City Council on reducing the City's energy consumption and greenhouse gas emissions (GHG). The Committee was instructed to draft a climate action plan and implementation strategy document and present it to the City Council for its review and evaluation within one year of the committee's first meeting.

This Plan outlines key steps the City can take to reduce community-wide emissions, support healthy ecosystems that sequester carbon, and ensure that the community is prepared for, and resilient to, climate impacts. These actions will have a wide range of co-benefits for Yakima such as, cleaner air, recycling options, and cost savings from lower utility bills.

Under this plan, the City will achieve science-based targets by reducing greenhouse gas emissions. Other cities in Washington state have adopted 50% by 2030 compared to 2019. The goals, strategies and actions outlined in this plan are organized within five Sectors:

Sector 1: Environmental Justice

Ensure Yakima's diverse communities have the right to be protected from environmental pollution, and to live in and enjoy a clean and healthful environment.

Sector 2: Energy efficiency and renewable energy

Maintain Yakima's quality of life as the economy transitions away from fossil fuels.

Sector 3: Water Conservation

Protect river and aquifer resources as well as aquatic biodiversity.

Sector 4: Carbon Offsetting

Ensure Yakima contributes to State of Washington greenhouse gas emissions goals.

Sector 5: Recycling and Waste Management

Improve collection rates for recycling, reduce food waste, and divert waste from landfills.

INTRODUCTION

Plan Goals

The goals of this Plan are to:

- Develop and implement a plan that serves as a road map to a 1-year, 5-year, and 10-year Plan and leads to a sustainable future for our community.
- Harness the resources and talents within Yakima's community to take practical actions across a wide range of sectors and activities.

In order to achieve these goals, this Plan needs to address the following climate impacts. There are six major climate issues affecting the community of Yakima.

Why the City Needs a Plan

In 2022, the City of Yakima formalized its commitment to addressing environmental and sustainable issues in Yakima. After endorsing the Energy Innovation and Carbon Dividend Act, supporting the Fossil Fuel Non-Proliferation Treaty, and committing the City to take a SAFE Cities climate change stand, the City Council established the Sustainable Yakima Committee to study matters related to sustainability in the City and provide recommendations to the City Council.

Climate change has had significant and tangible impacts on the city of Yakima and its surrounding region. Climate change is no longer a distant threat but a present reality that the community is grappling with. These impacts include:

1. Deadly Heat Waves: Yakima has experienced more frequent and intense heat waves. Rising temperatures during the summer months can become unbearable and dangerous, especially for vulnerable populations such as the elderly, children, those with pre-existing health conditions, unhoused individuals, and outdoor workers. Heatwaves can lead to heat-related illnesses and, in extreme cases, fatalities.

2. Declining Water Availability and Drought: Yakima is heavily reliant on water resources for agriculture, which is a critical part of the local economy. However, the region's hydrological cycle has been disrupted, leading to reduced snowpack in the nearby mountains and earlier snowmelt. This phenomenon has contributed to water scarcity and more frequent droughts, putting stress on water supplies and agricultural productivity.

3. Increased Wildfires and Smoke: The wildfire season has lengthened and increased the intensity of wildfire events in Yakima and the surrounding forests. Consequently, the city has experienced periods of dense, toxic smoke-filled air, leading to hazardous air quality levels and posing health risks to residents. Wildfires also result in property damage and threaten nearby communities.

4. Impact on Agriculture: Yakima is an important agricultural region, known for producing fruits such as apples, cherries, and hops. However, changing climate has affected the timing of growing seasons

and the suitability of certain crops in the region. Warmer winters have led to more pests and diseases, impacting crop yields, and posing challenges for local farmers.

5. Threats to Biodiversity: The unique ecosystem of the Yakima region, including the surrounding forests and wildlife, faces disruptions. Changes in temperature and precipitation patterns can alter habitat and affect the distribution and behavior of plant and animal species.

6. Economic Impacts: The combined effects of extreme heat, droughts, wildfires, and challenges in agriculture can result in significant economic losses for Yakima. The disruption of agricultural activities can lead to reduced revenue, job losses, and increased food prices, impacting both local residents and the broader economy.

To address these impacts and build resilience, it is crucial for Yakima to adapt to the changing climate and implement strategies to mitigate further warming. This may include implementing water conservation measures, promoting sustainable land management practices, investing in renewable energy, and creating emergency plans for extreme weather events. Additionally, engaging in regional and global efforts to reduce greenhouse gas emissions is essential to tackle the root causes of climate change and mitigate the effects in the long run.

BACKGROUND

Yakima's Contribution to Climate Change

- **Transportation:** Like many urban areas, transportation is a significant contributor to GHG emissions in Yakima. This includes emissions from cars, trucks, and other vehicles using fossil fuels for commuting, goods movement, and transportation within the City.
- **Energy Consumption:** The use of electricity and other forms of energy from fossil fuels, such as natural gas, for residential, commercial, and industrial purposes can contribute to GHG emissions in the City.
- **Agriculture:** Yakima is a prominent agricultural region, and agricultural activities can also contribute to GHGs. Emissions can arise from the use of fossil fuels in farming operations, as well as from agricultural waste management practices.
- **Waste Management:** The handling and disposal of waste in landfills can produce methane, a potent GHG. While Yakima may have waste management practices in place, it is essential to manage organic waste to reduce methane emissions effectively.
- **Industrial Processes:** Various industrial processes can contribute to GHG emissions. These emissions might result from energy-intensive manufacturing or chemical processes.

Climate Change Impact on Yakima's Resources

Climate change has had significant impacts on the city of Yakima and its valuable natural resources. As with many regions, Yakima is experiencing changes in temperature, precipitation patterns, and extreme weather events, leading to various environmental and socioeconomic challenges. Some of the notable impacts on the city and its resources include:

- **Heatwaves:** Climate change has led to more frequent and intense heatwaves in Yakima, increasing the risk of heat-related illnesses and deaths, particularly among vulnerable populations.
- **Water Resources:** Yakima heavily relies on water resources for agricultural activities and water supply for its residents. However, climate change has led to changes in the timing and intensity of precipitation, reducing snowpack in the mountains and affecting the availability of water during the dry season. This results in water scarcity, impacting agricultural productivity and the availability of drinking water.
- **Wildfires:** Climate change has contributed to more frequent and intense wildfires in the region. These wildfires can have devastating effects on communities, ecosystems, and air quality. Smoke from wildfires can also pose health risks to residents, especially vulnerable populations.
- **Agriculture:** Yakima is an essential agricultural region known for producing fruits such as apples, cherries, and hops. However, changes in temperature and precipitation patterns can alter

growing seasons and affect crop yields. Warmer temperatures and increased risks of pests and diseases can pose significant challenges to agricultural production.

- **Forests and Biodiversity:** Yakima's forests and biodiversity are vulnerable to the impacts of climate change. Rising temperatures and changing precipitation patterns can affect the distribution and behavior of plant and animal species. These changes can lead to shifts in ecosystems, potentially threatening local biodiversity and ecological balance.
- **Infrastructure:** Extreme weather events, such as heavy rainfall and flooding, can strain the city's infrastructure, leading to damage to roads, bridges, and other public facilities.

Economic Impact: The combination of challenges in agriculture, water availability, and natural disasters can have economic implications for the city and its residents. Reduced agricultural productivity and increased firefighting and recovery costs can impact the local economy.

Yakima's Frontline Communities

The term "Frontline communities" is often used in the context of environmental and social justice movements. These communities are typically the most directly impacted by environmental issues, such as pollution, climate change, or natural disasters, as well as other social and economic challenges. They are called "frontline" because they are on the front lines of experiencing the immediate and often disproportionate impacts of these issues. Frontline communities may include low-income neighborhoods, communities of color, indigenous peoples, and other marginalized groups. These groups often face systemic inequalities, limited access to resources, and unequal representation in decision-making processes related to environmental and social issues.

The median household income for Yakima residents is 27% lower than the median for the State of Washington. Similarly, 22.8% of the city's population earns below the federal poverty level. For the City of Yakima, the most vulnerable and susceptible to the harsh effects of climate change includes those who are experiencing homelessness and are exposed to the elements for long periods of time. Yakima County as a whole saw an increase of 15% of residents classified as homeless from 2022 to 2023.

People with disabilities have largely been systematically ignored by government and sustainability planning. The City of Yakima has the most persons with disability in the county, at 13,897. People with disabilities are among the most vulnerable to climate impacts, partly because of the nature of their disabilities and the social disadvantage that often accompany this. They tend to be poorer and have fewer resources. People who use wheelchairs are among the most vulnerable to the climate crisis.

Climate change is a "threat multiplier", meaning it escalates social, political and economic tensions in fragile and conflict-affected settings. As climate change drives conflict across the world, women and girls face increased vulnerabilities to all forms of gender-based violence, including conflict-related sexual violence, human trafficking, child marriage, and other forms of violence. Yakima already has the second highest rate of domestic violence in the state. Women and girls experience the greatest impacts of climate change, which amplifies existing gender inequalities and gender-based violence, and poses unique threats to their livelihood, health, and safety.

Alignment with Existing Plans & Laws

Relationship to Other City Plans

The Sustainable Yakima Committee considered other City Plans during the development of the Climate Action Plan (Plan). These plans either inform or could be informed by the Plan. Some of these documents already emphasize climate and sustainability solutions outlined in this Plan, while others will need to be updated to integrate sustainability and climate action.

Comprehensive Plan 2040

Goal 2.7

- Equity Study (2016)
- East-West Analysis
- Bicycle Master Plan (2017)
- Pedestrian Master Plan (2021)
- Continue to work with schools on Safe Route to School Plans
- Housing Action Plan (2021)
- Water Use Efficiency Goals and Objectives (2017)
- Community Health and Safety Plan (2018)

Relationship to Regional Plans & Programs

- Yakima County Comprehensive Emergency Management Plan (2019)
- Yakima County Trails Plan (2020)
- 6-Year Transportation Improvement Program 2023-2028 (2023)
- Yakima River Basin Integrated Plan

Related State Code

- 2019 Clean Energy Transformation Act (CETA)
- Revised Code of Washington 70A.45.020 - - Greenhouse Gas Emissions Reductions
- Revised Code of Washington Chapter 19.27A - - Washington State Energy Code

Cities & Organizations

This Sustainability Action Plan was developed using multiple models for guidance, including the following:

- City of Spokane - Spokane Sustainability Action Plan (2021)
- City of Bellingham - Climate Protection Action Plan (2018)
- City of Vancouver - Climate Action Framework (2022)
- Yakama Nation - Climate Action Plan for the Territories of the Yakama Nation (2019)

AREAS OF FOCUS

Sector 1: Environmental Justice

Environmental justice is a concept that addresses the fair distribution of environmental benefits and burdens, particularly in relation to the impact of environmental hazards on different communities. It emerged in the United States during the 1980s as a response to the recognition that low-income and minority communities often bear a disproportionate burden of environmental pollution and lack access to environmental benefits.

The environmental justice movement aims to rectify historical and systemic environmental injustices, promote environmental equity, and ensure that all individuals and communities have the right to a clean and healthy environment. Efforts include grassroots organizing, legal actions, policy advocacy, and collaboration between communities, environmental organizations, and policymakers. The goal is to create a more inclusive and sustainable approach to environmental protection that prioritizes the well-being of all people, regardless of their socio-economic background or cultural identity.

This plan will focus on two aspects of environmental justice: community resilience and housing.

Community Resilience

Goal: Ensure the community has equitable access to resources such as clean water and air, healthy attainable and affordable housing, nutritious food, and living wage jobs.

- ▶ **Strategy 1:** Conduct community outreach to address the concerns and needs of marginalized groups and what resolutions or assistance is needed.
 - **Actions:**
 - Review regional policies and initiatives that support equitable access to resources for all. (1-Year Plan)
 - Recommend policies and initiatives that support equitable access to resources for all. (5-Year Plan)
 - Implement policies and initiatives that support equitable access to resources for all. (5-10 Year Plan)
- ▶ **Strategy 2:** Leverage current unused and vacant properties owned by the city for potential sustainable activities.
 - **Actions:** Review current unused and vacant properties owned by the city. (1-Year Plan)
 - **Actions:** Recommend utilizing unused and vacant properties owned by the city. (5-Year Plan)
- ▶ **Strategy 3:** Educate the community on ways to keep themselves safe and their homes safe during natural disasters or significant events.
 - **Actions:** Develop workshops and educational tools. (5-Year Plan)
- ▶ **Strategy 4:** Address Food Insecurity.
 - **Actions:**
 - Promote local food campaigns/food banks. (1-Year Plan.)

- Partner with organizations that serve food-insecure populations to provide access to fresh, healthy food via a community garden space and local produce markets. (1-Year Plan)
- Support and promote food hubs to distribute locally produced food. (1-Year Plan)
- Support expansion of businesses that connect customers to restaurants and stores that have unsold surplus food. (5-Year Plan)
- **Strategy 5:** Develop a community garden.
 - **Actions:**
 - Identify current community gardens. (1-Year Plan)
 - Support interested neighborhoods in creating community garden spaces and incentivize developers to include community garden space in new development. (5-Year Plan)
 - Support schools and youth education programs that teach students how to grow and prepare fresh produce. (5-Year Plan)

Housing

Goal: Ensure residents of Yakima are adequately housed in homes and shelters equipped to handle extreme wildfire and weather events and have access to shelters.

- **Strategy 1:** Promote adequate housing to support economic development.
 - **Action:**
 - Incentivize housing developments based on affordability and proximity to active transportation corridors. (10-Year Plan)
- **Strategy 2:** Assist residents to feel comfortable and safe in their homes for future effects of climate change.
 - **Action:** Provide extreme weather shelters. (1-Year Plan)
 - **Action:** Promote and utilize State and Federal programs for weatherization. (1-Year Plan)
- **Strategy 3:** Review single-family zoning to encourage higher-density housing.
 - **Action:** During the next Growth Management Act (GMA) Comprehensive Plan Update, adjust land use designation to promote higher density housing opportunity. (5-Year Plan)
- **Strategy 4:** Support resilience in the event of extreme weather events such as backup energy supplies, water, and shelters.
 - **Action:** Review current Emergency Management Plans. (1-Year Plan)
 - **Action:** Recommend additional measures. (5-Year Plan)
- **Strategy 5:** Promote building codes to encourage green building practices.
 - **Action:** Review current housing codes. (5-Year Plan)

Sector 2: Energy Efficiency and Renewable Energy

Energy efficiency and renewable energy are two key components of sustainable and responsible energy practices. Both play crucial roles in addressing environmental concerns, reducing reliance on fossil fuels, and mitigating the impacts of climate change.

The interconnection of energy efficiency and renewable energy is common. Combining energy efficiency measures with the use of renewable energy enhances the overall sustainability of energy systems. For example, an energy-efficient building with solar panels can significantly reduce its environmental impact. Energy efficiency measures can help reduce the overall demand for energy, making it easier to meet the remaining energy needs with renewable sources. Both energy efficiency and renewable energy technologies contribute to job creation and economic growth in the clean energy sector.

Energy efficiency and renewable energy are integral components of a sustainable and environmentally friendly energy future. Combining these approaches can contribute to a more resilient and low-carbon energy system while fostering economic growth and addressing climate change.

This plan will focus on two aspects of energy efficiency and renewable energy: reduction of greenhouse gas emissions and buildings and clean energy.

Reduction of greenhouse gas emissions

Goal: Reduce GHG emissions from motorized transportation, including through electrification of all modes.

- ▶ **Strategy 1:** Yakima residents will be able to travel safely and reliably to their destinations, and the City will be able to adequately, affordably, and sustainably construct and maintain roads and streets.

- **Actions:**

- Review current plans. (1-Year)
- Pursue federal and state funding for efficiency improvements. (1-10 Year Plans)
- Expand lighting and other safety features on pedestrian pathways. (1-10 Year Plans)
- Identify areas of the city where pedestrian facilities could be prioritized. (1-10 Year Plans)
- Improve sidewalks, curb ramps, and street crossings near transit stops. (1-10 Year Plans)
- Dedicate increased local funding to the local Safe Routes to School program. (1-10 Year Plans)

- ▶ **Strategy 2:** Encourage land use policies that support navigable, livable, sustainable communities for all.

- **Actions:**

- Review current plans. (1-Year Plan)
- Include infrastructure to support bike parking, charging for electric bikes and scooters, and shared mobility programs. (5-10 Year Plans)
- Encourage active transportation and multi-modal uses across the city's parks, and open spaces that explicitly serve and connect under-developed areas, overburdened communities, and transit-dependent communities. (5-10 Year Plans)

- ▶ **Strategy 3:** Promote and encourage the use of EVs and low-carbon fuels in transportation.

- **Actions:**

- Pursue federal and state funding for efficiency improvements. (1-5 Year Plans)

- Offer non-financial incentives to encourage EV adaptation and expand EV infrastructure, such as resident-select EV charging locations and streamlined permitting for developers. (5-Year Plan)
 - Promote education and advocacy to increase awareness and adoption of low-carbon and alternative fuels. (5-Year Plan)
- ▶ **Strategy 4:** Promote and encourage public transportation and alternative modes of single-occupancy travel.
 - **Actions:**
 - Pursue federal and state funding for efficiency improvements. (1-10 Year Plans)
 - Active transportation development to encourage opportunities for biking, walking, and wheelchairs. (1-5 Year Plan)
 - Work with the school district to promote school bus ridership and explore options for increasing services. (1-5 Year Plans)
 - Encourage active transportation through participation in Safe Routes to School program. (1-Year Plan)
 - Incentive the use of public transportation by providing free rides to city workers. (5-Year Plan)
 - Work with schools to educate students on how to use public transportation. (5-Year Plan)
 - Work with third-party programs and businesses to increase the availability, accessibility, and convenience of shared mobility options (e.g., bike and scooter share programs) (5-Year Plans)
- ▶ **Strategy 5:** Review current fleet management practices.
 - **Actions:**
 - Ensure that new transit developments have features for safety, accessibility, and comfort. Identify and secure adequate permanent funding for fossil fuel alternatives for sustainable transportation. (5-10 Year Plans)

Buildings and Clean Energy

Goal: Reduce emissions from all municipal, commercial, industrial, and residential buildings.

- ▶ **Strategy 1:** Encourage efficient, renewable energy buildings that meet WA Clean Building Act targets.
 - **Actions:**
 - Provide education and technical support to building owners. (1-5 Year Plans)
 - Pursue federal and state funding for efficiency improvements. (1-10 Year Plans)
 - In cooperation with environmental groups and solar installers, developing a marketing program to Yakima residents and businesses to encourage installation of solar systems on or at their property. (1-5 Year Plans)
- ▶ **Strategy 2:** Increase education on energy-saving strategies.
 - **Actions:**
 - Provide education and technical support to building owners. (1-5 Year Plans)
 - Provide education in schools. (1-5 Year Plans)
- ▶ **Strategy 3:** Retrofit existing buildings to be more energy efficient.

- **Actions:**
 - Pursue federal and state funding for efficiency improvements. (1-10 Year Plans)
 - Provide education and technical support to building owners. (1-5 Year Plans)
 - Partner with organizations that can assess current energy usage, and recommend efficiency improvements. (1-5 Year Plans)

Sector 3: Water Conservation

Water conservation involves the careful management and responsible use of water resources to reduce waste, ensure sustainability, and address water scarcity issues. It is a critical practice given the increasing global demand for water, coupled with the impact of climate change on water availability.

Water conservation is essential for ensuring sustainable water supplies for current and future generations. It requires a multi-faceted approach involving individuals, communities, businesses, and policymakers working together to manage and use water resources wisely.

Goal: Conserve community water resources and increase water efficiency savings through education, outreach, retrofitting, and rebates that ensure overburdened communities see the benefits of water conservation.

► **Strategy 1:** Educate and engage the community in water resources stewardship.

- **Actions**
 - Promote and fund City programs encouraging water conservation (5-10 Year Plan)

► **Strategy 2:** Ensure a sustainable water supply.

- **Actions:**
 - Review current plans/policies. (1-Year Plan)
 - Create clear processes and policies for assessing and approving land use and development that will impact future aquifer pumping volumes. (1-10 Year Plans)
 - Continue to work with and support Yakima River Basin Integrated Plan. (1-10 Year Plans)

► **Strategy 3:** Encourage reduction of irrigation use.

- **Actions:**
 - Educate homeowners/landscapers on efficient irrigation practices. (1-5 Year Plans)
 - Rainwater capture incentives (5-10 Year Plans)
 - Drought-tolerant landscaping incentives (Heritage Garden) (5-10 Plans)
 - Increase resilience by reducing stressors such as non-native noxious species. (5-10 Year Plans)

Sector 4: Carbon Offsetting

Carbon offsetting is a practice that involves compensating for the greenhouse gas emissions generated

in one location by investing in projects that reduce or remove an equivalent amount of emissions elsewhere. The goal is to achieve a balance between emissions produced and emissions removed or reduced, ultimately helping to mitigate climate change.

Carbon offsetting is often seen as a temporary solution to address emissions that are challenging to eliminate completely, especially in the short term. It is crucial, however, for entities to prioritize reducing their own emissions through sustainable practices and technologies before relying on offsetting as a sole strategy. Carbon offsetting should complement broader efforts toward achieving a low-carbon and sustainable future.

Goal: Yakima will implement policies to improve air quality.

► **Strategy 1:** Increase tree canopy and climate-adapted plant landscapes.

○ **Actions:**

- Plant trees throughout the city to help reduce air pollution and reduce urban heat. (1-10 Year Plans)
- Develop educational programs to promote tree plantings with residents. Tie it to Earth Day, or Arbor Day. (5-Year Plan)

► **Strategy 2:** Utilize City properties to increase canopy for carbon sequestration.

- Review the current Parks & Recreation plan. (1-Year Plan)
- Review inventory of City owned, unused and/or vacant properties. (1-Year Plan)

Sector 5: Recycling and Waste Management

Recycling and waste management are critical components of sustainable resource management aimed at minimizing the environmental impact of human activities. Recycling conserves resources, reduces energy consumption, decreases landfill waste, and minimizes pollution. It also helps lower greenhouse gas emissions associated with the extraction and manufacturing of virgin materials. Effective waste management requires a comprehensive and integrated approach that prioritizes waste reduction, encourages recycling and reuse, and ensures safe and environmentally sound disposal practices. Sustainable waste management practices contribute to resource conservation, pollution prevention, and a healthier environment.

Effective recycling and waste management require collaboration among individuals, businesses, communities, and governments. By adopting sustainable practices, reducing waste generation, and promoting responsible resource management, societies can contribute to a more environmentally friendly and resilient future.

Goal: Establish additional drop-off recycling collection location accessible to the entire community and increase the number of public recycling bins throughout the city. Develop clear, positive, and targeted communication campaigns to limit waste.

► **Strategy 1:** Conduct a waste audit. (5 Year Plan)

► **Strategy 2:** Increase Recycling education in schools.

- **Actions:**
 - Work with schools to create educational campaigns for students and families (5-Year Plan)
- ▶ **Strategy 3:** Develop and implement strategies to reduce food waste and increase access to healthy, affordable food for all city residents.
 - **Actions**
 - Maximize composting of inedible food, yard waste, and other organic waste. (5-10 Year Plans)
 - Support & promote Food Hubs to address food scarcity and prevent food waste. (1-Year Plan)
- ▶ **Strategy 4:** Educational campaign to reduce food waste.
 - **Actions:**
 - Work with schools to create educational campaigns for students and families. (1-5 Year Plans)
- ▶ **Strategy 5:** Set recycling goals.
 - **Actions:**
 - Promote, support, and incentivize a circular economy (a model of production and consumption, which involves sharing, leasing, reusing, repairing, refurbishing, and recycling existing materials) (5-10 Year Plans)
 - Improve recycling infrastructure to recycle more items. (5-10 Year Plan).

KEY TERMS

TERM	DEFINITION
Adaptation	Actions in response to an event and its effects, that lessen harm or exploit beneficial opportunities. It includes reducing the vulnerability of people, places, and ecosystems to the impacts of climate changes.
Biodigester	A technology in which organic waste material is decomposed by microbial action and typically produces biogas, which can then be used as a renewable fuel or converted to renewable electricity to offset fossil fuel use.
Carbon Dioxide Equivalent (CO₂e)	A measurement that describes how much global warming potential a given type and amount of greenhouse gas may cause using the functionally equivalent amount or concentration of carbon dioxide as the reference.
Climate	The average pattern for weather over a period of months, years, decades, or longer in a specific place.
Climate Change	Any significant change in measures of climate (such as temperature, precipitation, or wind) lasting for an extended period of time (decades or longer). Climate change may result from natural factors and processes and from human activities that change the atmosphere's composition and land surface.
Climate Change Adaptation	Actions to adjust to actual or expected climate and its effects, which seek to lower the risks posed by the consequences of climate changes.
Climate Change Mitigation	Actions to limit the magnitude or rate of climatic changes and their related effects by reducing greenhouse gas emissions.
Climate Resilient Community	A community that takes proactive steps to prepare for (i.e., reduce the vulnerabilities and risk associated with) climate change impacts.
Emission intensity	The discharge rate of a given pollutant relative to the intensity of a specific activity.
Energy Audit	An assessment and analysis of energy flows for energy conservation in a building.
Energy Efficiency	Energy efficiency refers to using less energy to perform the same tasks or achieve the same level of output. It involves optimizing the use of energy resources to minimize waste and increase overall productivity.
Equity Action	Specific programs, policies, or initiatives that make climate actions more accessible and/or less harmful to underserved communities and increase benefits to traditionally underserved populations.
Equity Outcome	A resulting effect that supports equality through increasing benefits or mitigating harmful impacts to traditionally underserved populations or by making

	programs more accessible to underserved populations.
Exposure	The nature and degree to which a system is subjected to significant climate variations.
Fossil Fuel	Fuel formed from the remains of living organisms through natural processes that occur in the earth.
Greenhouse Gas (GHG)	Gas that traps heat in the atmosphere by absorbing infrared radiation.
GHG Emissions Inventory	A study that quantifies the greenhouse gas emissions that are generated within a specific boundary. The boundary can be geographic, such as the City of Yakima.
Renewable Energy	Renewable energy comes from sources that are naturally replenished on a human timescale. These sources include sunlight (solar energy), wind, rain, tides, waves, geothermal heat, and biomass. Unlike fossil fuels, these sources do not deplete over time.
Resilience	The ability of a system and its component parts to anticipate, absorb, accommodate, or recover from the effects of a hazardous event in a timely and efficient manner, including through ensuring the preservation, restoration, or improvement of its essential basic structure and functions.
Sensitivity	The degree to which a built, natural, or human system is directly or indirectly affected by changes in conditions.
Stressor	A chemical or biological agent, environmental condition, external stimulus, or an event that causes stress to an organism.
Vulnerability	The degree to which a system is susceptible to, or unable to cope with, adverse effects of climate change, including climate variability and extremes. It is a function of the sensitivity of a particular system to climate changes, its exposure to those changes, and its capacity to adapt to those changes.

Committee Members

Jeff Scott	Chair
Ray Paolella	Vice-Chair
Dan Schapiro	Secretary
Jennifer Hickenbottom	
Marcelino Osorio	
Jeremy Leavitt (resigned Nov 2023)	
Ajit Gill	Student representative

Table: Summary of the Sectors, Components, and Plans

Sector	Component	1-Year Plan	5-Year Plan	10-Year Plan
Environmental Justice	Community Resilience			
	Strategy 1 Conduct community outreach to address the concerns and needs of marginalized groups and what resolutions or assistance is needed.	Review regional policies and initiatives that support equitable access to resources for all.	Recommend policies and initiatives that support equitable access to resources for all.	Implement policies and initiatives that support equitable access to resources for all.
	Strategy 2 Leverage current unused and vacant properties owned by the city for potential sustainable activities.	Review current unused and vacant properties owned by the city.	Recommend utilizing unused and vacant properties owned by the city.	
	Strategy 3 Educate the community on ways to keep themselves safe and their homes safe during natural disasters or significant events.		Develop workshops and educational tools.	
	Strategy 4 Address Food Insecurity.	- Promote local food campaigns/food banks. - Partner with organizations that serve food-insecure populations to provide access to fresh, healthy food via a community garden space and local produce markets. - Support and promote food hubs to distribute locally produced food.	Support expansion of businesses that connect customers to restaurants and stores that have unsold surplus food.	
	Strategy 5 Develop a community garden.	Identify current community gardens.	- Support interested neighborhoods in creating community garden spaces and incentivize developers to include community garden space in new development. - Support schools and youth education programs that teach students how to grow and prepare fresh produce.	
	Housing			Incentivize housing developments based on affordability and proximity to active transportation corridors.
	Strategy 1 Promote adequate housing to support economic development.			
	Strategy 2 Assist residents to feel comfortable and safe in their homes for future effects of climate change.	- Provide extreme weather shelters. - Promote and utilize State and Federal programs for weatherization.		
	Strategy 3 Review single-family zoning to encourage higher-density housing.		During the next Growth Management Act (GMA) Comprehensive Plan Update, adjust land use designation to promote higher density housing opportunity.	
	Strategy 4 Support resilience in the event of extreme weather events such as backup energy supplies, water, and shelters.	Review current Emergency Management Plans.	Recommend additional measures.	
	Strategy 5		Review current housing codes.	

Energy Efficiency and Renewable Energy				
Promote building codes to encourage green building practices.				
Reduction of Green House Gas Emissions				
Strategy 1 Yakima residents will be able to travel safely and reliably to their destinations, and the City will be able to adequately, affordably, and sustainably construct and maintain roads and streets.	Review current plans. • Pursue federal and state funding for efficiency improvements. • Expand lighting and other safety features on pedestrian pathways. • Identify areas of the city where pedestrian facilities could be prioritized. • Improve sidewalks, curb ramps, and street crossings near transit stops. • Dedicate increased local funding to the local Safe Routes to School program.	• Pursue federal and state funding for efficiency improvements. • Expand lighting and other safety features on pedestrian pathways. • Identify areas of the city where pedestrian facilities could be prioritized. • Improve sidewalks, curb ramps, and street crossings near transit stops. • Dedicate increased local funding to the local Safe Routes to School program.	• Pursue federal and state funding for efficiency improvements. • Expand lighting and other safety features on pedestrian pathways. • Identify areas of the city where pedestrian facilities could be prioritized. • Improve sidewalks, curb ramps, and street crossings near transit stops. • Dedicate increased local funding to the local Safe Routes to School program.	
	Strategy 2 Encourage land use policies that support navigable, livable, sustainable communities for all.	Review current plans. • Include infrastructure to support bike parking, charging for electric bikes and scooters, and shared mobility programs. • Encourage active transportation and multi-modal uses across the city's parks, and open spaces that explicitly serve and connect under-developed areas, overburdened communities, and transit-dependent communities.	• Include infrastructure to support bike parking, charging for electric bikes and scooters, and shared mobility programs. • Encourage active transportation and multi-modal uses across the city's parks, and open spaces that explicitly serve and connect under-developed areas, overburdened communities, and transit-dependent communities.	
	Strategy 3 Promote and encourage the use of EVs and low-carbon fuels in transportation.	Pursue federal and state funding for efficiency improvements. • Offer non-financial incentives to encourage EV adaptation and expand EV infrastructure, such as resident-select EV charging locations and streamlined permitting for developers. • Promote education and advocacy to increase awareness and adoption of low-carbon and alternative fuels.	• Pursue federal and state funding for efficiency improvements. • Offer non-financial incentives to encourage EV adaptation and expand EV infrastructure, such as resident-select EV charging locations and streamlined permitting for developers. • Promote education and advocacy to increase awareness and adoption of low-carbon and alternative fuels.	
	Strategy 4 Promote and encourage public transportation and alternative modes of single-occupancy travel.	• Pursue federal and state funding for efficiency improvements. • Active transportation development to encourage opportunities for biking, walking, and wheelchairs. • Work with the school district to promote school bus ridership and explore options for increasing services. • Encourage active transportation through participation in Safe Routes to School program.	• Pursue federal and state funding for efficiency improvements. • Active transportation development to encourage opportunities for biking, walking, and wheelchairs. • Work with the school district to promote school bus ridership and explore options for increasing services. • Incentive the use of public transportation by providing free rides to city workers.	• Pursue federal and state funding for efficiency improvements.

			• Work with schools to educate students on how to use public transportation. • Work with third-party programs and businesses to increase the availability, accessibility, and convenience of shared mobility options (e.g., bike and scooter share programs)	• Ensure that new transit developments have features for safety, accessibility, and comfort. Identify and secure adequate permanent funding for fossil fuel alternatives for sustainable transportation.
	Strategy 5 Review current fleet management practices.			
	Buildings and Clean Energy			
	Strategy 1 Encourage efficient, renewable energy buildings that meet WA Clean Building Act targets.	• Provide education and technical support to building owners. • Pursue federal and state funding for efficiency improvements. • In cooperation with environmental groups and solar installers, developing a marketing program to Yakima residents and businesses to encourage installation of solar systems on or at their property.	• Provide education and technical support to building owners. • Pursue federal and state funding for efficiency improvements. • In cooperation with environmental groups and solar installers, developing a marketing program to Yakima residents and businesses to encourage installation of solar systems on or at their property.	• Pursue federal and state funding for efficiency improvements.
	Strategy 2 Increase education on energy-saving strategies.	• Provide education and technical support to building owners. • Provide education in schools.	• Provide education and technical support to building owners. • Provide education in schools.	
	Strategy 3 Retrofit existing buildings to be more energy efficient.	• Pursue federal and state funding for efficiency improvements. • Provide education and technical support to building owners. • Partner with organizations that can assess current energy usage and recommend efficiency improvements.	• Pursue federal and state funding for efficiency improvements. • Provide education and technical support to building owners. • Partner with organizations that can assess current energy usage and recommend efficiency improvements.	• Pursue federal and state funding for efficiency improvements.
	Water Conservation			
	Strategy 1 Educate and engage the community in water resources stewardship.			• Promote and fund City programs encouraging water conservation
	Strategy 2 Ensure a sustainable water supply.	• Review current plans/policies. • Create clear processes and policies for assessing and approving land use and development that will impact future aquifer pumping volumes. • Continue to work with and support Yakima River Basin Integrated Plan.	• Create clear processes and policies for assessing and approving land use and development that will impact future aquifer pumping volumes. • Continue to work with and support Yakima River Basin Integrated Plan.	• Create clear processes and policies for assessing and approving land use and development that will impact future aquifer pumping volumes. • Continue to work with and support Yakima River Basin Integrated Plan.
	Strategy 3 Encourage reduction of irrigation use.	• Educate homeowners/landscapers on efficient irrigation practices.	• Educate homeowners/landscapers on efficient irrigation practices.	• Rainwater capture incentives

				• Rainwater capture incentives • Drought-tolerant landscaping incentives (Heritage Garden) • Increase resilience by reducing stressors such as non-native noxious species.	• Drought-tolerant landscaping incentives (Heritage Garden) • Increase resilience by reducing stressors such as non-native noxious species.
Carbon Offsetting	Carbon Offsetting				
	Strategy 1 Increase tree canopy and climate-adapted plant landscapes.		Plant trees throughout the city to help reduce air pollution and reduce urban heat.	• Plant trees throughout the city to help reduce air pollution and reduce urban heat. • Develop educational programs to promote tree plantings with residents. Tie it to Earth Day, or Arbor Day	Plant trees throughout the city to help reduce air pollution and reduce urban heat.
	Strategy 2 Utilize City properties to increase canopy for carbon sequestration.		• Review the current Parks & Recreation plan. • Review inventory of City owned, unused and/or vacant properties.		
Recycling and Waste Management	Recycling and Waste Management				
	Strategy 1 Conduct a waste audit.			Conduct a waste audit.	
	Strategy 2 Increase Recycling education in schools.			Work with schools to create educational campaigns for students and families	
	Strategy 3 Develop and implement strategies to reduce food waste and increase access to healthy, affordable food for all city residents.		Support & promote Food Hubs to address food scarcity and prevent food waste.	Maximize composting of inedible food, yard waste, and other organic waste.	Maximize composting of inedible food, yard waste, and other organic waste.
	Strategy 4 Educational campaign to reduce food waste.		Work with schools to create educational campaigns for students and families.	Work with schools to create educational campaigns for students and families.	
	Strategy 5 Set recycling goals.			• Promote, support, and incentivize a circular economy (a model of production and consumption, which involves sharing, leasing, reusing, repairing, refurbishing and recycling existing materials) • Improve recycling infrastructure to recycle more items.	• Promote, support, and incentivize a circular economy (a model of production and consumption, which involves sharing, leasing, reusing, repairing, refurbishing and recycling existing materials) • Improve recycling infrastructure to recycle more items.



Notification of Award

March 22, 2022

Attn: Raymond L. Paoella, President
William O. Douglas Trail Foundation
P.O. Box 2003
Yakima, WA 98907

Dear Mr. Paoella

Thank you for submitting your Letter of Request for Funding for Building Resilient Inclusive Communities (BRIC) Funds.

I am pleased to inform you that the William O' Douglas Trail Foundation has been awarded its full requested amount of \$6,900.00.

Our accounting department requires a W-9 from all awarded applicants. Please submit this to Jessica.vandoren@co.yakima.wa.us. **Please note: All BRIC funds need to be invoiced to the Yakima Health District by June 1, 2022.**

We look forward to seeing how the project evolves with the help of the BRIC funds. We welcome the opportunity to collaborate with any future activities that help engage and increase safe physical activity that results in a healthier future for Yakima County.

Sincerely,

Lilián Bravo
Director of Public Health Partnerships

Rivera, Eva

From: 350 Yakima Climate Action <350yakimaclimateaction@gmail.com>
Sent: Wednesday, October 14, 2026 12:46 PM
To: Ask Planning; Preston, Bill; Martin, Trevor
Cc: Ray Paolella; Bob Cox; Felipe Rodriguez-Flores
Subject: Comments on Yakima's draft Comprehensive Plan 2050 by 350 Yakima Climate Action - Part 2 of 2
Attachments: 350 Yakima Comments on Comp Plan 2050 & SEPA Documents.pdf; SEPA ENVIRONMENTAL CHECKLIST.pdf; Naches River Bridge ADA ramp up to Landing Wayside.pdf; YNCRP Letter to City of Yakima 12.3.2025.pdf; Landslide High Risk Info along Railroad Tracks.pdf; UTC & BNSF Approval of Shared Use Trail in RR ROW (2008).pdf

Dear Planning Commission,

Attached is a letter from 350 Yakima Climate Action with comments on the City's draft Comprehensive Plan 2050, along with 10 attachments.

NOTE: Due to the length of attachments, we are sending attachments in two separate emails. This is Part 2 of 2.

Please include these in the public record today.

Thank you,

Coleen Anderson
350 Yakima Climate Action
346 N 24th Avenue
Yakima, WA 98902
[360-731-4555](tel:360-731-4555)

cc: Ray Paolella
Felipe Rodriguez Flores
Bob Cox

Attachments:
SEPA Environmental Checklist
Naches River Bridge ADA Ramp Up
YNCRP Letter to City
Landslide High Risk Info
UTC & BNSF Approval of Shared Use Trail

--
350 Yakima Climate Action acknowledges we live and work on the ancestral lands of the fourteen Confederated Tribes and Bands of the Yakama Nation. The people of the Yakama Nation inhabited more than 12 million acres across Adams, Benton, Chelan, Douglas, Franklin, Grant, Kittitas, Klickitat, and Yakima Counties. We thank the caretakers of this land who have lived here and continue to live here since time immemorial.

October 13, 2026

City of Yakima Planning Commission
Planning Division
129 N. 2nd Street
Yakima, WA 98901

RE: Yakima Comprehensive Plan 2050 and State Environmental Policy Act (SEPA)

Dear City of Yakima Planning Commission and Planning Division:

City of Yakima's Notice of Public Hearing/Notice of Environmental Review (9/24/2026) requests comments on the: (1) proposed Yakima Comprehensive Plan 2050 and (2) SEPA Environmental Checklist and proposed Determination of Non-Significance (DNS). Please accept these comments from 350 Yakima Climate Action relating to SEPA Review of the GMA-required Climate Resiliency Subelement and the Transportation Element's required Multimodal and Active Transportation provisions since the transportation sector produces about half of all climate-warming greenhouse gas emissions in Washington State. Please include this letter and all the attachments in the October 14, 2026 Public Hearing Record.

Growth Management Act (GMA) Requirements

The City of Yakima must adopt a *resiliency subelement* as part of the City's GMA Comprehensive Plan Update.

The resiliency subelement must equitably enhance resiliency to, and avoid or substantially reduce the adverse impacts of, climate change in human communities and ecological systems through goals, policies, and programs consistent with the best available science and scientifically credible climate projections and impact scenarios that moderate or avoid harm, enhance the resiliency of natural and human systems, and enhance beneficial opportunities. The resiliency subelement must prioritize actions that benefit overburdened communities that will disproportionately suffer from compounding environmental impacts and will be most impacted by natural hazards due to climate change.

Under state law, the resiliency subelement must have specific goals, policies, and programs to:

- (A) Identify, protect, and enhance natural areas to foster resiliency to climate impacts, as well as areas of vital habitat for safe passage and species migration;
- (B) Identify, protect, and enhance community resiliency to climate change impacts, including social, economic, and built environment factors, that support adaptation to climate impacts consistent with environmental justice; and
- (C) Address natural hazards created or aggravated by climate change, including sea level rise, landslides, flooding, drought, heat, smoke, wildfire, and other effects of changes to temperature and precipitation patterns.

According to Department of Commerce Guidance, the City of Yakima can meet GMA's "*minimum requirements*" by including in the comprehensive plan "*at least one climate resilience policy for each climate-related hazard (e.g., sea level rise and drought) that is relevant to the jurisdiction.*" Washington Department of Commerce, Climate Element Planning Guidance (Growth Management Services, December 2025):

<https://deptofcommerce.app.box.com/s/glw5yo8jvfsd40eoa4kdsx0fzde3s9ji>

State Environmental Policy Act (SEPA) Requirements

Under RCW Chapter 43.21C and WAC Chapter 197-11, the City of Yakima is required to conduct the SEPA process to analyze direct, indirect, and cumulative impacts of Comprehensive Plan Amendments on public safety, public health, the natural environment, and the built environment. SEPA documents must address probable impacts of future project actions allowed/anticipated by the Comprehensive Plan Amendments. If the proposed Comprehensive Plan Amendments may have a probable significant adverse environmental impact, the SEPA Responsible Official must issue a Determination of Significance (DS) and an Environmental Impact Statement is required.

SEPA Environmental Checklist Inadequate

The SEPA Environmental Checklist (Sept. 24, 2026) is woefully inadequate and should be rewritten to bring it into compliance with state law.

The Environmental Checklist fails to mention the required *Resiliency Subelement*.

The Environmental Checklist fails to discuss efforts to equitably enhance resiliency to, and avoid or substantially reduce the adverse impacts of, climate change in human communities and ecological systems through goals, policies, and programs consistent with the best available science and scientifically credible climate projections and impact

scenarios that moderate or avoid harm, enhance the resiliency of natural and human systems.

The Environmental Checklist fails to discuss:

- Overburdened Communities -- RCW 36.70A.030(31)
- Environmental Justice -- RCW 36.70A.030(17)
- Highly Impacted Communities – RCW 19.405.020(22)
- Vulnerable Populations disproportionately impacted by environmental harms -- RCW 36.70A.030(52)
- Vital habitat for safe passage/species migration -- RCW 36.70A.070(9)(e)
- Best Available Science -- RCW 36.70A.070(9)(e)

The Environmental Checklist mentions “climate goals and policies” but does not discuss the application of policies to avoid or substantially reduce the adverse impacts of climate change in highly impacted human communities with vulnerable populations.

Probable Significant Adverse Environmental Impacts

1. Climate Resiliency: East Yakima Overburdened Community Highly Impacted by Air Pollution

The East Yakima Overburdened Community is delineated in the attached “East Yakima Community 2025 Environmental Justice Report” and “2025 Report: Overburdened Communities Highly Impacted by Air Pollution.”

These reports were produced as a collaboration between the State Departments of Health and Ecology, and the reports contain Best Available Science and present scientifically credible climate projections and impact scenarios. Additional Best Available Science and climate impact scenarios are presented in the attached “Climate Action Plan for the City of Yakima (November 2023)” developed by the Sustainable Yakima Committee.

The East Yakima Overburdened Community has the highest estimated number of deaths per population associated with yearly PM 2.5 air pollution exposure in the entire State of Washington: 78 deaths per 100,000 population. The Lower Yakima Valley Overburdened Community Has the next highest estimated number of deaths per population associated with yearly PM 2.5 air pollution exposure: 56 deaths per 100,000 population.

The Environmental Checklist and Draft Comprehensive Plan 2050 contain no discussion of the very significant adverse climate change impacts in Overburdened Communities. The Environmental Checklist and Draft Comprehensive Plan 2050 have

no goals or policies to identify, protect, and enhance resiliency to climate change impacts on Overburdened Communities. There are no goals or policies to address natural hazards created or aggravated by climate change.

2. Climate Resiliency: Climate-Related Drought

Yakima heavily relies on water resources for agricultural activities and water supply for its residents. However, climate change has led to changes in the timing and intensity of precipitation, reducing snowpack in the mountains, altering the natural water flow regime, and affecting the availability of water during the dry season. This results in water scarcity, impacting agricultural productivity and the availability of drinking water. Drought is a serious hazard arising from climate change that could have profound deleterious impacts on the Yakima Valley economy. Changes in temperature and precipitation patterns due to climate change can alter growing seasons and affect crop yields. Warmer temperatures and increased risks of pests and diseases can pose significant challenges to agricultural production.

3. Community Resiliency: Active Transportation

The East Yakima Overburdened Community currently has inadequate access to green space and outdoor recreation on both sides of the Yakima and Naches River riparian corridors, including access to about 100 acres of public recreational lands at the rivers' confluence and William O. Douglas Hillclimb. The proposed multimodal level of service standards compromise public safety goals by allowing shared uses of City streets lanes by motor vehicles, pedestrians, and bicycles without requiring dedicated space/separation for non-motorized active transportation.

4. Determination of Significance

Due to probable, significant adverse climate impacts, the SEPA Responsible Official is required to issue a Determination of Significance. An environmental impact statement must be prepared for the proposed Comprehensive Plan Amendments. Discussions should include significant direct, indirect, and cumulative environmental impacts, significant irrevocable commitments of natural resources, reasonable alternatives including mitigation measures, and significant environmental impacts which cannot be mitigated. RCW 43.21C.030, RCW 43.21C.031.

Suggested Revisions to Yakima Comprehensive Plan 2050

The proposed Comprehensive Plan 2050 has no identifiable *Resiliency Subelement* and fails to discuss efforts to equitably enhance resiliency to, and avoid or substantially reduce the adverse impacts of, climate change in human communities and ecological systems through goals, policies, and programs consistent with the best available

science and scientifically credible climate projections and impact scenarios that moderate or avoid harm, enhance the resiliency of natural and human systems.

The proposed Comprehensive Plan 2050 fails to identify, protect, and enhance community resiliency to climate change impacts, including social, economic, and built environment factors, that support adaptation to climate impacts consistent with environmental justice. The proposed plan does not address potential high-risk landslides where the City proposes to operate and maintain abandoned railroad tracks for public use in Selah Gap. The plan does not have a resilience policy for climate-related drought hazards arising from declining mountain snowpacks that alter the natural water flow regime that City residents and the agricultural economy rely on.

To equitably enhance resiliency to the adverse impacts of climate change in human communities and ecological systems and to avoid worsening localized climate impacts in overburdened communities, the Comprehensive Plan should include specific goals and policies to identify, protect, and enhance resiliency to climate change impacts in human communities and ecological systems and address natural hazards created or aggravated by climate change, as recommended in the “Climate Action Plan for the City of Yakima (November 2023)” developed by the Sustainable Yakima Committee based on Best Available Science (Attached).

The Yakima Greenway and William O. Douglas Trail that serve the residents of the East Yakima Overburdened Community should be completed and maintained to provide Vulnerable Populations with access to green space and outdoor recreation on both sides of the Yakima and Naches River riparian corridors, including access to about 100 acres of public recreational lands at the rivers confluence and William O. Douglas Hillclimb. Safe pedestrian and bicycle connections to the City’s Lower Cowiche Canyon/William O. Douglas Trail should be prioritized for recreational access and commuting by residents in East Yakima. Consistent with evolving state transportation standards to protect public safety, multimodal levels of service in the Transportation Element should be revised to require spatial separation between active transportation and motorized vehicles. Future transportation projects should have dedicated, protected pedestrian, bicycle, and ADA facilities.

Additional specific policies should be considered in the Comprehensive Plan to address Climate Resiliency:

- Solar panels on every public building.
- Work toward transitioning public transportation to electric.
- Require trees be planted with all new development. For example, in San Antonio, Texas, before any development of property a tree application must be submitted. See [Tree Preservation - City of San Antonio](#)

- The City should plant more trees in overburdened communities. See Health Disparities Map at [Environmental Health Disparities \(EHD\) Map](#)
- The City should plant more trees than currently exist along creeks and rivers and especially along salmon streams and riparian areas
- Build/designate cooling/warming centers and make sure the community knows where they are, especially the houseless. See information here: [How to Turn Facilities into Public Cooling Centers During Extreme Heat - Facilities Management Advisor](#)
- Protect and conserve water by putting limits on the amount of irrigation water and restricting specific activities—such as limiting outdoor lawn watering schedules, banning runoff, or adjusting pricing tiers to discourage heavy usage. See what they did in California: [CA adopts mandatory water conservation rules - CalMatters](#)
- Build/designate fresh air centers during poor air quality days and make sure the community knows where they are, especially those highly impacted by air pollution such as outdoor workers, unhoused populations and tribes
- Protect workers from wildfire smoke. See: [Portal for Protection from Wildfire Smoke](#)
- **Use portable air cleaners:** During poor air quality days, deploy portable HEPA air purifiers in rooms where large numbers of people gather if central HVAC upgrades are not immediately possible.
- Frontline communities may live in homes that aren't properly sealed, don't have access to air purifiers, and often cannot afford to stay inside on poor air quality days due to work that exposes them to the poor air quality. We need to be sure they can access clean air spaces.
- All tribes are considered overburdened communities, so these measures should be in all tribal lands.
- Work with community-based organizations to ensure proper training and education on being prepared for poor air quality and how to use a mask. Ensure that outreach is done in a culturally competent and humble way and in each participant's native language. [Read about Emergency Operations Plans and cultural competence.](#)
- Maintain a supply of NIOSH-certified N95 respirator masks to be distributed to underserved and vulnerable community members during times of poor air quality. Ozone levels are increased by chemical reaction on hot days.
- Add poor air quality prevention to your [Hazard Mitigation Plan](#). Create and or develop a response protocol for poor air quality days in partnership with frontline communities.
- Establish more robust communication to let people know about health hazards from poor air quality. For example, if more people knew the health risks of jogging on poor air quality days, they wouldn't do it.
- The Yakima County Health District does not take responsibility for sharing important health messages. The City should encourage robust communication on poor air quality days.

- Create clean air centers in frontline communities. Use spaces that are already common gathering spots.
- Create a free air purifier program to distribute air purifiers to frontline communities, [like this program in the City of Ashland](#).
- Measures should be taken to protect outdoor workers during poor air quality and excessive heat days. Create model laws to protect frontline communities from poor air quality. For example, [The Farmworker Smoke Protection Act of 2019, which requires the Occupational Safety and Health Administration \(OSHA\)](#) to address the exposure of farmworkers to wildfire smoke. OSHA will now require employers to offer protective equipment and offer training on how to use it. This is a good start. However, we need enforcement mechanisms to make sure workers are safe and have ways to take time off if they shouldn't be outside.
- Standards should be adopted to control PM2.5 pollution from industrial dairies and other industrial polluters.
- Farmers should be encouraged to utilize no-till farming practices to keep down the dust from the tilling of fields.
- Adopt measures that will require and help farmers plant cover crops when their fields are fallow. See: [The Scientific Case for Paying Farmers to Use Cover Crops and No-Till - National Farmers Union](#)
- The City should consider adopting standards or controls on industrial dairies' unlimited, unmetered use of water
- Apply for grants from the Dept. of Commerce for money available through the Climate Commitment Act to help pay for these measures. See: [Climate Planning Grants – Washington State Department of Commerce](#)

The public should have documents to inform review of the Comprehensive Plan Update and Proposed Determination of Nonsignificance (DNS). Critical documents such as the Proposed Determination of Nonsignificance (DNS), six appendices and Planning Commission 10/14/2026 agenda are not available online, including the "Climate Vulnerability Assessment Memo" and "Climate Element Summary" which has not been released to the public.

Thank you for your consideration,

Coleen Anderson
 Raymond Paoella
 350 Yakima Climate Action

Attachments:

1. *2025 Report: Overburdened Communities Highly Impacted by Air Pollution* by Washington State Departments of Ecology and Health (December 2025, Ecology Publication 25-02-037):
<https://apps.ecology.wa.gov/publications/summarypages/2502037.html>
2. *East Yakima Community 2025 Environmental Justice Report* (Washington State Departments of Ecology):
<https://apps.ecology.wa.gov/publications/parts/2502037part15.pdf>
3. Climate Action Plan for the City of Yakima (November 2023)" developed by the Sustainable Yakima Committee
4. Yakima Health District BRIC Funding Request
5. Yakima Health District BRIC Award Letter
6. SEPA Environmental Checklist
7. Naches River Bridge ADA ramp up to Landing Wayside
8. Yakama Nation Letter to City of Yakima 12.3.2025
9. Landslide High Risk Info along Railroad Tracks
10. UTC & BNSF Approval of Shared Use Trail in RR ROW

SEPA¹ Environmental Checklist

Purpose of checklist

Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization, or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

Instructions for applicants

This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. **You may use “not applicable” or “does not apply” only when you can explain why it does not apply and not when the answer is unknown.** You may also attach or incorporate by reference additional studies reports. Complete and accurate answers to these questions often avoid delays with the SEPA process as well as later in the decision-making process.

The checklist questions apply to **all parts of your proposal**, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Instructions for lead agencies

Please adjust the format of this template as needed. Additional information may be necessary to evaluate the existing environment, all interrelated aspects of the proposal and an analysis of adverse impacts. The checklist is considered the first but not necessarily the only source of information needed to make an adequate threshold determination. Once a threshold determination is made, the lead agency is responsible for the completeness and accuracy of the checklist and other supporting documents.

Use of checklist for nonproject proposals

For nonproject proposals (such as ordinances, regulations, plans and programs), complete the applicable parts of sections A and B, plus the Supplemental Sheet for Nonproject Actions (Part D). Please completely answer all questions that apply and note that the words "project," "applicant," and "property or site" should be read as "proposal," "proponent," and "affected geographic area," respectively. The lead agency may exclude (for non-projects) questions in “Part B: Environmental Elements” that do not contribute meaningfully to the analysis of the proposal.

¹ <https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/Checklist-guidance>

A. Background

[Find help answering background questions²](#)

1. Name of proposed project, if applicable:

City of Yakima Comprehensive Plan 2050 Update, Development Regulation Updates, Revised Critical Areas Ordinance (CAO), and Comprehensive Plan Land Use Amendments (CPA #001-25, CPA #003-25, and CPA #004-25)

2. Name of applicant:

City of Yakima

3. Address and phone number of applicant and contact person:

City of Yakima Community Development
Trevor Martin, Planning Manager
129 N 2nd Street, Yakima, WA 98901
Phone: (509) 576-6754

4. Date checklist prepared:

September 23, 2026

5. Agency requesting checklist:

City of Yakima

6. Proposed timing of schedule (including phasing, if applicable):

Planning Commission Hearing in October and City Council consideration of adoption in November 2026

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

The proposal is a non-project action. Future developments and infrastructure implemented by public and private applicants would be subject to their own environmental review. Three additional comprehensive plan land use amendments (CPA #001-25, CPA #003-25, and CPA #004-25) are being reviewed with this proposal.

The City is also planning to review its development regulations for consistency with the proposed Comprehensive Plan amendments, including zoning, building, subdivision, and critical areas regulations.

² <https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-A-Background>

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

The City of Yakima Comprehensive Plan 2040 draft Supplemental Environmental Impact Statement (SEIS) March 2017, and final FSEIS June 2017. An DNS will be prepared for subsequent annual updates to the Comprehensive Plan.

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

Not applicable to this non-project action. Future development activities may submit applications and would be subject to the plans and regulations in place at the time.

10. List any government approvals or permits that will be needed for your proposal, if known.

The City Council will adopt the 2026 Comprehensive Plan Periodic Update materials (plan and individual docketed amendments), zoning and subdivision code updates, and updated Critical Areas Ordinance following a recommendation by the Planning Commission and a 60-day review by the Washington State Department of Commerce. Prior to adoption, the City will also request comments from Yakima County. The City will work to address agency feedback.

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

The City of Yakima is conducting a periodic review of its Comprehensive Plan consistent with the Growth Management Act (GMA, RCW 36.70A), Yakima County Countywide Planning Policies, and City Guidance. The proposal includes updates to the:

- Comprehensive Plan's vision, goals, policies, background information, and appendices.
- Comprehensive Plan's various chapters with maps, charts, and tables to reflect the updated requirements under the Growth Management Act. This includes an updated Housing Element consistent with new state planning requirements, Future Land Use Map, Capital Facilities Plan to address a range of services and infrastructure, and a new Climate Resilience Element integrated throughout the Plan. No adjustments to the City's Urban Growth Area (UGA) are proposed.
- Comprehensive Plan land use amendments to change land uses for three locations.
- YMC Title 15 Zoning and YMC Title 14 Subdivision for consistency with the Periodic Update and new state requirements, including the following updates to ensure capacity for housing at all income levels:
 - Include unit lot subdivision regulations consistent with state law
 - Include new definitions in the zoning code
 - Update permitted land use sections for consistency with zoning density and emergency housing requirements
 - Update accessory dwelling units code for consistency with state law

- Include regulations for co-living housing
- Update lot development standards in various sections of the code to reduce minimum lot size and setback, increase lot density, height limits, and lot coverages
- Revise parking standards to be consistent with state law.
- Change of land use designations as follows:
 - CPA #001-25: From Mixed Residential to General Commercial
 - CPA #003-25: From Low Density Residential to Neighborhood Commercial
 - CPA #004-25: From Low Density Residential and Mixed Residential to General Commercial

The City is also updating its CAO concurrent with the Comprehensive Plan Periodic Update. The CAO updates include a review of Best Available Science and other local CAOs, and was prepared in coordination with the Periodic Update to ensure consistency between the CAO and related goals and policies in the Comprehensive Plan. Proposed updates to the CAO include revisions to incorporate Best Available Science for protecting and managing critical areas, adding an updated stream classification system, addressing riparian management zones and buffer requirements, wetland buffer reduction under certain conditions, revising wetland functions that consider climate resiliency, adding clarity for mapping and data sources for critical areas, (e.g. geologically hazardous areas mapping), and adding report requirements for fish and wildlife habitat conservation area.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

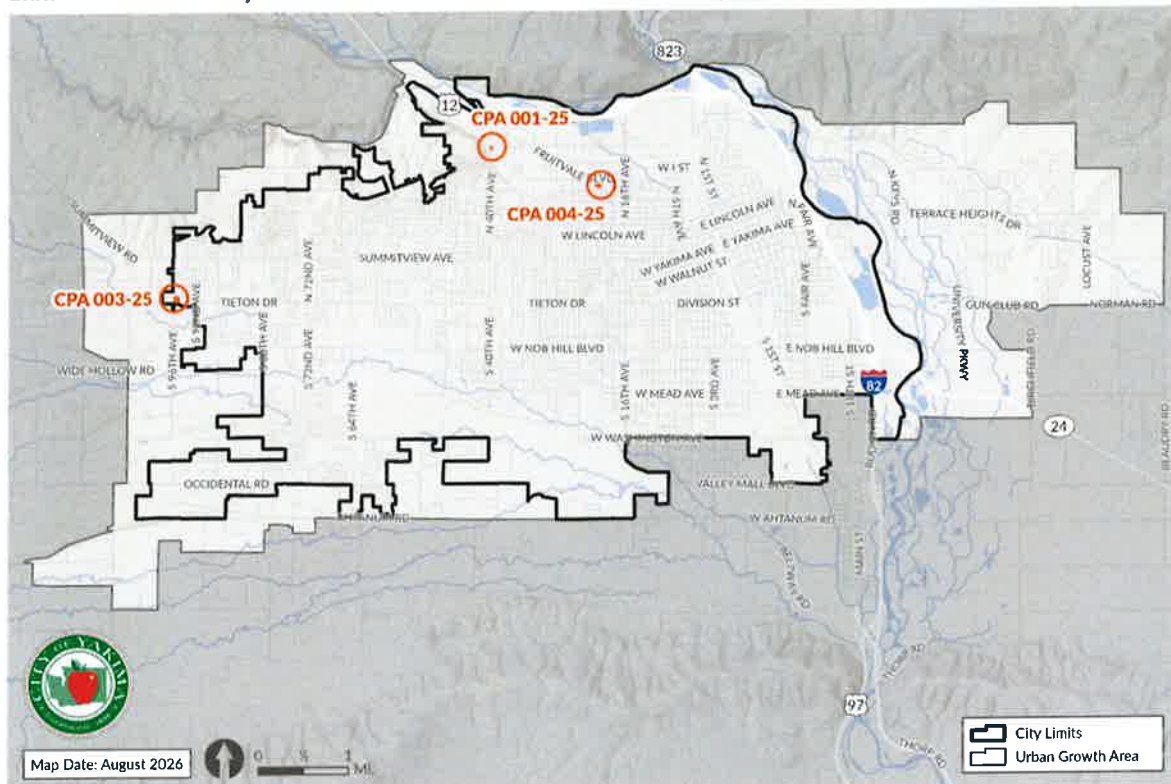
The proposal includes the entire jurisdiction of the City of Yakima (Exhibit 1). The City of Yakima is in Yakima County in the south-central part of Washington. Being at the center of the Yakima Valley, the city borders Yakima River to the east, along with Interstate I-82.

Locations of the Comprehensive Plan Amendments for land use changes are as follows:

- CPA #001-25: 3908 River Road, Yakima
- CPA #003-25: 9503, 9509, 9515 Tieton Drive
- CPA #004-25: 810, 812, 814 N 20th Avenue

Exhibit 1 also shows land use amendment locations within the city.

Exhibit 1: Yakima City Limits and Urban Growth Area and Comprehensive Plan Amendments



Source: City of Yakima, 2025; BERK, 2025.

B. Environmental Elements

1. Earth

[Find help answering earth questions³](#)

a. General description of the site:

Circle or highlight one: ☐ Flat, ☒ rolling, ☐ hilly, ☐ steep slopes, ☐ mountainous, other:

Located in the Yakima Valley, Yakima is mostly flat and the city's average elevation is approximately 1000 ft above sea level. The elevation increases to the south at Ahtanum Ridge to the south side of the city at approximately 2500 ft, and to the north near Naches Heights at approximately 2900 ft. (source: Yakima County GIS, 2026).

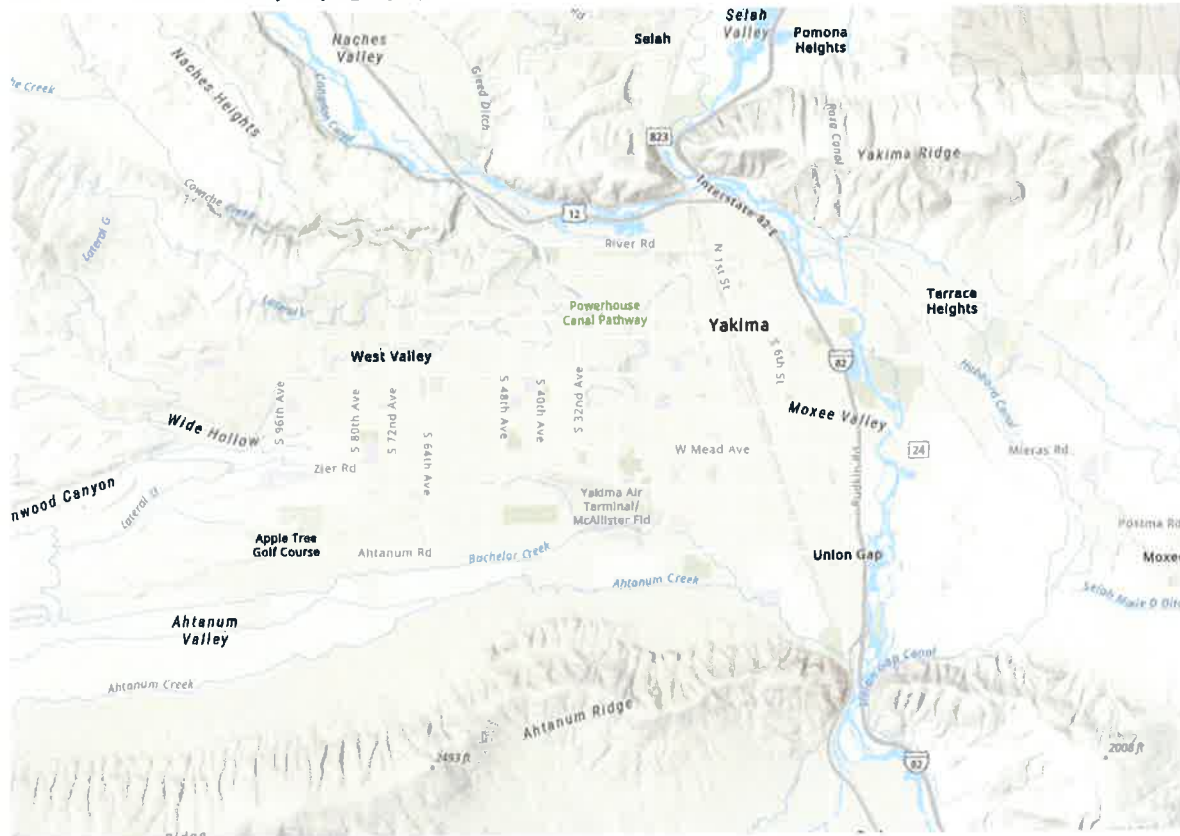
b. What is the steepest slope on the site (approximate percent slope)?

The valley floor is fairly flat with slopes ranging from 0% to 8%. Near the city center area, the slope ranges from 2% to 5% and along the southwest side the slope increases to 5% to 8%. In

³ <https://ecology.wa.gov/regulations-permits/sepa/environmental-review/sepa-guidance/sepa-checklist-guidance/sepa-checklist-section-b-environmental-elements/environmental-elements-earth>

Yakima, high-risk steep slopes are mainly isolated in the city's north and northwestern boundaries along West Powerhouse Road, Prospect Way, and Canyon Creek Road. Moderate risk steep slopes are found near Scenic Drive and Englewood Crest Drive. See Exhibit 2 for the valley topography.

Exhibit 2: Yakima Valley Topography



Source: Yakima County GIS, 2026.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them, and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.

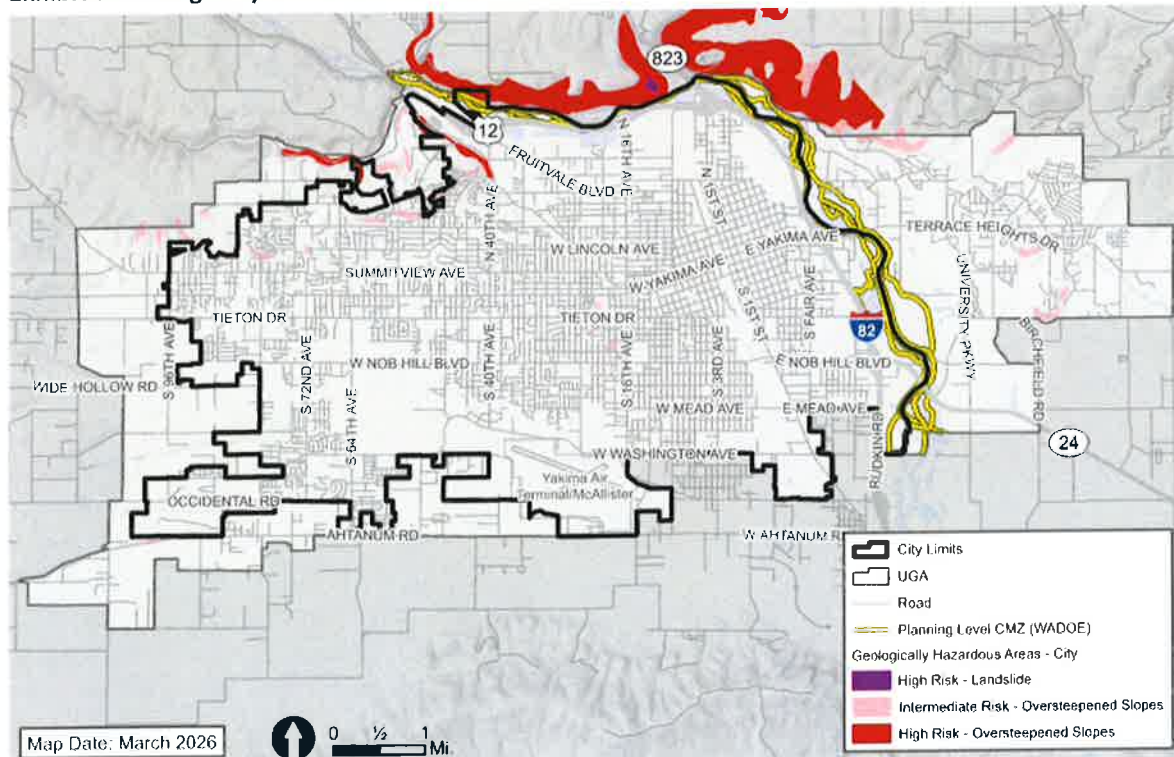
Yakima sits within the semiarid Yakima Valley and features primarily loam, sandy loam, and silt loam soil types according to the USDA [Web Soil Survey](#). These soils are generally well-drained and highly productive when irrigated. The potential exists for siltation where there are Loess soils, particularly during construction. Loess soils are wind-blown and extremely fine. As a result, these soils compact well but may be subject to some erosion, although siltation from runoff after construction is not normally an issue because of low rainfall in the area. Soils transition to very loose silty sand and coarse alluvial gravel close to the Yakima and Naches rivers.

Agricultural lands of long-term commercial significance are generally not present within the developed urban portions of the City of Yakima. Existing agricultural resource lands are primarily located outside the city's urbanized areas in unincorporated Yakima County.

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

Geologically hazardous areas include areas of erosion hazard, landslide hazard, seismic hazard, and other hazards, including volcanic hazards, mining hazards and channel migration zones. There are minimal steep slopes and unstable slopes subject to erosion in the northern border of the city. See Exhibit 3.

Exhibit 3: Geologically Hazardous Areas in Yakima



Source: City of Yakima GIS, 2025; WA Dept. of Ecology, 2025.

e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.

Not applicable. No development is proposed; therefore, no filling or grading would occur as part of this non-project legislative action. Future development projects will be evaluated subject to federal, state, and local regulations and standards.

f. Could erosion occur because of clearing, construction, or use? If so, generally describe.

Not applicable. No development is proposed; therefore, no erosion would occur because of clearing, construction, or use from this non-project legislative action. Future development projects will be evaluated subject to federal, state, and local regulations and standards.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

Not applicable. No development is proposed; therefore, no new impervious surface will be created as a result of this action. The proposal involves a non-project legislative action. Future development projects will be evaluated subject to federal, state, and local regulations and standards.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any.

Not applicable. No development is proposed; therefore, no new impervious surface will be created as a result of this action. The proposal involves a non-project legislative action. Future development projects will be evaluated subject to federal, state, and local regulations and standards. This includes continued application of the City's critical area regulations, stormwater management regulations, and dust control standards. The proposed Land Use Element includes goals and policies to protect geologically hazardous areas, and the new integrated Climate Element includes goals and policies that seek to protect natural resources and ecosystems vulnerable to climate change impacts, such as erosion. In addition, the updated CAO includes revisions to incorporate Best Available Science for protecting and managing critical areas (including geologically hazardous areas to reduce or control erosion).

2. Air

[Find help answering air questions⁴](#)

a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

Not applicable. No development is proposed; therefore, no new impervious surface will be created as a result of this action. The proposal involves a non-project legislative action. Future development projects will be evaluated subject to federal, state, and local regulations and standards.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

Not applicable. No development is proposed; therefore, no new impervious surface will be created as a result of this action.

⁴ <https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-Air>

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

Not applicable. No development is proposed; therefore, no new impervious surface will be created as a result of this action. Promoting growth in the centers and other more urban areas of the city as well as local opportunities for workforce and affordable housing could reduce commuting and reduce air emissions. The proposed Land Use Element includes goals and policies to protect the environment (including air quality), and newly integrated climate goals and policies seek to protect natural resources and ecosystems vulnerable to climate change and to improve air quality.

3. Water

[Find help answering water questions⁵](#)

a. Surface:

[Find help answering surface water questions⁶](#)

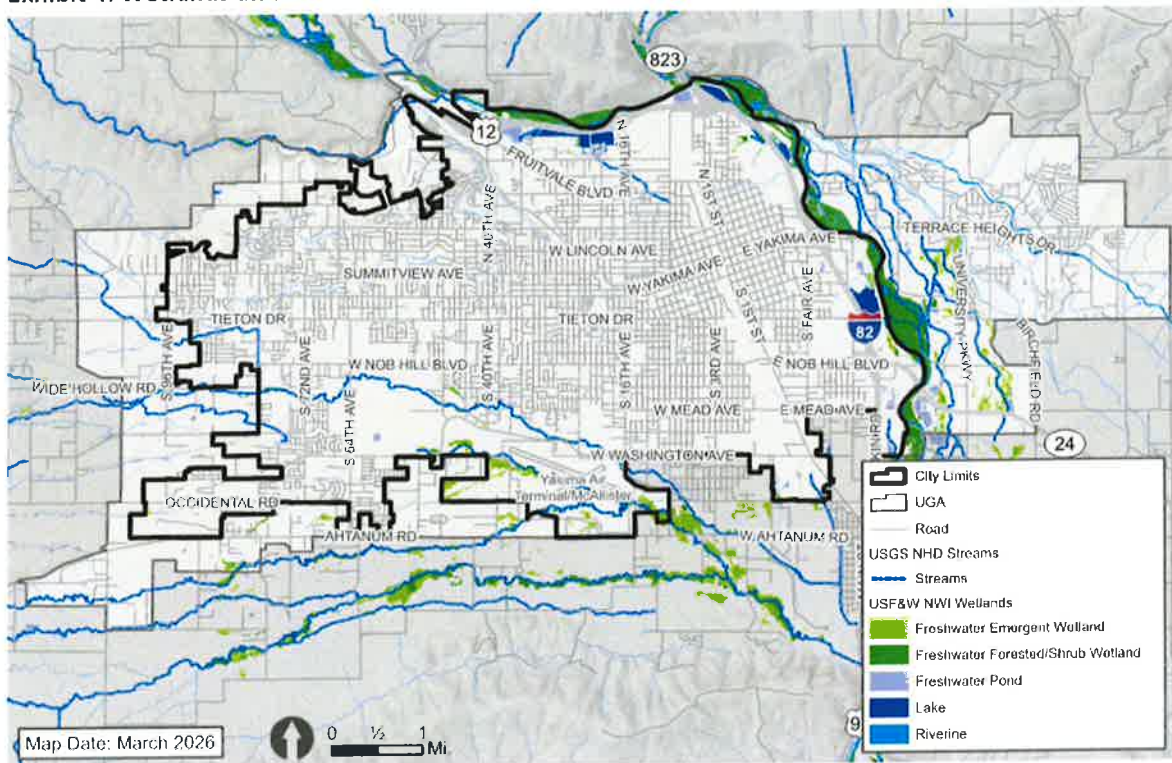
1. Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

Most of the city is within the Lower Yakima Watershed, WRIA 37. A portion to the north part of the city abutting the Naches River is included in the Naches Watershed, WRIA 38. The city includes the Yakima and Naches rivers, as well as Wide Hollow, Bachelor, Spring, and Shaw creeks. Surface water is also present in artificial irrigation canals used to transport irrigation water and wetlands are located in the city. Significant wetlands include those associated with the Yakima and Naches rivers and Wide Hollow Creek. Additional small wetlands are associated with the other streams. See Exhibit 4.

⁵ <https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-3-Water>

⁶ <https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-3-Water/Environmental-elements-Surface-water>

Exhibit 4: Wetlands and Streams in Yakima



Source: City of Yakima GIS 2026, and USGS GIS 2025, and US Fish & Wildlife GIS 2025

2. Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

Not applicable to this non-project legislative action. Future development or activities in the City's shoreline jurisdictions will continue to be subject to the City of Yakima's Shoreline Master Program, and surface waters (including but not limited to rivers, streams, ponds, and wetlands) would continue to be regulated under the proposed CAO updates.

3. Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

Not applicable to this non-project legislative action. Future development projects that require placing or removing fill and dredge material from surface waters or wetlands will be evaluated subject to federal, state, and local regulations and standards, including Yakima's wetland and shoreline regulations designed to avoid impacts to critical areas. The updated CAO also includes updates to incorporate Best Available Science for protecting and managing critical areas to avoid impacts to surface waters and wetlands.

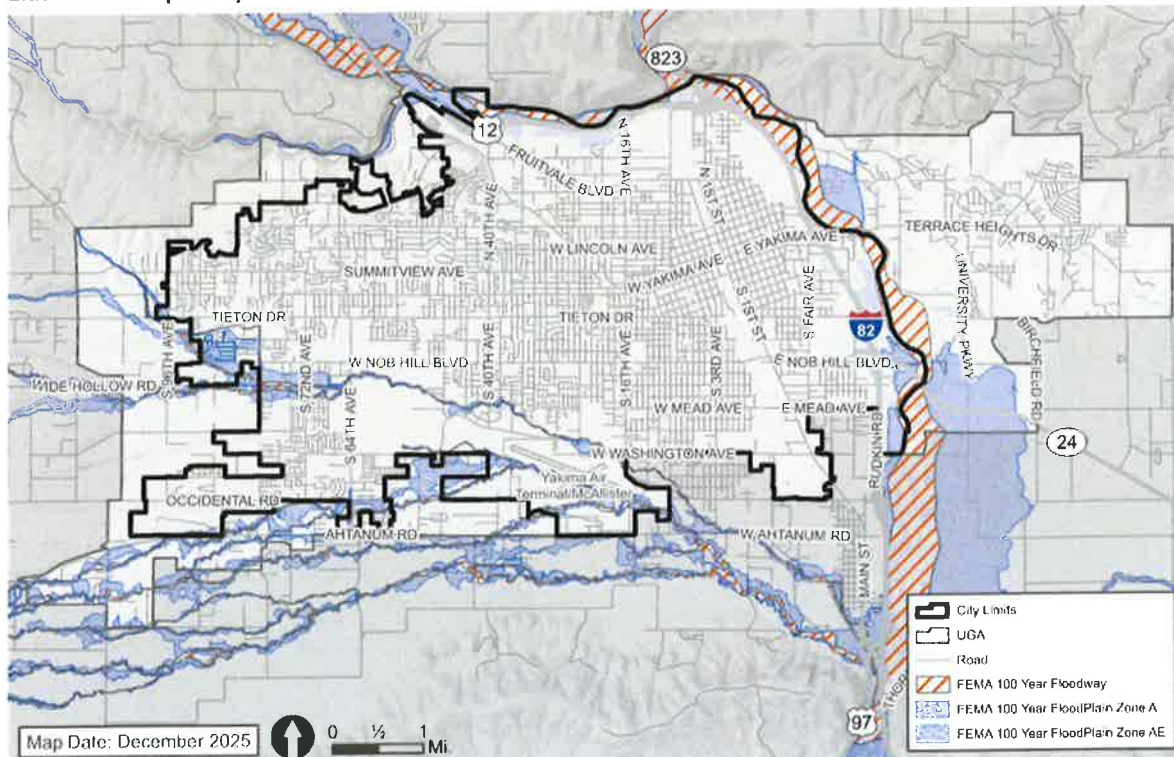
4. Will the proposal require surface water withdrawals or diversions? Give a general description, purpose, and approximate quantities if known.

Not applicable. No development is proposed; therefore, no new surface water withdrawals or diversions would occur as part of this non-project legislative action.

5. Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

FEMA's mapped 100-year floodplain is shown in Exhibit 5. Within the city, the 100-year floodplain is located along Yakima and Naches rivers, as well as Wide Hollow, Bachelor, Spring, and Shaw creeks.

Exhibit 5: Frequently Flooded Areas in Yakima



Source: City of Yakima GIS, 2025; FEMA Floodplain Map, 2023

Two of the proposed amendments are outside floodplains (CPA #001-25 and CPA #004-25). A portion of land in the proposed land use amendment CPA 003-25 falls within the 100-year floodplain.

6. Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

Not applicable. No development is proposed; therefore, no discharge of waste materials to surface water will be required. The proposal involves a non-project legislative action, any

future development projects will be evaluated subject to federal, state, and local regulations and standards.

b. Ground:

[Find help answering ground water questions](#)⁷

1. Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give a general description, purpose, and approximate quantities if known.

Not applicable. No development is proposed; therefore, no groundwater would be withdrawn or discharges made to groundwater as part of this non-project legislative action. Proposed updates to the CAO are intended to protect groundwater while allowing for potable water use for future development.

2. Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (domestic sewage; industrial, containing the following chemicals...; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

Not applicable. No development is proposed; therefore, no groundwater will be withdrawn, or discharges made to groundwater. The proposal involves a non-project legislative action, any future development projects will be evaluated subject to federal, state, and local regulations and standards.

c. Water Runoff (including stormwater):

1. Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

Not applicable. No development is proposed; therefore, no runoff will be created. The proposal involves a non-project legislative action, any future development projects will be evaluated subject to federal, state, and local regulations and standards, especially the City's Stormwater Management Plan.

2. Could waste materials enter ground or surface waters? If so, generally describe.

Not applicable. No development is proposed; therefore, no new waste materials would enter ground or surface waters as part of this non-project legislative action. Proposed updates to the CAO are intended to protect ground and surface waters.

⁷ <https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-3-Water/Environmental-elements-Groundwater>

**3. Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site?
If so, describe.**

Not applicable. No development is proposed; therefore, no drainage patterns in the vicinity of the site would be affected as part of this non-project legislative action.

d. Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any:

Not applicable. No development is proposed; therefore, no measures to reduce or control surface, ground and runoff impacts are required. The proposal involves non-project legislative actions, and any future development projects will be evaluated subject to federal, state, and local regulations and standards. The proposed Land Use Element and new integrated climate goals and policies preserve water quality and quantity while addressing the challenges posed by climate change, such as drought, reduced snowpack, and increased precipitation and flooding. In addition, updated protection standards in the proposed CAO that incorporate the most recent Best Available Science are intended to avoid impacts to wetlands and to maintain existing drainage patterns. An updated stream classification system and updated riparian management zone buffer requirements will also protect surface and ground water.

4. Plants

[Find help answering plants questions](#)

a. Check the types of vegetation found on the site:

- ☒ deciduous tree: alder, maple, aspen, other
- ☒ evergreen tree: fir, cedar, pine, other
- ☒ shrubs
- ☒ grass
- ☐ pasture
- ☒ crop or grain
- ☒ orchards, vineyards, or other permanent crops
- ☒ wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
- ☒ water plants: water lily, eelgrass, milfoil, other
- ☒ other types of vegetation: shrub-steppe habitat

b. What kind and amount of vegetation will be removed or altered?

Not applicable. No development is proposed; therefore, no vegetation will be removed or altered. The proposal involves a non-project legislative action, any future development projects will be evaluated subject to federal, state, and local regulations and standards.

c. List threatened and endangered species known to be on or near the site.

State and federal agencies list threatened and endangered species that have the potential to be present in the City of Yakima. Exhibit 6 summarizes threatened and endangered Vascular plants

and mosses in Yakima County as identified by the Washington State Department of Natural Resources (DNR). According to DNR, Yakima is in the East Cascade ecoregion. The [U.S. Fish and Wildlife Service \(USFWS\) Information for Planning and Consultation \(IPaC\)](#) online database does not list any plant species in Yakima as threatened or endangered.

Exhibit 6: Threatened and Endangered Plants in Yakima County

Species	Federal	State	Listing Agency
Gray's broomrape		Endangered	DNR
Cascades rockcress		Endangered	DNR
Obscure paintbrush	Sensitive	Endangered	DNR
Washington monkeyflower		Endangered	DNR
Klickitat aster		Threatened	DNR
Diffuse stickseed		Threatened	DNR
Kellogg's rush		Endangered	DNR
Rosy owl's clover	Sensitive	Threatened	DNR
Mt. Rainer lousewort	Sensitive	Threatened	DNR
Obscure pin lichen		Endangered	DNR
Nylander's rocktripe lichen		Endangered	DNR

Source: DNR [2024 Washington Vascular Species and Lichen Species of Conservation Concern Lists](#), 2024.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any.

Not applicable. No development is proposed; therefore, no changes are proposed to landscape or vegetation. The proposal involves a non-project legislative action, any future development projects will be evaluated subject to federal, state, and local regulations and standards.

e. List all noxious weeds and invasive species known to be on or near the site.

Yakima County Noxious Weed Control Board identifies a long list of noxious weeds in the county categorized as follows:

- All Class "A" Weeds
- Class "B" Weeds, (all designated & those listed)
- Class "C" Weeds, (listed)

The list is available from the [Yakima County Noxious Weed Control Board](#).

5. Animals

[Find help answering animal questions](#)⁸

a. List any birds and other animals that have been observed on or near the site or are known to be on or near the site.

Examples include:

☒ birds: hawk, heron, eagle, songbirds, other:

☒ mammals: deer, bear, elk, beaver, other:

☒ fish: bass, salmon, trout, herring, shellfish, other:

b. List any threatened and endangered species known to be on or near the site.

A variety of federal and state listed birds, mammals, and aquatic species are known to be or have habitat in the City of Yakima. The list in Exhibit 7 is based on the unofficial species list obtained from the [U.S. Fish and Wildlife Service \(USFWS\) Information for Planning and Consultation \(IPaC\)](#) online database, the [National Oceanographic and Atmospheric Administration – Fisheries \(NOAA\)](#) website, and WDFW's [Priority Habitat and Species Statewide List and Distribution by County](#).

Exhibit 7: USFWS Threatened and Endangered Animal Species in Yakima Region

Species	Federal	State	Critical or Priority Habitat	Listing Agency
Yellow-billed Cuckoo	Threatened	Endangered	Designated (proposed)—not present in Yakima	USFWS
Bull Trout	Threatened	Candidate	Critical habitat designated	USFWS
Rainbow Trout/ Steelhead/ Inland Redband Trout	Threatened	Candidate	—	NOAA Fisheries, WDFW
Monarch Butterfly	Proposed Threatened	Candidate	Not present in Yakima	USFWS
Suckley's cuckoo bumble bee	Proposed Endangered	—	No critical habitat has been designated for this species	USFWS
Northern Spotted Owl	Threatened	Endangered	—	WDFW
Wolverine	Threatened	Candidate	—	WDFW
Gray Wolf	Endangered (only in western two-thirds of Washington)	Endangered		WDFW

⁸ <https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-5-Animals>

c. Is the site part of a migration route? If so, explain.

Yakima is part of a major north-south bird migration route known as the Pacific Flyway. The Pacific Flyway is a migratory route that millions of birds use to travel to their nesting grounds. The Pacific Flyway extends from Mexico to Canada and Alaska.

d. Proposed measures to preserve or enhance wildlife, if any.

Not applicable as this is a non-project action. Individual development projects will conduct wildlife surveys as necessary during the environmental review process to determine the presence of federal or state listed species or habitat. The proposed Land Use Element and new climate goals and policies seek to protect ecosystems, including those vulnerable to climate change. The CAO will also continue to regulate fish and wildlife conservation areas, wetlands, and all other critical areas, with proposed updates to incorporate the most recent Best Available Science for protecting and managing critical areas.

e. List any invasive animal species known to be on or near the site.

According to the [Washington Invasive Species Council](#), the following priority invasive animal species are known to occur in the Yakima region:

- Bullfrog: found throughout the lowlands of Washington.
- Nutria: first introduced into Washington for the fur-farming industry in the 1930s, populations are spreading rapidly throughout western Washington and are beginning to appear in central Washington.

Aquatic invasive species in Washington are listed at <https://wdfw.wa.gov/species-habitats/invasive> and regulated by the WDFW. None of the other aquatic invasive species of greatest concern (the European green crab, northern pike, or zebra and quagga mussels) are known to occur in Yakima.

6. Energy and natural resources

[Find help answering energy and natural resource questions](#)⁹

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Not applicable. No development is proposed; therefore, no energy will be used. The proposal involves a non-project legislative action, any future development projects will be evaluated subject to federal, state, and local regulations and standards.

⁹ <https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-6-Energy-natural-resou>

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

Not applicable. No development is proposed; therefore, no energy will be used. The proposal involves a non-project legislative action, any future development projects will be evaluated subject to federal, state, and local regulations and standards.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any.

Not applicable. No development is proposed; therefore, no energy conservation features are required. The proposal involves non-project legislative actions, and any future development projects will be evaluated subject to building and energy codes and local regulations and standards. The new integrated climate goals and policies also seek to protect natural resources, increase energy reliability and resilience, and improve building energy efficiency.

7. Environmental health

[Health Find help with answering environmental health questions](#)¹⁰

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur because of this proposal? If so, describe.

Not applicable. No development is proposed; therefore, no environmental health hazards will result as part of this non-project legislative action.

1. Describe any known or possible contamination at the site from present or past uses.

Various cleanup sites in Yakima with low, moderate, and high risks are identified in Exhibit 8 with cleanup status.

Exhibit 8: Yakima Contaminated Sites

Site Name	Address	Status
201 W YAKIMA AVE	201 W YAKIMA AVE	Cleanup Started
Agri-Tech Yakima Steel Fabricators	6 & 10 1/2 E WASHINGTON	Cleanup Started
Barge Lincoln Elementary School	219 E I ST	CC-Perf. Monitoring
Bay Chemical	8 E WASHINGTON AVE	CC-Perf. Monitoring
Bissell Distributing	311 W I ST	Cleanup Started
Bush Property	5412 MORNINGSIDE DR	Cleanup Started
Cameron Yakima Inc	1414 S 1ST ST	CC-Perf. Monitoring
CMX Corp	206 W MEAD AVE	CC-O&M/Monitoring

¹⁰ <https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-7-Environmental-health>

Site Name	Address	Status
Consolidated Freightways	1105 S 3RD ST	Cleanup Started
Frank Wear Cleaners	106 S 3RD AVE	Cleanup Started
Haas Fruit Whse	711 RUSSELL LN	Cleanup Started
Hoover Elementary School	400 W VIOLA	CC-O&M/Monitoring
Interstate 82 Exit 33A Yakima City Landfill	INTERSTATE 82	Cleanup Started
Kelly Oil	1309 N 1ST ST	Awaiting Cleanup
NU WAY Cleaners Yakima	801 S 3RD ST	CC-O&M/Monitoring
Tiger Oil 24th Ave & W Nob Hill	2312 W NOB HILL BLVD	Cleanup Started
Tiger Oil N 1st St Fmr 6013	1808 N 1ST ST	Cleanup Started
UNOCAL 76	920 N 6TH AVE	Cleanup Started
Valley Junk	403 KEYS RD	Cleanup Started
Whitney Elementary School	4411 W NOB HILL BLVD	Awaiting Cleanup
Wilson Middle School	902 S 44TH AVE	Awaiting Cleanup
Yakima Gull 1614	214 S 5TH AVE	Awaiting Cleanup
Yakima Old City Landfill	S 18TH ST & YAKIMA R MILE 112	Cleanup Started
Yakima Valley Spray	1108-1122 S 1ST ST	Cleanup Started
Zwight Logging	222 Keys Rd	Awaiting Cleanup

Source: WA Dept of Ecology [Contaminated Site List](#), 2026.

2. Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.

According to the [Department of Transportation Pipeline and Hazardous Materials Safety Administration jurisdiction GIS site](#), one hazardous gas transmission lines runs on the east side of the City of Yakima city limits within the City's UGA in the Terrace Heights area. There are no hazardous liquid transmission lines in the city.

The proposal involves a non-project legislative action, any future development projects will be evaluated subject to federal, state, and local regulations and standards.

3. Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

Not applicable. No development is proposed; therefore, no toxic or hazardous chemicals will be stored, used, or produced. The proposal involves a non-project legislative action, any future development projects will be evaluated subject to federal, state, and local regulations and standards.

4. Describe special emergency services that might be required.

Not applicable. No development is proposed; therefore, no toxic or hazardous chemicals will be stored, used, or produced. The proposal involves a non-project legislative action, any future development projects will be evaluated subject to federal, state, and local regulations and standards.

5. Proposed measures to reduce or control environmental health hazards, if any.

Not applicable. No development is proposed; therefore, no measures to reduce or control environmental health hazards are required. The proposal involves non-project legislative actions, and any future development projects will be evaluated subject to federal, state, and local regulations and standards. The new integrated climate goals and policies also seek to prepare the City of Yakima and its residents for hazards exacerbated by climate change, including increased flooding and precipitation, wildfires and wildfire smoke, extreme heat, and more. Washington state's Model Toxics Control Act (MTCA) and federal Toxic Substance Control Act would apply to future developments for cleanup and prevention of contamination by hazardous substances.

b. Noise

1. What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

Several types of noise exist throughout Yakima, including noise from traffic on I-82, SR 12, existing commercial use, and air traffic. No development is proposed with this proposal; therefore, no additional noise would be created. The proposal involves a non-project legislative action, any future development projects will be evaluated subject to federal, state, and local regulations and standards.

2. What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site)?

Although this proposal is for a non-project action, it is anticipated that the City's growth and development in surrounding areas will inevitably result in heightened traffic, consequently elevating noise levels along main transportation routes, affecting nearby properties. Potential future developments within the city may further exacerbate background traffic noise, introduce operational noise, or overall increased ambient noise levels. While short-term noise stemming from the construction of individual projects is expected, these effects will be temporary and transient. The city will assess noise impacts arising from individual development and construction as part of the environmental review process for each specific project.

3. Proposed measures to reduce or control noise impacts, if any:

Future site-specific development would be subject to state noise regulations. The City's development regulations also reduce the potential for conflicts such as noise between various

incompatible use types. No additional measures to reduce or control noise impacts are required as the proposal involves non-project legislative actions and no development is proposed.

8. Land and shoreline use

[Find help answering land and shoreline use questions](#)¹¹

a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.

The City of Yakima's current land use is a mix of residential, commercial, industrial, public, and business uses. Commercial uses are concentrated in downtown Yakima and along I-82 and other major arterial corridors. Downtown Yakima is located along Yakima Avenue. The railroad runs parallel to 1st Ave and abuts industrial uses along the north-south stretch of the city. Residential uses are mostly located west of the downtown area.

The proposal will generally maintain Yakima's land use pattern and is not expected to have any major impacts on current land uses. Density of uses is expected to increase over time with infill and redevelopment and changes to development regulations. There is capacity under existing and proposed zoning to accommodate planned growth and the City is not proposing any changes to its Urban Growth Area (UGA) boundary. The City has consolidated and separated some future land use designations, but this will not affect zoning or site specific uses. See Exhibit 9.

Exhibit 9: Existing Land Use within the City Limits and Unincorporated UGA

Existing Land Use	Incorporated City (acres)	Share (%)	City + Unincorporated UGA (acres)	Share (%)
Single-family Residential	5,547	38%	9,787	38.5%
Multi-family Residential	1,009	7%	1,144	4.5%
Professional Offices or Services	1,133	8%	1,487	5.9%
Retail Commercial	1,370	9%	1,760	6.9%
Industrial	1,675	11%	2,024	8.0%
Government, Education, Utility, etc.	766	5%	1,071	4.2%
Parks, Recreation, Cultural	263	2%	265	1.0%
Agricultural	1,298	9%	3,570	14.1%
Vacant	1,629	11%	4,298	16.9%
Total	14,692		25,408	

Note: Acreages listed here are derived from parcel-level data and do not include right-of-way space. Total existing land use acreage shown here is slightly lower than the total land area of Yakima and its UGA.

Source: City of Yakima, 2025; Yakima County Assessor's Office, 2025; BERK, 2025.

¹¹ <https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-8-Land-shoreline-use>

Three site specific land use amendments are proposed based on existing uses on the sites and surrounding land uses. See Exhibit 10. A change from residential to commercial is generally expected to increase land use intensity and related service requirements. However, two of the locations already have commercial land use next to them, and one is located at the intersection of arterial roads and underdeveloped areas (W Tieton Drive and S 96th Ave). Cumulatively, these are not expected to have major impacts on current land uses.

Exhibit 10: Existing Land Use and Acres of Land Use Amendments

CPA #s	Existing Land Use	Acres
001-25	Single Unit Residential	0.31
003-25	Undeveloped Land	2.03
004-25	Single Unit Residential	0.483
	Mobile Home Park	0.657

Source: City of Yakima, 2025; Yakima County Assessor's Office, 2025; BERK, 2025.

b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses because of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?

There are no long-term commercially significant farmlands or forest lands within the city. There are a few "hobby farms" within the city (currently zoned SR - Suburban Residential). No agricultural or forest land of long-term commercial significance will be converted as part of this non-project legislative action.

Yakima County designates mineral resource lands within the county. There are limited sites in the city with long-term commercial significance for mining.

1. Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how?

See the response in 8b. No development is proposed as part of this non-project legislative action. Future development will continue to be regulated by the Yakima Municipal Code.

c. Describe any structures on the site.

See the response in 8a for the development pattern in the city. Structures in the city are consistent with its land use pattern.

d. Will any structures be demolished? If so, what?

Not applicable. This non-project legislative action does not include demolition of any structures. Current uses could convert to other uses allowed under the zoning code as development occurs consistent with the Comprehensive Plan and implementing regulations. Any future

development projects will be evaluated subject to federal, state, and local regulations and standards.

e. What is the current zoning classification of the site?

The City's current zoning designations include:

- Residential zones in SR, R-1, R-2, and R-3
- Business zones in B-1, B-2 and HB
- Convenience center type commercial zones in SCC and LCC
- General commercial zone in GC
- Central business district zone in CBD
- Regional development in RD
- Industrial zones in M-1, M-2
- Airport zone in AS zones

The zoning map is also available [online](#).

Exhibit 11 shows zoning of the sites proposed for land use change.

Exhibit 11: Existing Zones of Land Use Amendments

CPA #s	Existing Zone
001-25	R2
003-25	R1
004-25	R3

f. What is the current comprehensive plan designation of the site?

The existing future land use map (FLUM) is available online as part of the 2024 Comprehensive Plan and in the [City's open GIS portal](#).

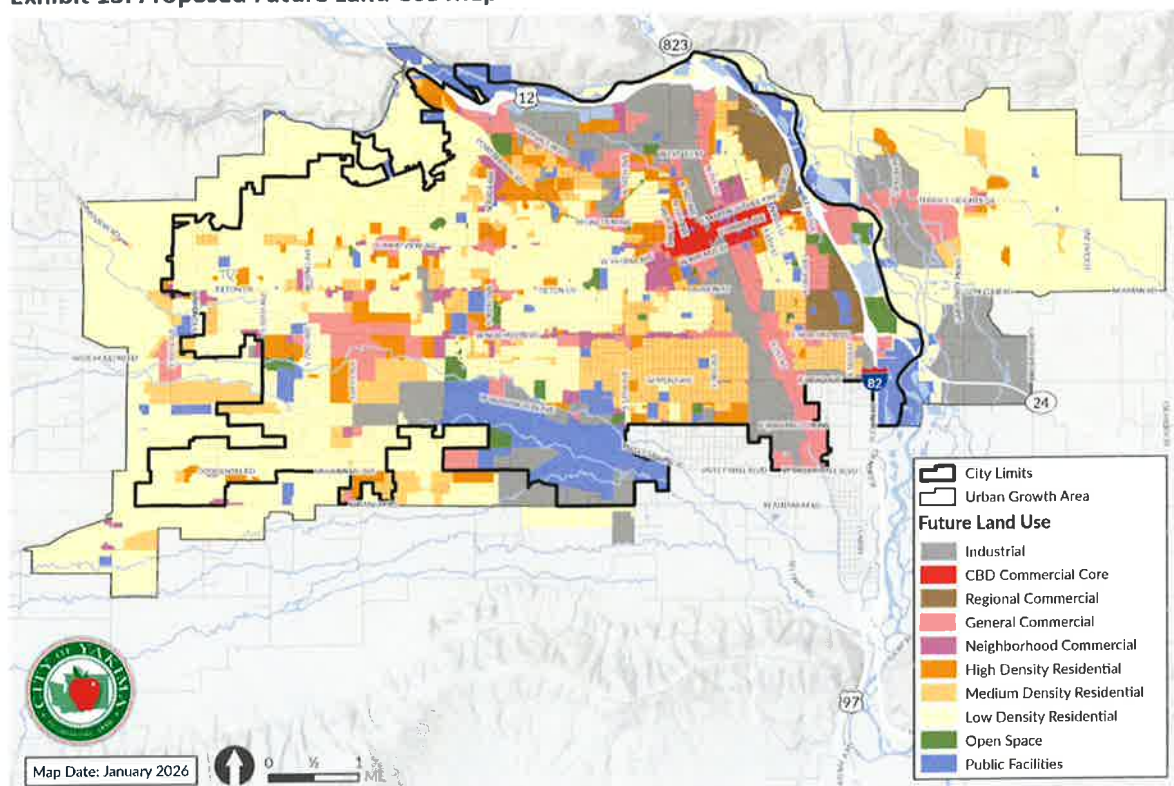
The City is proposing an updated FLUM map as part of the Comprehensive Plan Periodic Update. This includes simplifying and introducing new land use designations and closely matching densities and uses. Exhibit 12 lists the existing and proposed future land use designations. Proposed designations include new designations for open space and public facilities. The proposed Future Land Use map is shown in Exhibit 13. Exhibit 14 summarizes the proposed land use designation implemented by various zones. Open space and public facilities land use designations are intended to be implemented by all zoning districts except for the AS zone. Exhibit 15 details proposed amendments for the sites with a proposed land use change (CPA #001-25, CPA #003-25, and CPA #004-25).

Exhibit 12: Future Land Use Map Existing and Proposed

Existing FLUM Designations	Proposed FLUM Designation
▪ Low Density Residential ▪ Mixed Residential	▪ Low Density Residential ▪ Medium Density Residential

▪ Community Mixed-Use ▪ Commercial Mixed-Use ▪ CBD Commercial Code ▪ Regional Commercial ▪ Industrial	▪ High Density Residential ▪ Neighborhood Commercial ▪ General Commercial ▪ CBD Commercial Code ▪ Regional Commercial ▪ Industrial ▪ Open Space ▪ Public Facilities
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Exhibit 13: Proposed Future Land Use Map



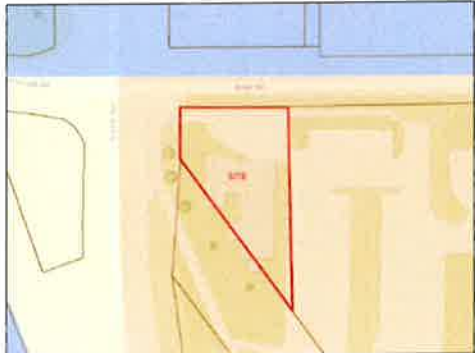
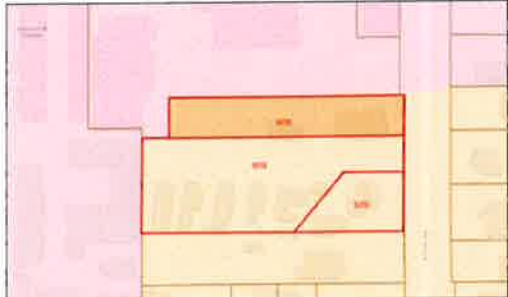
Source: City of Yakima, 2025; BERK, 2025.

Exhibit 14: Future Land Use and Implementing Zoning Districts

Zoning	Low Density Residential	Medium Density Residential	High Density Residential	Neighborhood Commercial	General Commercial	CBD Commercial Core	Regional Commercial	Industrial	Open Space	Public Facilities
SR	X								X	
R-1	X								X	X
R-2		X							X	X
R-3			X						X	X
B-1				X					X	X
B-2				X					X	X
HB				X					X	X
SCC					X				X	X
LCC					X				X	X
GC					X				X	X
CBD						X			X	X
RD							X		X	X
M-1								X	X	X
M-2								X	X	X
AS								X		

Source: Yakima Municipal Code, 2025; BERK, 2025.

Exhibit 15: Existing and Proposed Land Use Amendments

Existing Comprehensive Plan Land Use	Proposed Amendments
CPA 001-25 Mixed Residential Project Name: DANNY L BIRD Site Address: 3908 RIVER RD File Number(s): CPA#001-25 FUTURE LAND USE MAP  Yakima Future Land Use Designations - Low Density Residential - Mixed Residential - Central Business Core Commercial - Commercial Mixed Use - Regional Commercial - Community Mixed Use - Industrial	General Commercial  
CPA 003-25 Low Density Residential Project Name: ROBERTO ARTEAGA Site Address: 9503, 9509, 9515 TIETON DR File Number(s): CPA#003-25 FUTURE LAND USE MAP  Yakima Future Land Use Designations - Low Density Residential - Mixed Residential - Central Business Core Commercial - Commercial Mixed Use - Regional Commercial - Community Mixed Use - Industrial	Neighborhood Commercial  
CPA 004-25 Low Density Residential and Mixed Residential Project Name: MENARDS HOLDINGS LLC Site Address: 810, 812, 814 N 28TH AVE File Number(s): CPA#004-25 FUTURE LAND USE MAP  Yakima Future Land Use Designations - Low Density Residential - Mixed Residential - Central Business Core Commercial - Commercial Mixed Use - Regional Commercial - Community Mixed Use - Industrial	General Commercial  

g. If applicable, what is the current shoreline master program designation of the site?

The City's Shoreline Master Program is available on the [City's open GIS portal](#). The shoreline regulations are available in the municipal code in [YMC Title 17](#).

Yakima's shoreline includes the following shoreline environment designations:

- Floodway/CMZ
- Urban Conservancy
- High Intensity
- Essential Public Facilities
- Shoreline Residential
- Aquatic

h. Has any part of the site been classified as a critical area by the city or county? If so, specify.

Critical areas in the City of Yakima are regulated through Yakima's CAO pursuant RCW 36.70A.170. This includes geologically hazardous areas, critical aquifer recharge areas, frequently flooded areas, wildlife habitat conservation areas, and wetlands.

i. Approximately how many people would reside or work in the completed project?

During the countywide allocation process, the City of Yakima had a growth target of total of 107,443 people in the city limits and an additional 16,816 in the UGA by 2046. The City's population in 2025 was 100,000 according to OFM. This would require a total of 10,648 housing units with the city limits and the UGA. The employment target for the city was 4,222 new jobs between 2026 to 246.

j. Approximately how many people would the completed project displace?

The intent of the Comprehensive Plan update is to address how to accommodate Yakima's projected growth by 2046. The plan includes future land use designations to accommodate both existing and future residential and commercial uses. No displacement is expected as a direct result of this non-project legislative proposal.

k. Proposed measures to avoid or reduce displacement impacts, if any.

Not applicable. The intent of the comprehensive plan update is to address how to accommodate Yakima's projected growth by 2046. The plan includes future land use designations to accommodate both existing and future residential and commercial uses. Specific policy language is also proposed to reduce residential and commercial displacement risk.

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any.

The City's Comprehensive Plan is designed to be consistent with land use guidance in the GMA and the Yakima County CPPs. The proposed 2026 Comprehensive Plan includes updated future

land use designation definitions and policy language to support land use compatibility (see the Land Use Element).

m. Proposed measures to reduce or control impacts to agricultural and forest lands of long-term commercial significance, if any:

See response to B.8.b. There are no agricultural or forest lands of long-term commercial significance in the city, or major mineral resources in the city.

9. Housing

[Find help answering housing questions](#)¹²

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

No housing units will be constructed as part of this non-project legislative action. However, the GMA requires that Yakima County and the cities within allocate a fair share of housing over a 20-year period through the Yakima County CPPs. The City of Yakima's housing growth targets overall and by income band are summarized in Exhibit 16 as set in the regional allocation process. The greatest need for new units is at the lower end of the affordability spectrum (30% to 50% AMI). In this income band, 2,450 units are needed. A total of 3,661 units are also needed for households earning 30% AMI or less, including 1,750 units of permanent supportive housing that include wrap-around services for people who need support to maintain residency. Emergency housing targets (617 beds) are in addition to permanent supportive housing.

Exhibit 16: City of Yakima and UGA Combined Allocation of Projected Housing Needs, 2020-2046

Total Units Allocated	0-30% Non-PSH	0-30% PSH	30-50% AMI	50-80% AMI	80-100% AMI	100-120% AMI	120%+ AMI	Emergency Housing/ Shelter Beds
10,648	1,750	1,911	2,450	1,286	760	514	1,977	617

Legend: PSH = Permanent Supportive Housing; AMI = Area Median Income.

Source: WA Department of Commerce, 2025; Yakima County 2025; BERK, 2025.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

The intent of the comprehensive plan update is to address how to accommodate Yakima's projected growth by 2046. The plan includes future land use designations to accommodate both existing and future residential and commercial uses. No displacement is expected as a direct result of this legislative proposal.

Proposed land use amendments in CPAs 001-, 003-, and 004-25 will reduce low density housing. Low density housing are generally considered affordable to higher income households. The

¹² <https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-9-Housing>

proposed changes can increase capacity for higher density housing since proposed commercial land uses also allow high density homes. As mentioned in B.8.c, Yakima already has sufficient housing capacity across all income group needs.

c. Proposed measures to reduce or control housing impacts, if any:

The City's Comprehensive Plan is designed to be consistent with land use guidance in the GMA and the Yakima County Countywide Planning Policies. The land capacity analysis shows the City alone has capacity for over 21,000 net new housing units. Moreover, it shows there is sufficient capacity by assumed income level served to accommodate Yakima's projected housing needs by income level. Yakima has a surplus of:

- 4,560 units capacity for low density housing (>120% AMI)
- 5,220 units in moderate density housing (>80-120% AMI)
- 546 units in ADUS (>50-80% AMI)
- 752 units in low-rise multifamily (0-50% AMI)

Proposed development regulations updates will further remove some barriers to housing developments. This includes reduced lot sizes, higher residential density than currently allowed, reduces setback, and unit lot subdivisions.

The proposed 2026 Comprehensive Plan includes updated future land use designation and policy language to support land use compatibility. Housing goals and related policies also encourage affordable housing, such as:

- Goal 3.1: Encourage diverse and affordable housing choices.
- Goal 3.3: Ensure an adequate supply of housing for all income groups and persons with special needs.
- Goal 3.6: Prevent discrimination and displacement in the development and maintenance of housing.

10.Aesthetics

[Find help answering aesthetics questions](#)¹³

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

The proposal does not change the City's development regulations for height limits. The City's regulations for height limits are found in Yakima Municipal Code Title 15 Zoning. The proposal involves a non-project legislative action, any future development projects will be evaluated subject to regulations and standards in place at the time.

¹³ <https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-10-Aesthetics>

b. What views in the immediate vicinity would be altered or obstructed?

Not applicable. The proposal involves a non-project legislative action, any future development projects will be evaluated subject to federal, state, and local regulations and standards.

c. Proposed measures to reduce or control aesthetic impacts, if any:

Not applicable. No development is proposed; therefore, no measures are required to reduce or control aesthetics. The proposal involves a non-project legislative action, any future development projects will be evaluated subject to federal, state, and local regulations and standards.

11.Light and glare

[Find help answering light and glare questions](#)¹⁴

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

Not applicable. No development is proposed; therefore, no light would be produced as part of this non-project legislative action.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

Not applicable. No development is proposed; therefore, no light would be produced as part of this non-project legislative action.

c. What existing off-site sources of light or glare may affect your proposal?

Not applicable. No development is proposed; therefore, no light would be produced as part of this non-project legislative action.

d. Proposed measures to reduce or control light and glare impacts, if any:

Not applicable. No development is proposed; therefore, no measures to reduce or control light and glare impacts are required. The proposal involves non-project legislative actions, and any future development projects will be evaluated subject to federal, state, and local regulations and standards.

12.Recreation

[Find help answering recreation questions](#)

a. What designated and informal recreational opportunities are in the immediate vicinity?

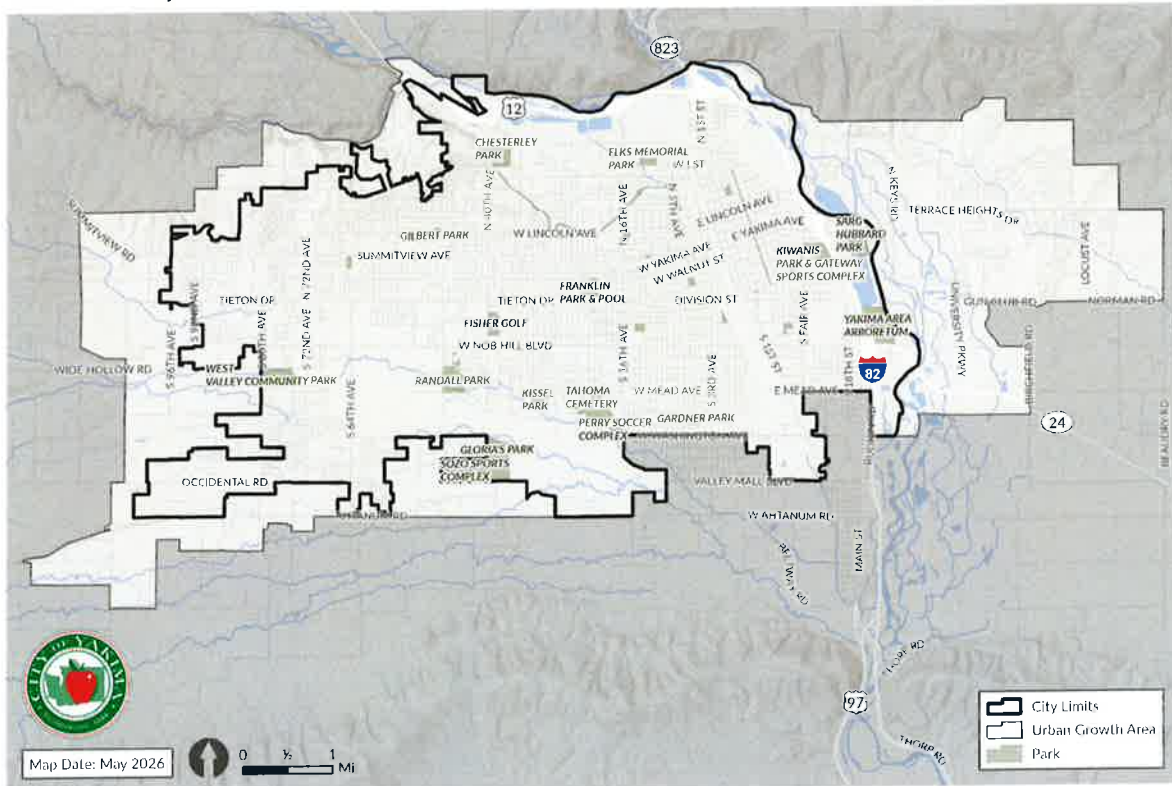
There are approximately 756 acres of parks and open space in the city limits and UGA. This includes City, State, and non-profits owned and operated parks. Yakima Parks and Recreation

¹⁴ <https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-11-Light-glare>

Division owns and manages approximately 332 acres of parks and recreation facilities. See Exhibit 17.

The City of Yakima Parks & Recreation Division offers a variety of passive and active recreational activities for adults, youth, and seniors through sports programs, the senior center, summer day camps and other special events. Passive recreational activities in Yakima include walking, nature watching, fishing etc. Active recreational activities are provided in various facilities such as sports fields, biking trails etc.

Exhibit 17: City of Yakima Parks



Source: City of Yakima, 2026; BERK, 2026.

b. Would the proposed project displace any existing recreational uses? If so, describe.

Not applicable. No development is proposed; therefore, no existing recreational uses would be affected as part of this non-project legislative action.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

Not applicable. No development is proposed; therefore, no measures to reduce or control impacts on recreation are required. Future development projects will be evaluated subject to federal, state, and local regulations and standards. The proposed Land Use and Parks and Recreation elements include goals and policies to ensure a healthy and equitable recreational and open space environment for all users in the city. Although the City's facilities fall below the

acreage standards for Community Parks and Neighborhood Parks/Mini Parks/Parkways as set in the 2022-2027 Yakima Parks and Recreation Comprehensive Master Plan, there are adequate publicly accessible facilities owned and operated by other agencies. The combined inventory of facilities meets the recreational and open space needs of residents.

The new integrated Climate Element also includes discussion on tree canopies, including goals and policies within the Parks and Recreation Element for preservation of open space and tree canopies in the parks.

The City's 2022-2027 Parks Comprehensive Master Plan and future updates will continue to guide acquisition, development, and improvement of park areas and facilities and the provision of recreational service throughout the city. In addition, to offer varied recreational opportunities while providing additional parkland per capita, the City encourages that all new developments address the issue of providing open space. This can be accomplished with parkland dedication, designation of lands for open space, or the availability of open space areas in commercial areas.

13. Historic and cultural preservation

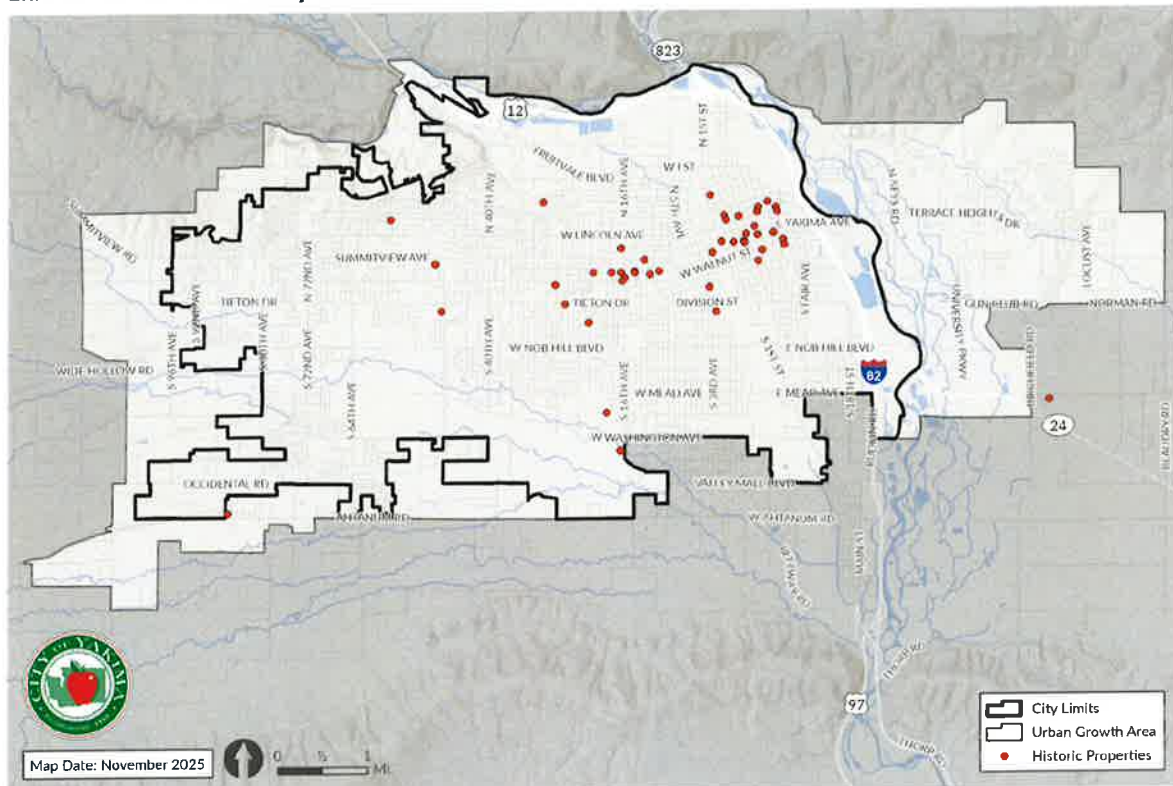
[Find help answering historic and cultural preservation questions](#)¹⁵

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers? If so, specifically describe.

Yakima's downtown and surrounding neighborhoods include dozens of properties listed on the National Register of Historic Places (NRHP). The city is also home to the Yakima Valley Museum, one of the premier history museums in the state. Exhibit 18 maps historic properties inventoried by the Department of Archeology and Historic Preservation (DAHP).

¹⁵ <https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-13-Historic-cultural-p>

Exhibit 18: DAHP Officially Inventoried Historic Properties



Source: DAHP, 2026; City of Yakima, 2026; BERK, 2026.

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

The City of Yakima is located within the ancestral territory of the Yakama Nation (made up of the Kah-milt-pah, Klickitat, Klinquit, Kow-was-say-ee, Li-ay-was, Oche-chotes, Palouse, Pisuquose, Se-ap-cat, Shyiks, Skinpah, Wenatshapam, Wishram, and Yakama tribes).¹⁶ The Yakamas and other regional tribes have a long history of making seasonal camps, fishing, gathering, and hunting in the area. Tribal land was ceded in 1855 as part of the Yakama Treaty of Camp Stevens, opening the area to non-Native settlement.¹⁷ Known cultural resources are documented in the Washington Department of Archeology and Historic Preservation's online [WISAARD map](#)

¹⁶ [Native Land Digital](#) (accessed August 2026); [Yakama Nation History](#) (accessed August 2026).

¹⁷ [Tribal Lands of Washington Web Map](#) sourced from Ecology's [Tribal Lands GIS Layer](#) (accessed August 2026).

c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

No impact on cultural or historic resources are anticipated as part of this non-project legislative action. The City maintains consistent communication with the Yakama Nation regarding cultural and archeological resources, and the Yakama Nation shares published resources. The City also follows required development notification protocols and discovery procedures, particularly for SEPA notifications or shoreline development permits.

d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.

Not applicable. No development is proposed; therefore, no measures to avoid, minimize, or compensate for loss, changes to, and disturbance to cultural and historic resources are required. Historic Preservation goals and related policies aim to minimize impacts to cultural and historic resources, such as:

- Goal 4.2: Integrate historic preservation and tribal coordination into Yakima's planning and development strategies.
- Goal 4.3: Identify, register, and protect historic buildings, places, landscape, and trees.
- Goal 4.4: Encourage building and cultural resource rehabilitation in downtown Yakima.

YMC Chapter 11.62 provides for the identification, designation, evaluation, and protection of historic resources. The following state laws also provide protection of archaeological resources:

- Chapter 27.44 RCW provides for the protection of Native American graves and burial grounds, encourages voluntary reporting of said sites when discovered, and mandates a penalty for disturbance or desecration of such sites.
- Chapter 27.53 RCW governs the protection and preservation of archaeological sites and resources and establishes the Department of Archaeology and Historic Preservation (DAHP) as the administering agency for these regulations.
- Section 36.70A.020 RCW includes a goal to identify and encourage "the preservation of lands, sites, and structures that have historical, cultural, and archaeological significance." This goal must be considered and incorporated into comprehensive plans and the implementing development regulations.
- Chapter 68.60 RCW provides for the protection and preservation of abandoned and historic cemeteries and graves.

14. Transportation

[Find help with answering transportation questions](https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-14-Transportation)¹⁸

a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.

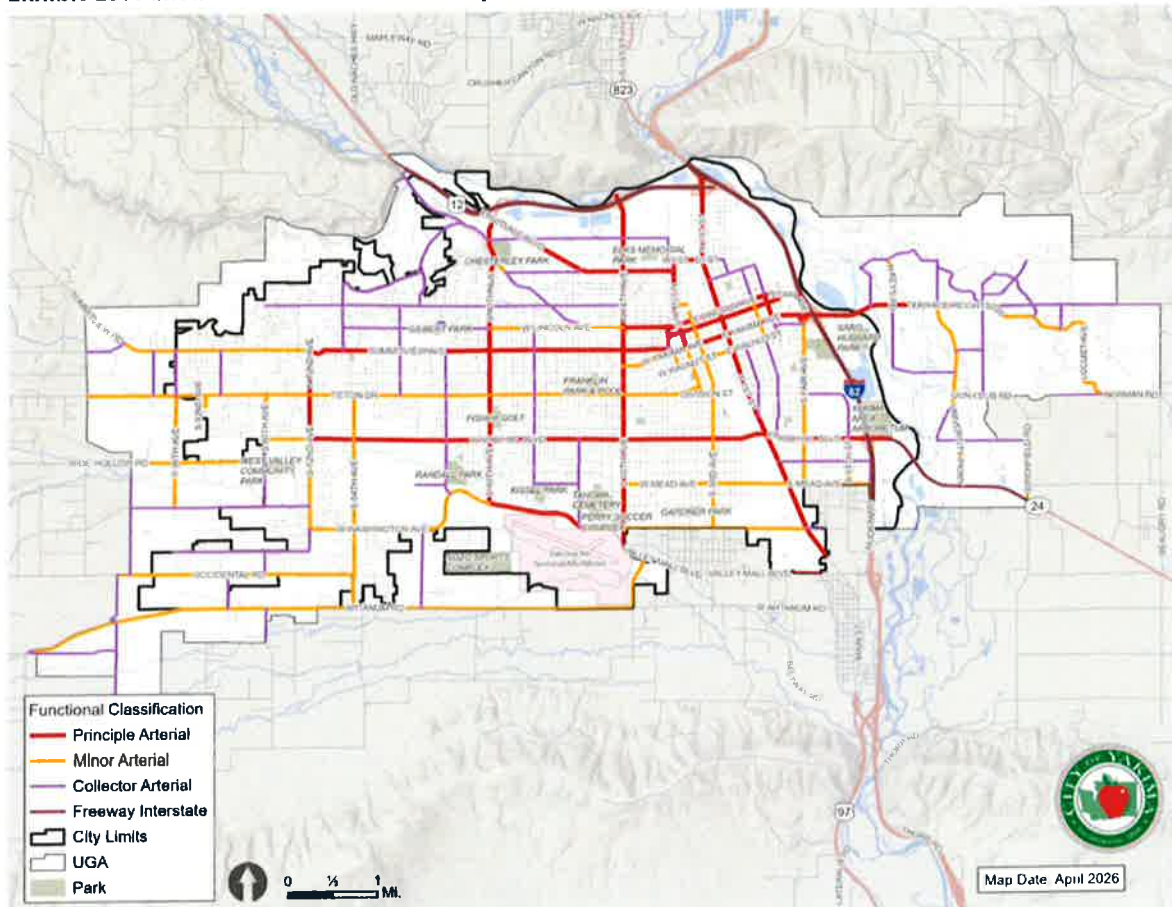
Yakima is primarily served by the City's existing public streets system and by major state highways. See Exhibit 19. Streets are divided into four functional classifications, including Principal Arterials, Minor Arterials, Collectors, and Local Access. Major north-south thoroughfares on the city owned street network include 1st St, 16th Ave, 40th Ave, and 72nd Ave. Major east-west streets include Fruitvale Boulevard, Lincoln Ave, and Martin Luther King Jr Boulevard in downtown Yakima, E Yakima Ave and Summit View Ave, Nob Hill Boulevard, and Valley Mall Boulevard. In addition, two roadways owned and operated by WSDOT and identified as highways of statewide significance provide for regional and interregional travel in the city:

- US-12 from the North Western city limits to the junction with I-82
- I-82 from the junction with US-12 to the southern city limits

The three planned CPAs for upzoning will not have any significant impacts on the existing street system or change local access.

¹⁸ <https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-14-Transportation>

Exhibit 19: Functional Classification of City Streets



Source: City of Yakima, 2026; Transpo, 2026.

b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?

Yakima Transit serves the city of Yakima with fixed route and paratransit services. Yakima Transit also provides the Yakima-Ellensburg Commuter service during morning and evening commute periods. As of 2026, Yakima Transit operated Fixed-route bus service along ten different routes that operate between the hours of 6:00am and 7:00pm within the City of Yakima. Weekday routes are operated with one-hour and half-hour headways on most routes, while Saturday and Sunday routes are operated on an hourly basis.

Paratransit service (Dial-a-Ride) is provided by Yakima Transit for patrons who cannot use fixed-route bus services due to a disability and in accordance with ADA. This service provides curb-to-curb paratransit service during the same operating days and hours of local fixed route service. Paratransit services are provided, door-to-door, to eligible clients and serves the areas within the city limits of Yakima and Selah and some trips into the City of Union Gap.

Yakima has one major transit center in its downtown area. The Yakima Transit Center is located along 4th Street between Chestnut Avenue and Walnut Avenue. All Yakima Transit Routes are

routed through the Yakima Transit Center. The transit center can accommodate up to 12 buses at a time.

The three planned CPAs for upzoning will not have significant impacts on the planned public transit and each are located within close proximity to existing fixed route transit service.

c. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle, or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).

No new road, street, pedestrian, bicycle, or state transportation facilities or improvements are proposed or required as part of this non-project legislative action (CPA upzones). The proposed Transportation Element and City's separately maintained six-year Transportation Improvement Program (TIP) include planned improvements to roads and non-motorized infrastructure. The TIP, which is updated annually, is available from the Public Works Department. The proposed Transportation Element identifies long-term updates to the Transportation Systems Plan. Proposed improvements include intersection projects, new roadways, and off-street bicycle routes. Improvement projects are focused on bringing the primary connections into compliance with the City's level of service standards for each travel mode. Any future public or private transportation improvements will be evaluated at the time of a specific proposal and through the City's applicable review process.

d. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

No new construction or use of air, rail, or water transportation facilities is proposed as part of this non project legislative action. Yakima is near a major air transportation hub, and existing rail lines run through the city. Future development in the immediate vicinity of these facilities will be evaluated subject to federal, state, and local regulations and standards.

- Yakima Air Terminal / McAllister Field is owned by the city of Yakima and is located to the south of downtown Yakima and east of I-82.
- Rail lines in the City of Yakima are exclusively used for freight transportation and do not include passenger service. The double-tracked line through the city's central business district is a Strategic Rail Corridor (WSDOT, 2013) owned by BNSF and one of three statewide east-west rail lines. Additional spur lines within the city and its UGA carry less train traffic, but many remain important connections for the rail community.
- The city borders the Yakima River on its east side; however, the river is not a meaningful freight transportation corridor

The three planned CPAs for upzoning are not planned in the immediate vicinity of water, rail or air transportation.

e. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?

Planned CPA zoning changes will have no immediate impact on trips generated. As CPAs are developed, the increased density may result in an increase in trips generated. No development is proposed; therefore, no specific number of vehicle trips per day would result because of this non-project legislative action. However, future transportation system needs were analyzed as part of the Comprehensive Plan Periodic Update considering the updated land use designations and projected growth. YVCOG's regional travel demand model supported the transportation planning efforts for this update.

The 2050 Baseline transportation system includes committed transportation system projects – those currently under construction or fully funded. As a conservative assessment of vehicle forecast conditions, the Baseline model did not assume significant changes to the City of Yakima network. The YVCOG model included an additional lane of capacity along I-82 through the urban areas of the county. In addition, the YVCOG model included a new east-west road corridor connecting northeast Yakima to eastern county areas across I-82 and the Yakima River.

The 2050 Baseline model includes roadway capacities that provide an estimated volume-to-capacity (v/c) ratio that is used to identify general areas where weekday PM peak hour volumes approach or exceed the capacity of the roadway. A roadway with a v/c ratio of 1.0 is assumed to be at capacity. As vehicle volumes approach peak roadway capacity, travel times and vehicle delays typically increase. While this does not necessarily mean the roadways would need widening, it does mean that these sections of roadway may need to be monitored closely. No roadway v/c issues were identified within the study area.

See the Transportation Element and supporting appendix for an evaluation of future transportation conditions and needs based on the updated land use designations and projected growth. Any future development projects that could generate measurable traffic impacts will be evaluated when a specific proposal arises, using project-specific information (such as project-level trip generation, peak hour volumes, or truck percentages) and, as applicable, standard transportation analysis methods.

f. Will the proposal interfere with, affect, or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

Not applicable. CPA zoning changes will not impact the movement of agricultural and forest products. As no development is proposed; no specific freight movements, including the movement of agricultural and forest products on roads or streets in the area, would affect this non-project legislative action. Any future development projects that could affect or be affected by freight movement will be evaluated subject to federal, state, and local regulations and standards.

g. Proposed measures to reduce or control transportation impacts, if any:

Not applicable to this non-project legislative action. No development is proposed; therefore, no measures to reduce or control transportation impacts are required. Any future development projects will be evaluated subject to federal, state, and local regulations and standards.

The technical information and policies in the proposed Transportation Element provide guidance for maintaining and improving the City's transportation system to accommodate projected growth and mitigate any transportation impacts over the next 20 years. The element includes LOS standards and goals and policies intended to limit negative environmental impacts and encourage multimodal transportation choices.

An LOS evaluation for the average weekday PM peak hour was also performed for major intersections within the city to identify future vehicle LOS deficiencies. Deficiencies were determined based on the City's vehicle LOS standards. During 2050 Baseline conditions, five intersections would not meet the adopted LOS standard. Projects to address these forecast deficiencies are outlined in the technical analysis appendix to the Comprehensive Plan.

The Transportation Element also includes a recommended long-term list of transportation improvement projects and programs based on an evaluation of existing and forecast traffic volumes, traffic operations, safety, and circulation needs. The long-term project list is organized into the following categories: intersection/spot, major/new roadway, active transportation, other agency improvements, and citywide programs. Guidance includes proposed new roadways and intersection projects to improve traffic flow in areas where travel demand is set to increase, as well as new multimodal connections and support for transit levels of service to provide options and reduce demand for travel by cars and trucks alone within the city and the surrounding communities. Concurrency applies to City owned arterials and collector roads—if any proposed development were to cause the LOS to fall below adopted levels, the proposed development is required to reduce the impact of the development by reducing the size of the development or by constructing appropriate mitigation to restore LOS to acceptable levels.

15. Public services

[Find help answering public service questions¹⁹](#)

a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.

Future growth under the proposed 2026 Comprehensive Plan would increase demand for public services as described in Volume II of the Comprehensive Plan. This includes increased demand emergency services (fire, emergency medical, and police), public transit, health care, and schools.

¹⁹ <https://ecology.wa.gov/regulations-permits/sepa/environmental-review/sepa-guidance/sepa-checklist-guidance/sepa-checklist-section-b-environmental-elements/environmental-elements-15-public-services>

b. Proposed measures to reduce or control direct impacts on public services, if any.

The Capital Facilities and Transportation elements provide a framework for planning for and meeting public service needs over the 20-year planning period. This framework includes adopted level of service standards and capital improvement plans of City and non-City service providers. Implementation of this framework would mitigate impacts to public services associated with future growth.

The proposal involves non-project legislative actions. Future development projects will be evaluated subject to federal, state, and local regulations and standards.

16. Utilities

[Find help answering utilities questions²⁰](#)

a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other: irrigation water

Electricity: Pacific Power provides electricity in the City of Yakima.

Natural Gas: Cascade Natural Gas serves the Yakima region.

Water: Water services in Yakima are provided by the City of Yakima Water/Irrigation Division and Nob Hill Water Association. The Terrace Heights UGA area is served by Yakima County. The City's water system shares boundaries with four other water purveyors in the area, with the non-profit Nob Hill Water Association, as the only other water purveyor located within the city limits. The City's water system generally serves central and eastern Yakima. Water service is extended on request, and new development pays for the extension of infrastructure.

Irrigation water: The City of Yakima operates an irrigation utility that provides irrigation water to users in certain areas within the city. In addition to the City's irrigation utility, some irrigation users within the City of Yakima are served by private irrigation systems or directly from canals.

Wastewater: The Yakima Regional Wastewater Treatment Plant (YRWWTP) processes wastewater from homes and businesses in Yakima, Union Gap, Terrace Heights, and Moxee. There are pockets of land in the city that are not served by sewers due to the land being vacant, challenging physical conditions, or past development allowed on septic systems.

Stormwater: Yakima's stormwater collection area includes the City of Yakima and some of the West Valley area outside of city limits. In accordance with the NPDES Western Washington Phase II Municipal Stormwater Permit, the City requires development to provide on-site stormwater management to mitigate these impacts. The City possesses one stormwater source well, referred to as Naches River WTP, in which water is treated by chlorination, filtration, fluoridation, and other methods.

Solid Waste: All refuse within the city is collected by the Refuse Division of the department of public works, a licensed collector, or taken to the sanitary landfill for disposal. Yakima Waste System offers biweekly curbside recycling for a fee. Annually, around 37,647 tons are collected,

²⁰ <https://ecology.wa.gov/regulations-permits/sepa/environmental-review/sepa-guidance/sepa-checklist-guidance/sepa-checklist-section-b-environmental-elements/environmental-elements-16-utilities>

with around 90% of the tonnage categorized as garbage and around 10% categorized as recycled yard waste.

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

The proposal involves non-project legislative actions. Future development projects will be evaluated subject to federal, state, and local regulations and standards. Yakima's utility service needs and plans are also described in the Capital Facilities Element in Volume II Appendices.

C. Signature

[Find help about who should sign](#)²¹

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

9/24/2026

X Trevor Martin

Signed by: Martin, Trevor

Type name of signee: Trevor Martin, AICP

Position and agency/organization: Planning Manager, City of Yakima

Date submitted: September 24, 2026

D. Supplemental sheet for nonproject actions

[Find help for the nonproject actions worksheet](#)²²

Do not use this section for project actions.

Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment.

When answering these questions, be aware of the extent the proposal, or the types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.

²¹ <https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-C-Signature>

²² <https://ecology.wa.gov/regulations-permits/sepa/environmental-review/sepa-guidance/sepa-checklist-guidance/sepa-checklist-section-d-non-project-actions>

1. How would the proposal be likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise?

See also parts of B.2, B.3, and B.7.

As a non-project legislative action, the proposal would not directly impact water, air, hazardous substances, or noise. Future development consistent with the Comprehensive Plan and implementing zoning code could result in the following impacts:

- Fill and grade proposals, new impervious surfaces, or vegetation removal could result in altered surface water flows, increased stormwater flow, localized flooding impacts, and generation of non-point source pollution to local surface waters.
- Increased vehicle trips could increase air emissions or result in additional noise. As projects identified in the Transportation Element are implemented, an increase in stormwater may be generated due to the increases in impervious surfaces from future roadway widening. Short-term, minor increases in noise and exhaust emissions may occur. The impacts may occur with each individually proposed project at the time of project construction.
- Project construction activities may temporarily produce toxic or hazardous substances, generate noise from the use of standard construction equipment, or result in additional exhaust and fugitive dust (on site or along hauling routes or nearby local streets).
- Some commercial or industrial uses may handle hazardous materials, though the International Fire Code and state and federal laws would continue to apply.

Proposed measures to avoid or reduce such increases are:

The Comprehensive Plan Periodic Update provides a policy framework intended to protect water and air quality, minimize excessive noise, and prevent pollution such as the release of toxic substances. See specific goals and policies in the Land Use Element. In addition, the adopted Shoreline Master Plan (SMP) and updated Critical Areas Ordinance (CAO) will continue to regulate shorelines and critical areas in the city (including critical aquifer recharge areas, frequently flooded areas, geologically hazardous areas, fish and wildlife conservation areas, and wetlands). The new integrated climate goals and policies also seek to improve air quality, protect natural resources and ecosystems vulnerable to climate change, preserve water quality and quantity while addressing the challenges posed by climate change, and prepare the city and its residents for hazards exacerbated by climate change.

2. How would the proposal be likely to affect plants, animals, fish, or marine life?

See also parts B.4 and B.5.

Future development allowed by the Comprehensive Plan and development regulations could affect plants and animals in Yakima through land clearing for construction of housing and infrastructure, stormwater runoff, and human disturbance associated with future growth. Environmental resources subject to risk of direct and indirect impacts include numerous species of plants and animals (including federal and state designated threatened or endangered species and their habitat). As projects identified in the Transportation Element are implemented, there may be impacts to roadside vegetation due to widening of existing roadways. Impacts will be analyzed for each individually proposed project at the time of project construction.

Proposed measures to protect or conserve plants, animals, fish, or marine life are:

The Land Use and Natural Environment elements and the new integrated climate goals and policies support key environmental features in Yakima (including wildlife habitats) and seek to protect ecosystems, including those vulnerable to climate change. Together with local, state, and federal environmental regulations—such as YMC Chapters 15.27 (Critical Areas), storm (YMC Chapters 7.80, 7.82, 7.83 and 7.85 which incorporates the Stormwater Management Manual of Eastern Washington), and SMP (YMC title 17)—these goals and policies would continue to protect plants and wildlife in Yakima as development occurs. The updated CAO also includes minor revisions to incorporate Best Available Science for protecting and managing critical areas. Impacts to plants and wildlife from specific development projects would be further evaluated during individual environmental review.

3. How would the proposal be likely to deplete energy or natural resources?

See also Part B.6.

As a non-project action, the proposal would not directly deplete energy or natural resources. Individual projects will typically require oil and electricity during the construction phase to operate equipment and periodically thereafter for routine maintenance and repair activities. Demands for energy and natural resources (such as heating, light, and electricity for residential units or commercial uses) will increase along with population growth and associated development irrespective of the proposed updates.

Proposed measures to protect or conserve energy and natural resources are:

The proposed update to the Comprehensive Plan supports the natural resource protection principles articulated in the GMA. In particular, goals and policies in the Land Use, Capital Facilities, Utilities, Transportation, and Energy elements emphasize conservation of resources, and efficiency in energy use. These elements and the new integrated climate goals and policies seek to protect and conserve natural resources, increase energy reliability and resilience, and improve building energy efficiency. Other measures in place or proposed as part of the periodic update to avoid or reduce such increases are:

- Concentration of development under these Comprehensive Plan policies will enable existing infrastructure to be more intensely and efficiently utilized.
- Public transportation and non-motorized modes of movement are promoted by plan policies, which may result in a reduction in the use of oil energy used by automobiles.
- Application of existing building and energy codes.

4. How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection, such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?

See also Part D.2 regarding plants and animals and parts B.1, B.2, B.3, B.4, B.5, B.6, B.7, B.8, B.12, and B.13.

No direct impacts to environmentally sensitive areas or areas designated (or eligible or under study) for government protection are expected as a result of this non-project action. Population and employment growth would likely increase demand for parks and place additional pressure on environmentally sensitive areas irrespective of the proposed updates. Future development projects may dredge or fill surface waters or wetlands or affect other environmentally sensitive areas or areas designated for government protection. Known cultural resources and historic structures are documented in the Washington Department of Archeology and Historic Preservation's online [WISAARD map](#) and the Yakama Nation shares published resources. Any impacts will be determined with each individually proposed project at the time of project design.

Proposed measures to protect such resources or to avoid or reduce impacts are:

The Land Use and Natural Environment elements and the new integrated climate goals and policies seek to conserve the city's natural resources. These goals and policies work together with local, state, and federal environmental regulations, such as the City's SMP and CAO. The existing and proposed CAO update includes regulations intended to protect city resources, with provisions for no net loss of area and functions, which provides a balance between protecting city resources and allowing development and uses to be approved. The Capital Facilities Element also includes goals and policies to help ensure a diversified recreational and open space system in the City of Yakima.

The Plan elements aim to avoid and minimize losses and changes to historic and cultural resources and include goals and policies to support and protect historic resources. Historic and cultural sites would remain protected by federal, state, and local regulations and policies (including YMC Chapter 11.62 which provides for the identification, designation, evaluation, and protection of historic resources). Historic or cultural sites will be evaluated during the environmental review of individual projects and, if necessary, mitigation measures to avoid or minimize potential impacts will be developed. Any alterations to existing historic or cultural sites would also require evaluation and mitigation during individual development process.

Any roadway projects identified in the Transportation Element will be designed to avoid and reduce impacts wherever possible. Additional measures will be evaluated and proposed during the design phase of each individual project.

5. How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?

See also parts B.8, B.9, B.10, and B.12.

The City of Yakima currently contains numerous zoning and future land use designations. Citywide, the predominant land use districts are Low Density Residential (LDR) with moderate and higher intensity uses designated in downtown and along the major arterials. Commercial uses are concentrated in downtown, along I-82 and other major arterial corridors. The railroad runs parallel to 1st Ave and abuts industrial uses along the north-south stretch of the city. The Public Facility and Open Space land use designations are applied to City owned and non-City owned public facilities, parks, and open space needed to provide the full range of services to the public.

Based on the community's vision, land characteristics, and provisions of the GMA, the City is proposing an updated FLUM map as part of the Comprehensive Plan Periodic Update. This includes simplifying and introducing new land use designations and closely matching densities and uses. Exhibit 12 lists the existing and proposed future land use designations. The proposed Future Land Use map is shown in Exhibit 13.

Proposed measures to avoid or reduce shoreline and land use impacts are:

The Comprehensive Plan Update is designed to be consistent with the GMA, the Yakima County CPPs, and new state planning requirements. The Land Use Element includes goals and policies intended to ensure new development is compatible with existing land uses and an analysis of future land use needs and projected growth demands to guide future land development (see also Volume II).

Existing and proposed regulations ensure future development is compatible with existing and projected land uses and plans via zoning standards (e.g., appropriate locations for various land uses as well as height, bulk, setback, and landscaping requirements). Individual development projects will be subject to local, state, and federal regulations and must be consistent with the City's Comprehensive Plan (including the Land Use Element goals and policies), the adopted SMP (YMC Title 17) which protects Shorelines of the State, and the GMA. In addition, the adopted SMP and proposed CAO update will continue to regulate shorelines and critical areas in the city, including critical aquifer recharge areas, frequently flooded areas, geologically hazardous areas, fish and wildlife habitat conservation areas, and wetlands. The updated CAO will be incorporated into the SMP by reference (as an appendix) and will continue to support no net loss requirements for development within shoreline jurisdiction. No other changes are proposed to the SMP.

6. How would the proposal be likely to increase demands on transportation or public services and utilities?

See also parts B.14, B.15, and B.16.

As a non-project action, the proposal will not directly increase demand on transportation, public services, or utilities. However, the Comprehensive Plan Update would guide the type, location, and intensity of development within the city and demand for transportation, public services, and utilities is likely to increase as new development and growth occur.

Proposed measures to reduce or respond to such demand(s) are:

The proposed Capital Facilities, Transportation, Parks, Recreation, and Open Space, and Utilities elements provide a framework for planning for and meeting demands on transportation, public services, and utilities over the planning period:

- The Capital Facilities Element details adopted level of service standards and calls for providing adequate capital facilities and public services necessary to support existing development and new growth. Goal 7.1 prioritizes investment in facilities to meet service standards, Goal 7.3 calls for providing facilities in planned and equitable ways, Goal 7.4 aims to protect human and environmental health. The Utilities Element recognizes the

need for collaboration with providers in order to plan for and ensure continued provision of quality services. Other system plans (e.g. Water, Stormwater, etc.) are integrated into the Capital Facilities and Utilities Elements.

- The Transportation Element provides a framework for planning for and meeting transportation demand for the next 20 years. Key policy concepts include supporting multimodal transportation options, meeting level of service standards, and ensuring that adequate funding for transportation systems are in place. Implementation of individual projects included within the Transportation Element will reduce and respond to such demands. In addition to meeting demand for transportation, the Transportation Element also provides guidance for reducing impacts to the environment related to transportation activities, ensuring a safe transportation system, providing options for active transportation such as walking and biking, and maintaining a dynamic relationship between land use and transportation systems in order to support desired land use patterns.
- The level of service standards for parks and open space were developed under the 2022-2027 Parks Comprehensive Master Plan and are incorporated into the Comprehensive Plan. The Parks and Recreation Element includes goals and policies to ensure a healthy and diversified recreational and open space environment in Yakima.
- Goals and policies under these elements support the provision of quality utility services that are reliable, efficient, and financially and environmentally sustainable.
- Implementation of these facilities will comply with regulations during developments under zoning code in Title 15, building and construction code in Title 11, Streets and Sidewalk in Title 8, Public Service and Utilities in Title 7, and Parks and Playgounrds in Title 13.

7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.

In general, the Comprehensive Plan Periodic Update and associated code revisions, and the CAO update seek to protect the environment and would not conflict with any local, state, or federal laws for the protection of the environment. The Comprehensive Plan Update and development regulations have been prepared in accordance with the provisions of the GMA and Yakima County Countywide Planning Policies to ensure coordinated planning. The development regulations and CAO update were prepared concurrent with the Comprehensive Plan Periodic Update to ensure consistency between the documents.





Confederated Tribes and Bands
of the Yakama Nation

Established by the
Treaty of June 9, 1855

December 3, 2025

Sent via electronic mail

Trevor Martin AICP
City of Yakima Community Development Department
Planning Division
129 N. 2nd Street
Yakima, WA 98901

Re: SEPA Application #014-25 - Yakima Valley Trolleys Operation Agreement

Dear Mr. Martin:

The Yakama Nation Cultural Resources Program has reviewed the referenced State Environmental Policy Act (SEPA) checklist for Application #014-25. We find this application fundamentally deficient and unable to support informed environmental and cultural resources review. The application's widespread use of "N/A" responses without explanation, contradictory project descriptions, and absence of basic geographic, environmental, and cultural information render it incomplete under SEPA requirements and inconsistent with the associated responsibilities.

Contradictory Project Description

The application contains conflicting statements about the project scope that prevent meaningful review:

- Question 11 (Brief Description) states this application is *"only analyzing the Yakama Valley Trolleys responsibility for operating and maintaining the existing Trolley System"* and that *"there is no specific project action associated with this SEPA proposal."*
- Question 6 (Timing/Schedule) indicates a 5-year operational period from January 1, 2026 through December 31, 2030.
- Question 8 references a *"Safety Plan (per WAC 468-550-040(4))"* and *"Inventory of assets (Exhibit C)"* that are not included with the application.
- Question 7 acknowledges *"routine operations and maintenance"* of trolley facilities but provides no detail about what these activities entail.

These statements indicate ongoing operational activities with environmental implications, not a purely administrative agreement transfer without a project action. Even non-project

SEPA reviews under WAC 197-11-442 require analysis of a program's cumulative environmental effects. The application cannot simultaneously claim *"no specific project action"* while describing multi-year operational activities requiring safety plans, asset inventories, and routine maintenance.

Systematic Misuse of 'N/A' Without Justification

The applicant has marked numerous environmental checklist questions as "N/A" without providing any explanation for why they do not apply to trolley operations and maintenance. SEPA instructions explicitly state that "N/A" should only be used *"when you can explain why it does not apply and not when the answer is unknown."*

The following sections demonstrate either lack of due diligence or deliberate avoidance of required environmental analysis:

Surface Water (Questions 1-5, Pages 4-5)

All surface water questions are marked N/A despite the trolley route crossing multiple waterways and drainage features in the Yakima Valley. Maintenance activities, vegetation management along the right-of-way, and stormwater runoff from rail infrastructure all have potential surface water impacts. Question 2 specifically asks about work *"within 200 feet"* of waters, yet receives an N/A response with the note *"operations and maintenance only, project specific actions will require additional SEPA review."* This circular logic suggests the applicant acknowledges potential impacts but declines to analyze them in this review.

Ground Water (Questions 1-2, Page 6)

Groundwater questions are marked N/A without explaining why infrastructure maintenance, potential chemical use (herbicides for vegetation management), or waste material disposal would not affect groundwater. Historic rail corridors commonly have legacy contamination issues that should be addressed.

Plants and Animals (Questions 3-5, Pages 6-7)

Question 3 (threatened/endangered species) is marked N/A without documentation of Endangered Species Act consultation or biological survey. Question 4 (landscaping/vegetation preservation) is marked N/A despite obvious vegetation management needs along a linear transportation corridor. Question 5 (noxious weeds) is marked N/A without any invasive species assessment or vegetation management plan.

Environmental Health (Questions 2-5, Page 8)

Questions 2 through 5, addressing site contamination, hazardous chemicals, toxic materials, and emergency services, are all marked N/A without acknowledging that historic rail corridors commonly contain contaminated soils from legacy pollutants. No Phase I Environmental Site Assessment or contamination screening appears to have been conducted.

Land and Shoreline Use (Questions 2, 13-14, Pages 8-10)

Question 2 asks about conversion of agricultural or forest lands and receives an N/A response without analyzing whether the trolley route traverses these land use

categories. Questions 13-14 regarding compatibility with existing land uses and nearby agricultural/forest operations are marked N/A without assessment of potential conflicts.

Complete Avoidance of Supplemental Nonproject Section

Section D (Supplemental Section for Nonproject Actions Only) represents deficiency in this application. WAC 197-11-960 and SEPA guidelines specifically require nonproject proposals to address questions about:

- How the proposal would increase discharges to water, emissions to air, or noise production
- Effects on plants, animals, fish, or marine life
- Depletion of energy or natural resources
- Use or effects on environmentally sensitive areas
- Effects on land and shoreline use
- Increased demands on transportation or public services
- Potential conflicts with environmental laws or requirements

The applicant marked ALL SEVEN questions (Questions 1-7, Pages 13-15) as "N/A" without any explanation. This defeats the purpose of completing the supplemental section and fails to satisfy SEPA's requirement for informed decision-making.

Insufficient Location and Geographic Information

Question 12 (Location of Proposal) identifies "306 W Pine Street/404 S. 3rd Ave, Yakima, WA; trolley lines within Yakima and Selah" but provides no:

- Linear footage or mileage of track to be maintained
- Total acreage of right-of-way affected by operations
- Map or geographic coordinates showing the route
- Identification of watercourse crossings
- Proximity analysis to archaeological sites or culturally sensitive areas
- Slope conditions and mass wasting potential along the corridor

The application notes that legal description is "*provided in Exhibit B of the agreement*" but this exhibit is not included. Without basic geographic data defining the project area, it is impossible to assess potential impacts to any environmental or cultural resource. The trolley route is a significant linear feature traversing landscapes occupied by Yakama ancestors for

thousands of years. We cannot complete meaningful review without knowing where maintenance activities will occur further this SEPA is not a functional.

Inadequate Cultural Resources Analysis

The Historic and Cultural Preservation section (Page 11) presents several concerning deficiencies:

- Question 1 acknowledges the trolley system is listed on national and local registers of historic places, demonstrating the corridor's significance. However, this historic designation applies to the rail infrastructure itself and does not address archaeological resources along the route or traditional cultural properties that may be affected by operations and maintenance activities.
- Question 2 asks about "landmarks, features, or other evidence of Indian or historic use or occupation" and receives the response "None known along trolley route." This statement is inconsistent with the known archaeological sensitivity of the Yakima Valley and the thousands of years of continuous Yakama occupation in this region. The response "none known" suggests no professional cultural resources survey or tribal consultation has been conducted. The Yakima Valley contains numerous recorded archaeological sites, traditional use areas, and culturally significant landscapes.
- Question 3 asks for proposed measures to "avoid, minimize, or compensate for loss, changes to, and disturbance to resources" and receives the response "Continued operations of the Yakima Trolleys for educational and cultural purposes." This response does not address archaeological site protection, inadvertent discovery protocols, or cultural resource management measures that could be helpful.

The linear nature of the trolley corridor presents unique cultural resource concerns. Archaeological sites adjacent to or within the rail right-of-way are susceptible to slope movement and mass wasting, which can have significant upslope and downslope impacts. Vegetation management, track maintenance, drainage work, and visitor access ground-disturbing activities with potential to affect buried archaeological deposits.

Once the scope of the project is defined the applicant could then demonstrate some understanding in order to inform the checklist and the necessary inventory and permitting requirements.

Missing Required Documentation

The checklist references but does not include several pieces of information necessary to understanding project scope and environmental implications:

- Inventory of assets (Exhibit C, referenced in Question 8)
- Yakima Valley Trolleys Operation Agreement
- Legal description (Exhibit B of the agreement, referenced in Question 12)

These documents are essential for reviewers to understand what activities are authorized, where they will occur, what infrastructure exists, and what safety and operational protocols govern the proposal.

Conclusion and Path Forward

This SEPA checklist does not provide sufficient information to complete environmental and cultural resources review pursuant to the State Environmental Policy Act (RCW 43.21C). The wholesale use of "N/A" without explanation, contradictions between claiming "*no project action*" while describing 5-year operational activities, and absence of basic geographic and archaeological data render this application incomplete.

The Yakama Nation is not opposed to trolley operations that preserve this significant historic transportation resource and provide educational and cultural benefits to the community. However, we cannot complete our review or provide informed comment without understanding what this proposal actually entails.

We respectfully request the City of Yakima withdraw this incomplete application and resubmit with the following information:

**Clarification of Project Scope
Completion of Section D
Geographic and Location Data
Cultural Resources Assessment
Operational Details and Measures to Avoid or Mitigate
Attachment of Referenced Documents**

Provide these documents in complete form via email to the Yakama Nation Tribal Council Chairman, Gerald Lewis via Gerald_Lewis@yakama.com as well as Cultural Resource Program Manager, Casey Barney @ Casey_Barney@Yakama.com.

The Yakama Nation looks forward to meaningful consultation on this project once adequate information is provided. We are committed to working cooperatively with the City of Yakima to ensure trolley operations can proceed in a manner that protects cultural resources, preserves this important historic asset, and honors our shared stewardship responsibilities for the Yakima Valley landscape.

Please contact our office if you have questions about these comments or need clarification on information requirements. Thank you for the opportunity to comment on this project.

Respectfully,



Noah Oliver
YNCRP Geographer and Archaeologist
Yakama Nation Cultural Resource Division

Yakima County Planning Portal

GIS Planning Yakima County

Find address or place

Legend

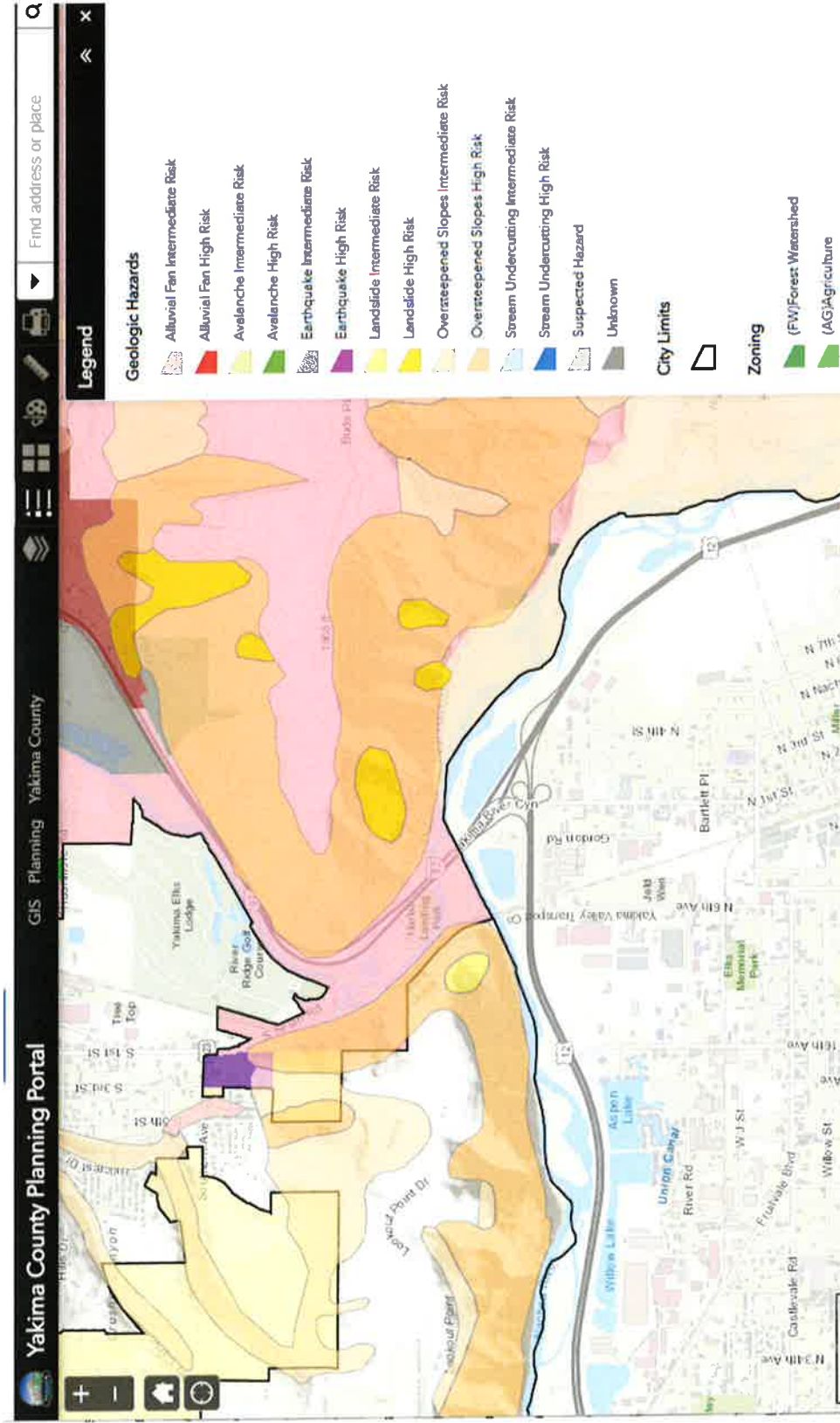
Geologic Hazards

- Alluvial Fan Intermediate Risk
- Alluvial Fan High Risk
- Avalanche Intermediate Risk
- Avalanche High Risk
- Earthquake Intermediate Risk
- Earthquake High Risk
- Landslide Intermediate Risk
- Landslide High Risk
- Oversteepened Slopes Intermediate Risk
- Oversteepened Slopes High Risk
- Stream Undercutting Intermediate Risk
- Stream Undercutting High Risk
- Suspected Hazard
- Unknown

City Limits

Zoning

- (FM)/Forest Watershed
- (AG)/Agriculture





1300 S. Evergreen Park Drive SW
PO Box 47250
Olympia, WA 98504-7250
(360)664-1257 or (360)664-1100
Fax: (360)586-1150
Web: www.wutc.wa.gov
E-mail: records@utc.wa.gov

TR-072009

GRADE CROSSING PROTECTIVE FUND APPLICATION FOR FUNDING

The Washington Utilities and Transportation Commission (commission), through its Grade Crossing Protective Fund (GCPF), funds projects that eliminate or mitigate public safety hazards at railroad crossings and along railroad rights-of-way in Washington State. Any public, private, or non-profit entity may submit an application to the commission for GCPF monies.

Please complete and submit the following information as part of the application process:

Applicant Information

Applicant Name: Dick Zais, City Manager
Organization: City of Yakima
Address: 129 North Second Street, Yakima, WA 98901
Phone: (509) 575-6040
E-mail:
Fax: (509) 576-6335

Please list all other companies, organizations or state or local agencies that may be involved in implementing this proposal and the contact name, address and phone number for each.

Yakima Valley Trolleys
Kenneth G. Johnson
P.O. Box 796
Yakima, WA 98907-0796
yakimavalleytrolleys@hotmail.com

Burlington Northern Santa Fe Railroad Company
Daniel MacDonald, P.E.
Managing Engineer - Seattle
2454 Occidental Avenue South, Suite 1_A
Seattle, WA 98134
(206) 625-6150, Fax (206) 625-6115
daniel.macdonald@bnsf.com

2008 OCT -7 PM 1:48
RECEIVED

Grade Crossing Protective Fund Application Form

Project Information

1. *Provide a detailed summary of the hazard being addressed. Include:*
 - *Any information about accidents or incidents at the site.*
 - *Photographs, drawings or other materials that supports the application.*

Currently, there are only two pedestrian crossing facilities for crossing the Naches River at the northern city limits of the City of Yakima. One is located at the eastern city limits (I-82) and the other is at the western city limits (Powerhouse Road). Due to this lack of pedestrian facilities, and despite "No Trespassing" signs, pedestrians occasionally use the BNSF railroad bridge to cross the Naches River. On July 12, 2007, a man and woman who were crossing the Naches River on the railroad bridge were struck by a passing train and seriously injured.

On several occasions recently, railroad police hired by BNSF have had to remove trespassers from the railroad property in this vicinity.

2. *Provide a detailed description of the proposed project and explain how it will eliminate or mitigate the hazard. Include any drawings or construction plans for the proposed project.*

This project will construct six-foot chain link fence to impede pedestrian and motor vehicle trespass onto BNSF property in the vicinity of the Naches River Bridge. As part of the William O. Douglas Trail project, a pedestrian pathway is planned to be constructed across the trolley bridge within the next couple of years. Fencing as shown on the attached drawing would deter pedestrians from accessing the railroad bridge. The fence would begin where Gordon Road crosses underneath the railroad tracks, then heads west approximately 150 feet across the trolley tracks to approximately 8-feet west of the trolley tracks, then head in a northwesterly direction parallel to the trolley tracks for approximately 670 feet, then make a 90 degree turn across the trolley tracks, then head in a northeasterly direction for approximately 70 feet to end adjacent to the BNSF south bridge abutment. At both locations where the fence crosses the trolley tracks, 20-foot gates will be installed. The fencing will continue east of the BNSF bridge for approximately 150 feet parallel to the Greenway Path.

In addition to improving safety, this fencing project may reduce the railroad's requirement for police enforcement.

3. *Provide cost estimates. Include:*
 - *Total costs of the project.*
 - *Names of parties contributing to the project and the amount each is contributing.*

Total project costs are estimated to be \$37,000. The City is requesting a grant of \$20,000 toward this total from WUTC.

Grade Crossing Protective Fund Application Form

4. *Provide the name of the party responsible for long-term maintenance.*
The City of Yakima and/or the Yakima Greenway Foundation will provide longterm maintenance of the fence.
5. *Provide an estimated timeline of project, if approved.*
Weather permitting; the project will be completed this fall. If not, the project will be completed next spring
6. *Provide a description of how the project's success would be measured.*
Success of this project can be measured by demonstrating a decrease in trespass incidents and pedestrian accidents on the BNSF Bridge.
7. *Provide any other information the applicant believes would be useful to the commission in considering the project.*
At several recent meetings, BNSF personnel have expressed their encouragement and approval of our plans to channel pedestrians away from railroad property and to reduce trespass by means of fencing.
8. *If the project involves any construction, modification or demolition on a railroad right-of-way, complete the attached Railroad Commitment form. This includes fencing, gates or other structures located near enough to the tracks to be on the railroad right-of-way, modification to a grade crossing or any other project that involves railroad property or rights-of-way.*
See accompanying email from BNSF engineer Daniel MacDonald expressing the railroad's concurrence with this project.

Submitting the Application

After completing the GCPF application, please send the original to:
Washington Utilities and Transportation Commission
Attention: Grade Crossing Protective Fund
1300 S. Evergreen Park Drive SW
PO Box 47250
Olympia, WA 98504-7250

A signed application may be filed electronically at records@utc.wa.gov. When filing electronically, please specify "Grade Crossing Protective Fund" in the subject line.

Assistance

For questions or assistance, please contact:

- Kathy Hunter at (360)664-1257 or by e-mail at khunter@utc.wa.gov.
- David Pratt at (360)664-1100 or by e-mail at dpratt@utc.wa.gov.

Railroad Commitment
TR-072009

The undersigned represents the Railroad Company in the GCPF application described as (enter a brief description):

The City of Yakima has applied for GCPF funds to erect fencing for trespass abatement purposes. The City's trolley bridge and the adjacent BNSF Railway bridge cross the Naches River at the northern end of Yakima City limits. See attached photos for location of fencing. It is believed the BNSF has a 200 ft. right-of-way at this location and much of the fencing would be on that right-of-way. The City of Yakima and/or the Yakima Greenway Foundation will provide long-term maintenance of the fence.

We have reviewed the application and are satisfied the conditions are the same as described by the applicant in this matter. We agree to allow construction, modification or demolition on a railroad right-of-way as described in the application.

See notes below.

John Li

Printed name of Railroad Representative

[Signature]

Signature of Railroad Representative

Manager, Public Projects

Title

206 625 6146

Phone

john.li@bnsf.com

E-mail

Date: 4/21/08

Notes: BNSF supports this application for safety improvements. The final design and location of the fencing will need to be approved by BNSF prior to its installation. The City will also need to obtain a permit from BNSF with current indemnity language and insurance limits and with a 30-day cancellation clause, if the fencing would be on BNSF's Right-of-Way.

UTL
COMMISSION

2008 APR 22 AM 10:06

RECEIVED

From: MacDonald, Dannie
To: Wayenberg, Karen
Cc: Polinsky, Bruce K; Ages, David W
Subject: RE: Yakima, WA - UTC Grant Application
Date: Friday, October 05, 2007 3:24:51 PM

Ms. Wayenberg,

Thank you for the opportunity to review the City of Yakima's UTC GCPF application. BNSF supports this application for safety improvements. The final design and location of the fencing will need to be approved by BNSF prior to its installation. We look forward to working with the City of Yakima address this safety concern.

Please contact me if you need additional information regarding BNSF's participation. Again, we look forward to working with the City on this issue.

Respectfully,

Dan

Daniel MacDonald, P.E.
Manager Engineering - Seattle
BNSF Railway Company
2454 Occidental Avenue South, Suite 1A
Seattle, WA 98134
Office: (206) 625-6150
Fax: (206) 625-6115
daniel.macdonald@bnsf.com

From: Wayenberg, Karen [mailto:kwayenbe@ci.yakima.wa.us]
Sent: Friday, October 05, 2007 12:53 PM
To: MacDonald, Dannie
Subject: RE: Yakima, WA - UTC Grant Application

Thanks for reviewing our application and the page requiring BNSF signature. Feel free to call me or reply to this email.

From: MacDonald, Dannie [mailto:Dannie.MacDonald@BNSF.com]
Sent: Friday, October 05, 2007 12:47 PM
To: Wayenberg, Karen
Subject: Yakima, WA - UTC Grant Application

Ms. Wayenberg,

With reference to our conversation this afternoon, my contact information is following. I look forward to reviewing this application.

Respectfully,

Dan

Daniel MacDonald, P.E.

HOME FRONT

Yakima Herald-Republic
Friday, July 13, 2007



GORDON KING/Yakima Herald-Republic

A woman is placed in an ambulance after nearly being struck by a train near Berglund Lake in Yakima on Thursday. She was injured when she was thrown off the tracks by a companion as the train approached.

Man hit by train after saving companion

By ROO ANTONIO
YAKIMA HERALD-REPUBLIC

A man was struck by a train Thursday morning after Yakima police said he saved a woman moments earlier by throwing her from a trestle as the train bore down on them.

The man, who has not been identified, suffered serious injuries and was taken to Seattle's Harborview Medical Center.

The two were among four people attempting to walk across a railroad bridge over the Naches River shortly after 8 a.m.

Although two of the men reached safety, the woman fell on the tracks, police said. She was helped to her feet by the third

He tosses woman from the tracks

man, who attempted to get them both to safety. But he ended up throwing her down a 10 to 15 foot embankment moments before being struck, police said.

The crew of the train, an east-bound Yakima day-switcher returning from Ellensburg with two locomotives and two refrigerated boxcars of corn, tried to warn the group by sounding the horn and then applying emergency brakes, said Burlington Northern Santa Fe spokesman Gus Melonas.

The train had slowed from 35 mph to between 10 and 15 mph when it struck the man, he said.

"This is an unfortunate situ-

ation," he said. "But this time of year we see an increase in trespassing situations."

"People take shortcuts and risks often by crossing railroad property and we encourage the public to use designated areas."

Yakima police initially said the man may have suffered back injuries. Authorities initially said it appeared the woman, who was also not identified, broke a leg when she landed on rocks below the trestle.

Melonas later said she suffered only cuts and bruises. There was no immediate word on their conditions. Although Yakima police



TJ MULLINAX/Yakima Herald-Republic

handled the initial investigation, it has been handed off to BNSF investigators.

Melonas said nine people have been killed on railroads this year in Washington state.

Gra

'No doubt he saved my life'

Train encounter broke victim's leg, pelvis

By ROD ANTONI
YAKIMA HERALD-REPUBLIC

As they crossed the bridge over the Naches River, Lisa Boitano was telling her three friends how cool it would be to see a passing train from up close.

That's when they saw the locomotive bearing down.

From her hospital bed Friday, Boitano recalled her friend Mark Brown's reaction.

"He said, 'You might get your chance — run.'"

But as they ran, Boitano fell, and her right leg slipped and became stuck between the wooden ties.

"I was freaking out and tried to pull myself up," she said. "But Mark came up behind me, grabbed both arms and pulled me out."

"No doubt he saved my life."

As the two prepared to leap off the tracks to an embankment about 10 to 15 feet below the tracks, they were struck.

"I felt the train hit my lower back, but he got the full force of it," said 21-year-old Boitano.

The impact threw them about 20 feet into the rocks below. Boitano said she broke her nose and fractured her right leg and pelvis. But then she looked up she saw that Brown, or Green as he is known to his friends, was hurt much worse.

"It was the scariest thing I've ever seen. Blood was everywhere," she said. "I kept saying, 'Green, don't die. Green, don't die. Wake up, wake up.'"

TRAIN

Continued from Page 1A

The crew of the train, an eastbound Yakima day-switcher returning from Ellensburg with two locomotives and two boxcars, spotted the group and began sounding the horn and applying emergency brakes, which slowed the train from 35 to about 10 to 15 mph, Burlington Northern Santa Fe spokesman Gus Melonas said Thursday.

Boitano said that the horn came too late — the train was almost on them when it sounded. And while braking probably saved their lives, she had no idea at the time that the train had slowed at all.

"It sure as hell didn't feel like it was going 15 mph when it hit us," she said.

Although Melonas said that technically the four were trespassing on railroad property, he did not say whether BNSF would pursue charges.

Boitano said she and her friends did not know they were

trespassing.

All she does know is that Brown, a man whom she described as being like a brother to her for the past four to five years, was willing to sacrifice himself to save her. The two met while she was a teenager living on the streets and have been close friends ever since.

"I would have been stuck in the tracks if he hadn't helped me out," she said. "He's just a wonderful person."

• Rod Antoni can be reached at 577-7028 or rantoni@yakimaherald.com.

Form

She is now at Yakima Memorial Hospital. Brown, 26, was taken to Seattle's Harborview Medical Center, where he was listed in serious condition after undergoing surgery Friday.

Boitano said doctors there told her he suffered multiple injuries, including two broken legs, a shattered pelvis, a broken jaw and a broken arm.

"He would have been okay if he had just jumped, if he hadn't stopped to help me," she said.

Earlier that morning, the four had watched the sunrise from the ridge between Yakima and Selah. They were walking the tracks back to Yakima, and were crossing the bridge shortly after 8 a.m.

Boitano said two of her friends had nearly reached the end of the bridge; she and Brown were only about halfway across.

SEE TRAIN PAGE 8A



SARA GETTYS/Yakima Herald-Republic

Lisa Boitano recovers in Yakima Valley Memorial Hospital on Friday, after being hit by a train while she and three others were crossing the trestle over the Naches River.

TR-072009

Boston, Bob (UTC)

From: Sheffield, Brett [bsheffie@ci.yakima.wa.us]
Sent: Tuesday, November 04, 2008 11:59 AM
To: Boston, Bob (UTC)
Subject: Grade Crossing Protective Fund Grant
Attachments: YVT Fence.pdf

Bob,

As we have discussed, part of the William O. Douglas Trail will include a pathway across the Trolley Bridge to allow pedestrians access across the Naches River. I believe that the description in the original application should have been modified to read like the following:

This project will construct six-foot chain link fence to impede pedestrian and motor vehicle trespass onto BNSF property in the vicinity of the Naches River Bridge. As part of the William O. Douglas Trail project, a pedestrian pathway is planned to be constructed across the trolley bridge within the next couple of years. Fencing as shown on the attached drawing would deter pedestrians from accessing the railroad bridge. The fence would begin where Gordon Road crosses underneath the railroad tracks, then heads west approximately 150 feet across the trolley tracks to approximately 8-feet west of the trolley tracks, then head in a northwesterly direction parallel to the trolley tracks for approximately 670 feet, then make a 90 degree turn across the trolley tracks, then head in a northeasterly direction for approximately 70 feet to end adjacent to the BNSF south bridge abutment. At both locations where the fence crosses the trolley tracks, 20-foot gates will be installed. The fencing will continue east of the BNSF bridge for approximately 150 feet parallel to the Greenway Path.

In addition to improving safety, this fencing project may reduce the railroad's requirement for police enforcement.

I have also attached a drawing showing the proposed fencing project. If you have any questions or require additional information, please don't hesitate to contact me. Thanks for your help.

Brett H. Sheffield, P.E.
Chief Engineer
City of Yakima
PH. (509) 576-6797
Fax (509) 576-6305

Rivera, Eva

From: 350 Yakima Climate Action <350yakimaclimateaction@gmail.com>
Sent: Wednesday, October 14, 2026 12:54 PM
To: Ask Planning; Preston, Bill; Martin, Trevor
Cc: Ray Paolella; Bob Cox; Felipe Rodriguez-Flores
Subject: PART 3 of 3 -- Comments on Yakima's draft Comprehensive Plan 2050 by 350 Yakima Climate Action
Attachments: 350 Yakima Comments on Comp Plan 2050 & SEPA Documents.pdf; YHD BRIC Funding Request.pdf

Dear Planning Commission,

Attached is a letter from 350 Yakima Climate Action with comments on the City's draft Comprehensive Plan 2050, along with 10 attachments.

NOTE: Due to the length of attachments, we are sending attachments in two separate emails. This is Part 3 of 3! Unfortunately, one attachment fell off. See copy attached.

Please include these in the public record today.

Thank you,

Coleen Anderson
350 Yakima Climate Action
346 N 24th Avenue
Yakima, WA 98902
[360-731-4555](tel:360-731-4555)

cc: Ray Paolella
Felipe Rodriguez Flores
Bob Cox

Attachments:
YHD BRIC Fund Request

--
350 Yakima Climate Action acknowledges we live and work on the ancestral lands of the fourteen Confederated Tribes and Bands of the Yakama Nation. The people of the Yakama Nation inhabited more than 12 million acres across Adams, Benton, Chelan, Douglas, Franklin, Grant, Kittitas, Klickitat, and Yakima Counties. We thank the caretakers of this land who have lived here and continue to live here since time immemorial.

October 13, 2026

City of Yakima Planning Commission
Planning Division
129 N. 2nd Street
Yakima, WA 98901

RE: Yakima Comprehensive Plan 2050 and State Environmental Policy Act (SEPA)

Dear City of Yakima Planning Commission and Planning Division:

City of Yakima's Notice of Public Hearing/Notice of Environmental Review (9/24/2026) requests comments on the: (1) proposed Yakima Comprehensive Plan 2050 and (2) SEPA Environmental Checklist and proposed Determination of Non-Significance (DNS). Please accept these comments from 350 Yakima Climate Action relating to SEPA Review of the GMA-required Climate Resiliency Subelement and the Transportation Element's required Multimodal and Active Transportation provisions since the transportation sector produces about half of all climate-warming greenhouse gas emissions in Washington State. Please include this letter and all the attachments in the October 14, 2026 Public Hearing Record.

Growth Management Act (GMA) Requirements

The City of Yakima must adopt a *resiliency subelement* as part of the City's GMA Comprehensive Plan Update.

The resiliency subelement must equitably enhance resiliency to, and avoid or substantially reduce the adverse impacts of, climate change in human communities and ecological systems through goals, policies, and programs consistent with the best available science and scientifically credible climate projections and impact scenarios that moderate or avoid harm, enhance the resiliency of natural and human systems, and enhance beneficial opportunities. The resiliency subelement must prioritize actions that benefit overburdened communities that will disproportionately suffer from compounding environmental impacts and will be most impacted by natural hazards due to climate change.

Under state law, the resiliency subelement must have specific goals, policies, and programs to:

- (A) Identify, protect, and enhance natural areas to foster resiliency to climate impacts, as well as areas of vital habitat for safe passage and species migration;
- (B) Identify, protect, and enhance community resiliency to climate change impacts, including social, economic, and built environment factors, that support adaptation to climate impacts consistent with environmental justice; and
- (C) Address natural hazards created or aggravated by climate change, including sea level rise, landslides, flooding, drought, heat, smoke, wildfire, and other effects of changes to temperature and precipitation patterns.

According to Department of Commerce Guidance, the City of Yakima can meet GMA's "minimum requirements" by including in the comprehensive plan "*at least one climate resilience policy for each climate-related hazard (e.g., sea level rise and drought) that is relevant to the jurisdiction.*" Washington Department of Commerce, Climate Element Planning Guidance (Growth Management Services, December 2025):

<https://deptofcommerce.app.box.com/s/glw5yo8jvfsd40eoa4kdsx0fzde3s9ii>

State Environmental Policy Act (SEPA) Requirements

Under RCW Chapter 43.21C and WAC Chapter 197-11, the City of Yakima is required to conduct the SEPA process to analyze direct, indirect, and cumulative impacts of Comprehensive Plan Amendments on public safety, public health, the natural environment, and the built environment. SEPA documents must address probable impacts of future project actions allowed/anticipated by the Comprehensive Plan Amendments. If the proposed Comprehensive Plan Amendments may have a probable significant adverse environmental impact, the SEPA Responsible Official must issue a Determination of Significance (DS) and an Environmental Impact Statement is required.

SEPA Environmental Checklist Inadequate

The SEPA Environmental Checklist (Sept. 24, 2026) is woefully inadequate and should be rewritten to bring it into compliance with state law.

The Environmental Checklist fails to mention the required *Resiliency Subelement*.

The Environmental Checklist fails to discuss efforts to equitably enhance resiliency to, and avoid or substantially reduce the adverse impacts of, climate change in human communities and ecological systems through goals, policies, and programs consistent with the best available science and scientifically credible climate projections and impact

scenarios that moderate or avoid harm, enhance the resiliency of natural and human systems.

The Environmental Checklist fails to discuss:

- Overburdened Communities -- RCW 36.70A.030(31)
- Environmental Justice -- RCW 36.70A.030(17)
- Highly Impacted Communities – RCW 19.405.020(22)
- Vulnerable Populations disproportionately impacted by environmental harms -- RCW 36.70A.030(52)
- Vital habitat for safe passage/species migration -- RCW 36.70A.070(9)(e)
- Best Available Science -- RCW 36.70A.070(9)(e)

The Environmental Checklist mentions “climate goals and policies” but does not discuss the application of policies to avoid or substantially reduce the adverse impacts of climate change in highly impacted human communities with vulnerable populations.

Probable Significant Adverse Environmental Impacts

1. Climate Resiliency: East Yakima Overburdened Community Highly Impacted by Air Pollution

The East Yakima Overburdened Community is delineated in the attached “East Yakima Community 2025 Environmental Justice Report” and “2025 Report: Overburdened Communities Highly Impacted by Air Pollution.”

These reports were produced as a collaboration between the State Departments of Health and Ecology, and the reports contain Best Available Science and present scientifically credible climate projections and impact scenarios. Additional Best Available Science and climate impact scenarios are presented in the attached “Climate Action Plan for the City of Yakima (November 2023)” developed by the Sustainable Yakima Committee.

The East Yakima Overburdened Community has the highest estimated number of deaths per population associated with yearly PM 2.5 air pollution exposure in the entire State of Washington: 78 deaths per 100,000 population. The Lower Yakima Valley Overburdened Community Has the next highest estimated number of deaths per population associated with yearly PM 2.5 air pollution exposure: 56 deaths per 100,000 population.

The Environmental Checklist and Draft Comprehensive Plan 2050 contain no discussion of the very significant adverse climate change impacts in Overburdened Communities. The Environmental Checklist and Draft Comprehensive Plan 2050 have

no goals or policies to identify, protect, and enhance resiliency to climate change impacts on Overburdened Communities. There are no goals or policies to address natural hazards created or aggravated by climate change.

2. Climate Resiliency: Climate-Related Drought

Yakima heavily relies on water resources for agricultural activities and water supply for its residents. However, climate change has led to changes in the timing and intensity of precipitation, reducing snowpack in the mountains, altering the natural water flow regime, and affecting the availability of water during the dry season. This results in water scarcity, impacting agricultural productivity and the availability of drinking water. Drought is a serious hazard arising from climate change that could have profound deleterious impacts on the Yakima Valley economy. Changes in temperature and precipitation patterns due to climate change can alter growing seasons and affect crop yields. Warmer temperatures and increased risks of pests and diseases can pose significant challenges to agricultural production.

3. Community Resiliency: Active Transportation

The East Yakima Overburdened Community currently has inadequate access to green space and outdoor recreation on both sides of the Yakima and Naches River riparian corridors, including access to about 100 acres of public recreational lands at the rivers' confluence and William O. Douglas Hillclimb. The proposed multimodal level of service standards compromise public safety goals by allowing shared uses of City streets lanes by motor vehicles, pedestrians, and bicycles without requiring dedicated space/separation for non-motorized active transportation.

4. Determination of Significance

Due to probable, significant adverse climate impacts, the SEPA Responsible Official is required to issue a Determination of Significance. An environmental impact statement must be prepared for the proposed Comprehensive Plan Amendments. Discussions should include significant direct, indirect, and cumulative environmental impacts, significant irrevocable commitments of natural resources, reasonable alternatives including mitigation measures, and significant environmental impacts which cannot be mitigated. RCW 43.21C.030, RCW 43.21C.031.

Suggested Revisions to Yakima Comprehensive Plan 2050

The proposed Comprehensive Plan 2050 has no identifiable *Resiliency Subelement* and fails to discuss efforts to equitably enhance resiliency to, and avoid or substantially reduce the adverse impacts of, climate change in human communities and ecological systems through goals, policies, and programs consistent with the best available

science and scientifically credible climate projections and impact scenarios that moderate or avoid harm, enhance the resiliency of natural and human systems.

The proposed Comprehensive Plan 2050 fails to identify, protect, and enhance community resiliency to climate change impacts, including social, economic, and built environment factors, that support adaptation to climate impacts consistent with environmental justice. The proposed plan does not address potential high-risk landslides where the City proposes to operate and maintain abandoned railroad tracks for public use in Selah Gap. The plan does not have a resilience policy for climate-related drought hazards arising from declining mountain snowpacks that alter the natural water flow regime that City residents and the agricultural economy rely on.

To equitably enhance resiliency to the adverse impacts of climate change in human communities and ecological systems and to avoid worsening localized climate impacts in overburdened communities, the Comprehensive Plan should include specific goals and policies to identify, protect, and enhance resiliency to climate change impacts in human communities and ecological systems and address natural hazards created or aggravated by climate change, as recommended in the “Climate Action Plan for the City of Yakima (November 2023)” developed by the Sustainable Yakima Committee based on Best Available Science (Attached).

The Yakima Greenway and William O. Douglas Trail that serve the residents of the East Yakima Overburdened Community should be completed and maintained to provide Vulnerable Populations with access to green space and outdoor recreation on both sides of the Yakima and Naches River riparian corridors, including access to about 100 acres of public recreational lands at the rivers confluence and William O. Douglas Hillclimb. Safe pedestrian and bicycle connections to the City’s Lower Cowiche Canyon/William O. Douglas Trail should be prioritized for recreational access and commuting by residents in East Yakima. Consistent with evolving state transportation standards to protect public safety, multimodal levels of service in the Transportation Element should be revised to require spatial separation between active transportation and motorized vehicles. Future transportation projects should have dedicated, protected pedestrian, bicycle, and ADA facilities.

Additional specific policies should be considered in the Comprehensive Plan to address Climate Resiliency:

- Solar panels on every public building.
- Work toward transitioning public transportation to electric.
- Require trees be planted with all new development. For example, in San Antonio, Texas, before any development of property a tree application must be submitted. See [Tree Preservation - City of San Antonio](#)

- The City should plant more trees in overburdened communities. See Health Disparities Map at [Environmental Health Disparities \(EHD\) Map](#)
- The City should plant more trees than currently exist along creeks and rivers and especially along salmon streams and riparian areas
- Build/designate cooling/warming centers and make sure the community knows where they are, especially the houseless. See information here: [How to Turn Facilities into Public Cooling Centers During Extreme Heat - Facilities Management Advisor](#)
- Protect and conserve water by putting limits on the amount of irrigation water and restricting specific activities—such as limiting outdoor lawn watering schedules, banning runoff, or adjusting pricing tiers to discourage heavy usage. See what they did in California: [CA adopts mandatory water conservation rules - CalMatters](#)
- Build/designate fresh air centers during poor air quality days and make sure the community knows where they are, especially those highly impacted by air pollution such as outdoor workers, unhoused populations and tribes
- Protect workers from wildfire smoke. See: [Portal for Protection from Wildfire Smoke](#)
- **Use portable air cleaners:** During poor air quality days, deploy portable HEPA air purifiers in rooms where large numbers of people gather if central HVAC upgrades are not immediately possible.
- Frontline communities may live in homes that aren't properly sealed, don't have access to air purifiers, and often cannot afford to stay inside on poor air quality days due to work that exposes them to the poor air quality. We need to be sure they can access clean air spaces.
- All tribes are considered overburdened communities, so these measures should be in all tribal lands.
- Work with community-based organizations to ensure proper training and education on being prepared for poor air quality and how to use a mask. Ensure that outreach is done in a culturally competent and humble way and in each participant's native language. [Read about Emergency Operations Plans and cultural competence.](#)
- Maintain a supply of NIOSH-certified N95 respirator masks to be distributed to underserved and vulnerable community members during times of poor air quality. Ozone levels are increased by chemical reaction on hot days.
- Add poor air quality prevention to your [Hazard Mitigation Plan](#). Create and or develop a response protocol for poor air quality days in partnership with frontline communities.
- Establish more robust communication to let people know about health hazards from poor air quality. For example, if more people knew the health risks of jogging on poor air quality days, they wouldn't do it.
- The Yakima County Health District does not take responsibility for sharing important health messages. The City should encourage robust communication on poor air quality days.

- Create clean air centers in frontline communities. Use spaces that are already common gathering spots.
- Create a free air purifier program to distribute air purifiers to frontline communities, [like this program in the City of Ashland](#).
- Measures should be taken to protect outdoor workers during poor air quality and excessive heat days. Create model laws to protect frontline communities from poor air quality. For example, [The Farmworker Smoke Protection Act of 2019, which requires the Occupational Safety and Health Administration \(OSHA\)](#) to address the exposure of farmworkers to wildfire smoke. OSHA will now require employers to offer protective equipment and offer training on how to use it. This is a good start. However, we need enforcement mechanisms to make sure workers are safe and have ways to take time off if they shouldn't be outside.
- Standards should be adopted to control PM2.5 pollution from industrial dairies and other industrial polluters.
- Farmers should be encouraged to utilize no-till farming practices to keep down the dust from the tilling of fields.
- Adopt measures that will require and help farmers plant cover crops when their fields are fallow. See: [The Scientific Case for Paying Farmers to Use Cover Crops and No-Till - National Farmers Union](#)
- The City should consider adopting standards or controls on industrial dairies' unlimited, unmetered use of water
- Apply for grants from the Dept. of Commerce for money available through the Climate Commitment Act to help pay for these measures. See: [Climate Planning Grants – Washington State Department of Commerce](#)

The public should have documents to inform review of the Comprehensive Plan Update and Proposed Determination of Nonsignificance (DNS). Critical documents such as the Proposed Determination of Nonsignificance (DNS), six appendices and Planning Commission 10/14/2026 agenda are not available online, including the "Climate Vulnerability Assessment Memo" and "Climate Element Summary" which has not been released to the public.

Thank you for your consideration,

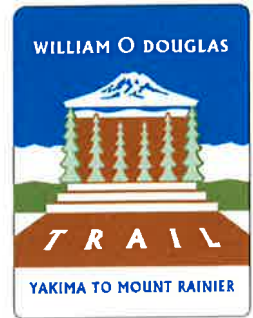
Coleen Anderson
 Raymond Paoella
 350 Yakima Climate Action

Attachments:

1. *2025 Report: Overburdened Communities Highly Impacted by Air Pollution* by Washington State Departments of Ecology and Health (December 2025, Ecology Publication 25-02-037):
<https://apps.ecology.wa.gov/publications/summarypages/2502037.html>
2. *East Yakima Community 2025 Environmental Justice Report* (Washington State Departments of Ecology):
<https://apps.ecology.wa.gov/publications/parts/2502037part15.pdf>
3. Climate Action Plan for the City of Yakima (November 2023)" developed by the Sustainable Yakima Committee
4. Yakima Health District BRIC Funding Request
5. Yakima Health District BRIC Award Letter
6. SEPA Environmental Checklist
7. Naches River Bridge ADA ramp up to Landing Wayside
8. Yakama Nation Letter to City of Yakima 12.3.2025
9. Landslide High Risk Info along Railroad Tracks
10. UTC & BNSF Approval of Shared Use Trail in RR ROW

March 1, 2022

Lilian Bravo, Public Health Partnerships Coordinator
Yakima Health District
1210 Ahtanum Ridge Drive
Union Gap, WA 98903



RE: Building Resilient Inclusive Communities Funding Request

Dear Ms. Bravo:

I am writing on behalf of the William O. Douglas Trail Foundation (WODTF), a Washington non-profit 501(c)(3) organization, to request funding under the Building Resilient Inclusive Communities (BRIC) program to increase community access to nature and safe physical activity opportunities.

WODTF would like to request a total of \$6,900.00 in BRIC funds. These funds will be used to enhance inclusive and equitable access to safe physical activity areas among disproportionately impacted, low-SES and communities of color in northeast Yakima by designing trail access improvements near 6th Avenue. The strategies to increase community access are described below, and the design tasks are specified in Attachment A: Budget.

The northeastern neighborhoods of Yakima are a significant "Overburdened Community" where vulnerable populations face combined, multiple environmental harms and health impacts. The State Department of Health has designated these overburdened neighborhoods as having high "Environmental Health Disparities," where communities of color and low-income populations are disproportionately affected by lack of access to safe physical activity areas and nature.

"Upstream" social, environmental, and institutional inequities can be the root cause of "downstream" chronic disease and increased rates of morbidity, especially in communities of color and among lower income populations that historically lacked adequate access to parks, green space, and healthy outdoor recreation opportunities. One key strategy for preventing and controlling chronic disease and reducing health inequities resulting from upstream factors can be to increase access to walking, biking, running, and experiencing nature close to home.

WODTF owns 70 acres of open space recreation lands on the north bank of the Naches River, including the William O. Douglas Hill Climb at Selah Gap. This area was used by U. S. Supreme Court Justice William O. Douglas (as a teenager) to strengthen his disease-weakened legs by regularly walking two miles from his northeast Yakima home, crossing the Naches River, and then hiking up Selah Ridge. His health improved greatly. As he grew stronger and matured, Douglas continued with regular physical activities close to his Yakima home, became a brilliant student, a lawyer and judge, and came close to becoming President of the United States.

WODTF is working with the Cities of Yakima and Selah, and Yakima County, to create healthier neighborhoods by improving access to parks, open space, nature, and outdoor recreation areas close to where people live. Northeast Yakima residents could especially benefit from providing safe access to recreation opportunities along the Naches River and the William O. Douglas Hill Climb recreation lands at Selah Gap (see attached photo of Naches River Bridge with north bank recreation areas in background, together with a second photo of students who accessed this area from the Selah side).

WODTF seeks funding for engineering design and specifications for bridge decking and fencing on the Naches River Multi-Modal Bridge so northeast Yakima residents and students can walk, run, or bike north on the existing 6th Avenue pathway and safely cross the Naches River to access open space recreation areas at Selah Gap without relying on motor vehicle transportation. A licensed bridge and structural engineer will design this bridge walkway to meet and exceed all applicable safety standards and codes.

Thank you for your consideration.

Sincerely,

Raymond L. Paoella
 Raymond L. Paoella, President
 William O. Douglas Trail Foundation
 P.O. Box 2003
 Yakima, WA 98907
 (509) 594-6999

Attachment A: Budget

<u>Description</u>	<u>Total</u>
Engineering Services, Plans, and Specifications • Design pedestrian walkway on Naches River Bridge that meets and exceeds all applicable safety standards and codes. • Design ADA accessible ramp from existing Greenway Path.	<u>\$4,900</u>
Wayfinding/Interpretive Signage • Design, fabricate, and install directional trail signs. • Design, fabricate, and install an informational sign about health benefits of hiking on William O. Douglas Trail.	<u>\$2,000</u>

Attachment B: Support Letters and Supplemental Information



Stanton Academy

802 River Road • Yakima, WA 98902 • 573-1200

William O. Douglas Trail Foundation
4001 Summitview Avenue, Suite 5-45
Yakima, WA 98908

Vision Statement:

"Beginning with the end in mind..."

Mission Statement:

*Students, families, and staff
working together towards
graduation.*

2015-2016 School Focus:

*Literacy
Relationships
Collaboration*

To whom it may concern:

I am currently the principal at Stanton Academy located on River Road to the west of 6th Avenue. We have direct access to the William O. Douglas Trail. Our students utilize the trail on a daily basis, coming to and departing school. A basic requirement for our students to graduate is the knowledge of United States History. What better opportunity than to explore the early life of one of our Supreme Court Justices? The local effort to preserve this important part of history is a movement our students should be involved in.

During the 2015-2016 school year, we had one third of our students participate in an outdoor activity that spanned many content areas. In order to do this transportation, was a large detractor to planning. The activity included history, hiking, natural sciences, and sustaining nature. Having grown up in the area and hiked and biked in the proposed area, I personally support the project. To have access to an area such as the proposed Selah Ridge Area and the William O. Douglas hill climb would be a boon for us.

Our students get most of their experience of the city, state, and federal government through text or multimedia presentations. The opportunity to participate in this effort at whatever level will support their acquisition of local history, local government processes, and the federal court system. Students will have the chance to participate in the improvements in the city infrastructure along the route they travel on a daily basis.

As this effort progresses, I hope that we may participate in some way to help the project succeed. Stanton Academy has a strong sense of family. The values that this project is built upon is to bring a sense of community, history and pride which being a part of a family includes. These are a few of the reasons that I, as principal of Stanton Academy and an educator in the Yakima School District for 34 years can support this effort.

Dave Chaplin
Principal

Rod Bryant
Dean of Students



Sincerely,

A handwritten signature in blue ink, which appears to read "David Chaplin".

David Chaplin
Principal

Yakima School District encourages workforce diversity and complies with all state and federal laws prohibiting unlawful discrimination.



A.C. Davis High School
212 South 6th Avenue
Yakima, Washington 98902
509-573-2700



Leadership Yakima
Greater Yakima Chamber of Commerce
P.O. Box 1490
Yakima, WA 98907

Dear Leadership Yakima Team:

I would like to write in support of the Naches River Bridge Walkway proposed by Leadership Yakima and the William O. Douglas Trail Foundation. The Yakima School District and the staff of A.C. Davis High School endeavor to provide the highest quality educational programs and learning opportunities for our students. Part of the educational process is teaching students the significance of our heritage.

The William O. Douglas Trail presents an excellent opportunity to teach students about local history and the environment. Davis High School plays an important role at the start of this trail because Douglas attended and served on the faculty of this institution. Several teachers have guided students on interpretive hikes to the Selah Gap area. These treks have enabled us to integrate important aspects of natural history, literature, and social studies in a manner that is not always possible in the classroom. Many students learn best when the theories or concepts acquired in the classroom are linked to "hands on" or "on the ground" learning. The Selah Gap and Naches/Yakima Rivers Confluence Area possesses a rich storehouse of local history, natural history, and landforms within the urban area that enhance such learning.

Installation of a pedestrian walkway on the trolley bridge will enable students, faculty, and community members to access this important resource area at the confluence of the Yakima and Naches Rivers. We hope to see this project completed to promote these unique learning opportunities and healthy outdoor activities for the community.

Sincerely,

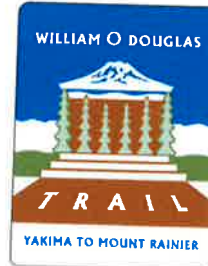
Ben Ramirez, Principal
A.C. Davis High School

We educate students for success: life-long learning, employment and social awareness.

"Yakima School District encourages workforce diversity and complies with all state and federal laws prohibiting unlawful discrimination."

WILLIAM O. DOUGLAS HERITAGE TRAIL

William O. Douglas grew up in Yakima, WA challenged by poverty and life-threatening illness. In a rags-to-riches story, Douglas overcame severe childhood disabilities, excelled academically, served prominently on the U.S. Supreme Court, and came close to becoming President of the United States.



William O. Douglas (born 1898) served on the U.S. Supreme Court from 1939 to 1975 — longer than any other justice in U.S. history. His father died when Douglas was 6 years old, and he was raised in Yakima by his mother. He graduated from North Yakima High School (valedictorian) in 1916 and attended Whitman College in Walla Walla from 1916-1920. He taught at Yakima High School for two years before jumping a train east to attend law school at Columbia, and thereafter became a law school professor at Columbia and Yale before being appointed in 1936 by President Franklin D. Roosevelt to the new Securities and Exchange Commission. FDR appointed him to the Supreme Court in 1939 to fill the seat of retiring Justice Louis Brandeis.

On the Supreme Court, Douglas became a staunch advocate of Equal Protection for minority people, of First Amendment rights of expression, assembly, and religion, and of privacy rights. His influence on our law continues to be strongly felt. He was an extremely important figure to Native Americans and a very effective champion of preserving wilderness all over the Nation. He was also a prolific author, writing dozens of books and hundreds of magazine articles about his adventure travels and outdoor recreation. Douglas narrowly missed being selected as FDR's Vice-President in 1944, which would have made him President upon FDR's death in April 1945.

As a child, Douglas nearly died after being stricken with polio and was left greatly weakened. In 1912 he decided to strengthen his legs by hiking north from his 5th Avenue house in Yakima up into the hills near Selah Gap. The cure worked — growing ever bolder during his teenage years, he explored further into the tangled, rugged mountains of the Pacific Northwest, and ultimately journeyed east to New York and Washington, D.C.

Info: www.williamodouglastrail.org

Email: williamodouglastrail@gmail.com

U. S. Supreme Court Justice William O. Douglas on Hiking and Botanizing at Selah Ridge

My love of the mountains, my interest in conservation, my longing for the wilderness - all these were lifetime concerns that were established in my boyhood in the hills around Yakima and in the mountains to the west of it. This is one of the quietest, most peaceful spots on earth. It has special values for me. The Yakima Valley, whose orchards I see by day and lights by night, is the treasure house of my boyhood. It was there I dreamed the dream I lived as a man.

It was infantile paralysis that drove me to the outdoors. By boyhood standards, I was still a cripple, unable to compete physically. . . . I was a failure. If I were to have happiness and success, I must get strong. And so I searched for ways and means to do it. I got myself a set of barbells and practiced day after day, trying to strengthen my legs, back, and arm muscles. Even so, strenuous exercise still made me feel faint. Sometimes I would vomit, sometimes I'd get a severe headache. So I decided to start hiking the sagebrush hills that rim Yakima.

I would leave the town and head to Selah Gap, the point of the hills nearest my home on North Fifth Avenue. . . . The hills to the north of Yakima were only about two miles away. Thus I started my treks, and used the foothills as one uses weights or bars in a gymnasium. First I tried to go up them without stopping. When I conquered that, I tried to go up without a change of pace. When that was achieved, I practiced going up not only without a change of pace but whistling as I went.

That fall and winter the exercise began to work a transformation in me. By the time the next spring arrived, I had found new confidence in myself. My legs were filling out. They were getting stronger. I could go the two miles to Selah Gap at a fast pace and often reach the top of the ridge without losing a step or reducing my speed. My heart filled with joy, for I knew I could accept the invitation to visit the mountains. I would have legs and lungs equal to it.

The desert hills of Yakima had a poverty that sharpened perception - when a lone bitterroot is seen in bloom on scabland between batches of bunchgrass and sage, it can transform the spot as completely as only a whole bank of flowers could do in a more lush environment. It is the old relationship between scarcity and value, one of the botanical lessons which the foothills of Yakima taught me.

