

# Version 3.0 Updates

## Washington Environmental Health Disparities (EHD) Map



The places where we live, work, and play affect our health — so does our social world. Aspects of these environments overlap and interact. Factors like pollution, racism, colonialism, cost of living, and pre-existing health challenges can add up and make things worse.

The primary goal of the EHD map is to identify communities most affected by environmental health risks. The tool ranks these risks by census tract, highlighting communities most burdened with the cumulative impacts of pollution. It also identifies environmental health measures by census tract, providing useful, data-driven insights for communities, policymakers, government leaders and staff, and others.



### What's New with Version 3.0?

The Washington State Department of Health released version 3.0 of our EHD Map in Winter 2026, based on work that began in 2022. This release is a draft, and we will continue to make updates based on feedback and as resources allow.

#### Updates in this version include:

- **New measures** created to address gaps identified through Tribal consultation and community engagement, using statewide data available at the census tract level and updated regularly:
  - Air Quality-Related Respiratory Diseases
  - Community Retail Food Environment
  - Digital Infrastructure
  - Pesticide Exposure
  - People with a Disability
  - Water Quality
  - Wildfire Smoke Exposure

- **New Tribal lands layer** that appears automatically when users open the map. This was added because Tribal lands are included in the "overburdened community" definition in the Healthy Environment for All (HEAL) Act and the Climate Commitment Acts (CCA), and we wanted this to be clearly visible to users.
- **Recalculation of all measures** to align with the updated Washington State census tract boundaries (from 2010 to 2020) due to population changes:
  - The 2010 census included 1,458 census tracts; the 2020 census includes 1,772.
  - Some tracts were split into multiple tracts, while others were merged or newly created.
- **Updated methods** for multiple measures:
  - Lead Risk from Housing
  - Low Birth Weight
  - Ozone Concentration
  - PM2.5 Concentration
  - Proximity to Hazardous Waste Sites
  - Proximity to Risk Management Plan Sites
  - Proximity to Superfund Sites
  - Risks from Diesel and Other Air Toxics
- **Improved data note readability** and incorporation of Tribal and community partner feedback
  - Each data note now includes an overview with a brief explanation of the measure and populations most affected.
  - Each measure was reviewed with an environmental justice lens to show how it affects historically marginalized populations, especially in communities and Tribal Nations leading environmental justice efforts.
- **Map platform transition** from the Information by Location tool to ArcGIS
  - This transition allows us to better support functionality needs identified by community members, Tribes and partners.



## Environmental Exposures

### New Measures Added:

- **Pesticide Exposure:** This measure estimates exposure — or contact with chemicals — by looking at the amount of pesticides applied to major crops. It uses 2019 cropland data from the U.S. Department of Agriculture and annual agricultural data from the U.S. Geological Survey.



We added this measure because pesticides can affect health, especially for farm workers and people living in rural areas.

- **Wildfire Smoke Exposure:** This measure estimates wildfire smoke exposure by combining the number of smoky days with smoke intensity. It uses daily smoke plume data from the National Oceanic and Atmospheric Administration's Hazard Mapping System and air quality concentration data. The measure covers June through September from 2017–2023, with October 2022 included due to significant smoke events.



We added this measure because wildfires are happening more often and burning larger areas, partly due to climate change and forest management practices. Wildfire smoke can make it difficult to breathe and can worsen health conditions such as asthma and heart disease. Large fires also cause lasting damage to land and have cultural, economic, and community impacts — including the need for recovery efforts and risk reduction.

### Updated Methods:

- **Risks from Diesel and Other Air Toxics:** We combined Diesel Exhaust PM<sub>2.5</sub> Emissions and Toxic Releases from Facilities into one measure. The data source is EPA's AirToxScreen (2020). This measure now includes additional sources of pollution that communities and Tribes have raised concerns about — including marine traffic, residential woodburning stoves, and agricultural activities.



Including these data provides a better picture of cancer risk from air pollution across Washington.

- **Updated Concentration Estimates:** We updated the *PM<sub>2.5</sub> and Ozone Concentration* estimates from 2014–2017 to 2022–2024 using data from the Department of Ecology. We also adjusted how the data are ranked to align with current federal health standards.

### Updated Data:

- **Proximity to Heavy Traffic Roadways** now uses 2019 roadway traffic data from the WSDOT Map Center and has been updated to align with 2020 census tracts (previously based on 2010 tracts).



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## Environmental Effects

### New Measures Added:

- **Water Quality:** This measure tracks the number of unique pollutants found in impaired waterbodies using data from the Washington State Department of Ecology's 2018 Water Quality Assessment and Water Quality Atlas. Tribal Nations and communities that rely on natural waters face greater risks from pollution, which impacts both health and cultural traditions. Tribal partners made it clear that water quality should be a priority on the map. Water quality is shown along reservation boundaries; however, Ecology does not assess or make water quality determinations for waters within reservations.



### Updated Methods:

- We updated the 5-year American Community Survey (ACS) estimates for the **Lead Risk from Housing** measure from 2015–2019 to 2019–2023. We also updated the proportion of houses built in each decade that contain lead, based on new research findings.
- Proximity to Hazardous Treatment, Storage, and Disposal Facilities is now called **Proximity to Hazardous Waste Sites**. The data source has changed from EPA EJSCREEN to a dataset created by the Washington Department of Ecology using its own data. This update improves stability, increases transparency about included sites, and uses a broader definition of facilities (including Department of Defense sites). The analysis buffer has expanded from 5 kilometers to 10 kilometers. Data is updated from 2021 (EPA) to a combined 2022-2023 dataset (Ecology).
- For **Proximity to Risk Management Plan Sites**, data is updated from 2021 to 2024 using EPA EJSCREEN. The analysis buffer is expanded from 5 kilometers to 10 kilometers.
- Proximity to National Priority List (Superfund) Sites is now called **Proximity to Superfund Sites**. This measure is now produced by the Washington Department of Ecology using EPA Superfund National Priorities List data, increasing transparency about the sites included. Previously, the data source was EPA EJSCREEN. The analysis buffer expanded from 5 kilometers to 10 kilometers. The data is updated from 2021 (EPA) to 2024 (EPA).

### Updated Data:

- The **Wastewater Discharge** measure has been updated from 2021 to 2024 using EPA EJSCREEN data.



## Socioeconomic Factors

### New Measures Added:

- **Community Retail Food Environment:** This measure examines access to nutritious food by comparing stores that offer fresh, nutrient-dense options with those that primarily sell processed or fast food. It uses 2023 Data Axle via ESRI's ArcMap v10.8 Business Analyst. We added this measure because the food environment plays a key role in shaping access to nutrition, and limited access can contribute to health disparities. Community members also identified this as an important issue to include.



**Note:** This measure ranks census tracts from 10 down to 1 – instead of 1 up to 10 – so areas with the least access to nutritious food receive the highest rank of 10.

- **Digital Infrastructure:** This measure shows the availability and speed of internet access, using 2023 Infrastructure/Adoption (INFA) data from the Purdue Digital Divide index. We added this measure because digital infrastructure connects people to education, jobs, and health care services (including telehealth), emergency alerts, and social opportunities. Without reliable digital access, people may face barriers that impact their health and well-being.



### Updated Data:

- Limited English Proficiency is now called **Primary Language Other than English**.
- We updated the 5-year American Community Survey (ACS) estimates from 2015–2019 to 2020–2024 for:
  - No High School Diploma
  - Population Living in Poverty
  - Primary Language Other than English
  - Unaffordable Housing
  - Unemployment
- The **People of Color (Race/Ethnicity)** measure was updated from 2019 to 2024 using estimates from the Office of Financial Management.
- **Transportation expense** data was updated from 2019 to 2022, using data from the Center for Neighborhood Technology.



## Sensitive Populations

### New Measures Added:

- **Air Quality-Related Respiratory Disease:** This measure shows the rate of emergency department visits for respiratory diseases associated with air pollution. It uses 2023 Rapid Health Information Network (RHINO) syndromic surveillance data for emergency department visits related to asthma, chronic obstructive pulmonary disease (COPD), and other non-infectious lung conditions.



We added this measure because people with lung conditions are more sensitive to environmental exposures such as air pollution. Community members and Tribes also identified asthma as a key topic to include.

- **People with a Disability:** This measure shows the percentage of people who report having at least one disability, using 2019–2023 ACS 5-year estimates.



We included this measure because people with disabilities face significantly higher risks from climate change and environmental hazards – and are often left out of environmental justice efforts. Disability inclusion is essential to working toward climate and environmental justice.

### Updated Methods and Data:

- **Death from Cardiovascular Disease:** has been updated from 2015-2020 to 2020-2024, using data from the Washington State Department of Health Center for Health Statistics.
- **Low Birth Weight** now includes preterm births, in response to recommendations from the 2022 Washington State Institute for Public Policy (WSIPP) review of the EHD map. Preterm births were added because they are strongly affected by social and environmental stressors. Data has been updated from 2015-2019 to 2020-2024 using Washington State Department of Health Center for Health Statistics data.

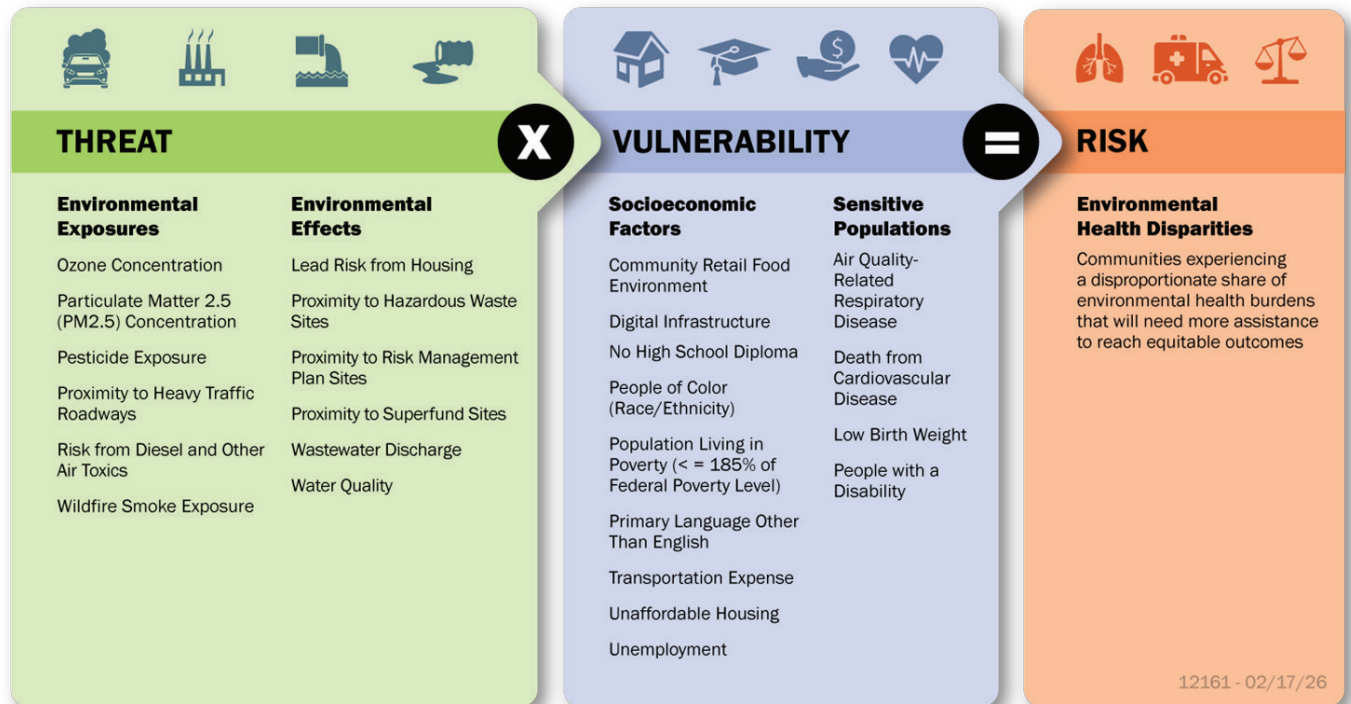


## Cumulative Impact Model for EHD Map

The EHD map uses a cumulative impact model, which reflects how biological, social, and environmental factors interact. Factors such as pollution, racism, colonialism, cost of living, and pre-existing health challenges can combine and make health outcomes worse.

The model recognizes that these factors do not exist in isolation – they are interconnected.

# Threat x Vulnerability = Risk



Pollution, cost of living, and other social conditions don't happen on their own. They combine with the ongoing impacts of racism, colonization, and other injustices to affect community health.

### For More Information

To learn more about the EHD Map update process and detailed methods, please refer to the [EHD Map Report](#).

### Contact Us

For questions or more information, email [EHDMap@doh.wa.gov](mailto:EHDMap@doh.wa.gov).



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