Environmental Justice in Site Cleanup

SW0

Northwest Remediation Conference

May 2, 2024

Sarah Wollwage
Clint Stanovsky

Toxics Cleanup Program

DEPARTMENT OF ECOLOGY
State of Washington

Slide 1

SW0 Insert my headshot

Wollwage, Sarah (ECY), 2024-04-24T21:51:12.005

Main Objectives

- Environmental Justice
- Public participation & tribal engagement
- Site hazard assessment & ranking
- Planning & prioritizing MTCA resources
- Site level decisions & procedures
- Independent vs. Ecology cleanups
- Underground storage tank (UST) release response

Today's Topics

Part 1 – Vulnerable Populations & Overburdened Communities

- Definitions
- EJ criteria

Part 2 – Site Prioritization

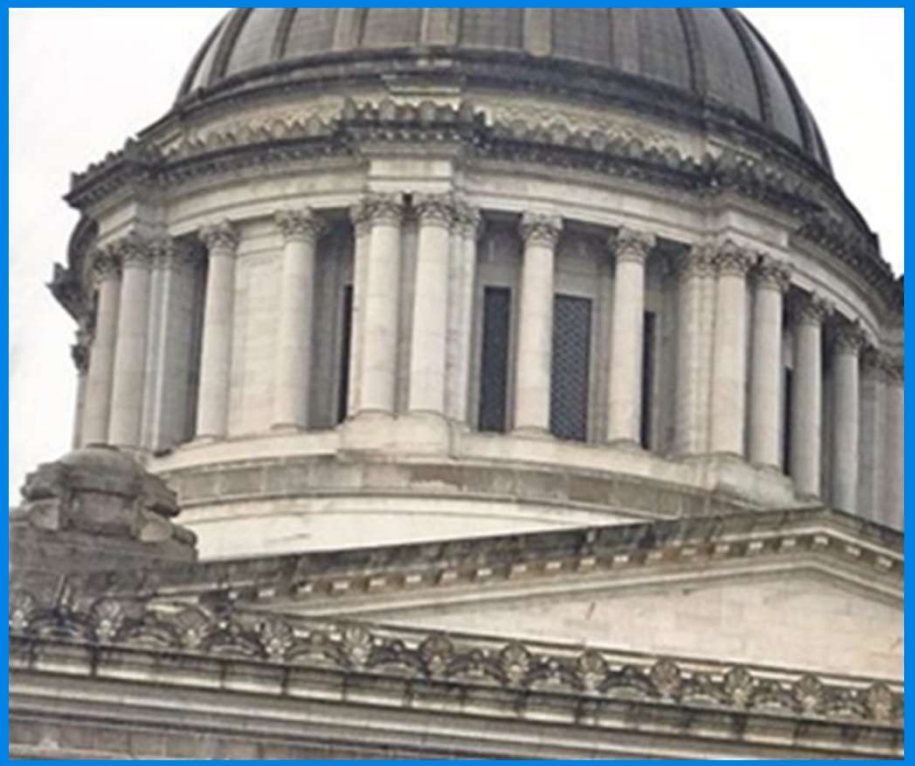
- Purpose
- Process

Part 3 – Site Cleanup Decisions

- Purpose & applicability
- Remedial investigations of site conditions
- Feasibility studies of cleanup action alternatives
- Selecting cleanup actions & documenting plans

Available Resources

All Sites			Formal Sites
Identifying Vulnerable Populations & Overburdened Communities	**Considering** Vulnerable Populations & Overburdened Communities	**Documenting** Vulnerable Populations & Overburdened Communities	**Engaging** Vulnerable Populations & Overburdened Communities
Implementation Memo No. 25 (published January 2024)	Implementation Memo No. 26 (May 2024)	Implementation Memo No. 26; RI, FS, CAP Checklists (May 2024 – July 2024)	**Future Workgroup:** Identify best practices based on experience & agency community engagement guidelines



Part 1

VULNERABLE POPULATIONS & OVERBURDENED COMMUNITIES

Terms and Definitions

Vulnerable population

Population group more likely to be at higher risk for poor health outcomes in response to environmental harm due to adverse socioeconomic and sensitivity factors

RCW 70A.02.010(14)

Overburdened community

Geographic area where vulnerable populations face combined, multiple environmental harms and health impacts

RCW 70A.020.010(11)

https://app.leg.wa.gov/RCW/default.aspx?cite=70A.02.010

Approved EJ Criteria

Census tract meets 1 of 3 criteria

	Criteria	Source
1.	Environmental Health Disparities (EHD) Rank = 9 or 10	DOH's EHD Map
2.	Demographic Index ≥ 80th state percentile	EPA's EJScreen
3.	Supplemental Demographic Index ≥ 80th state percentile	EPA's EJScreen

https://www.epa.gov/ejscreen
https://doh.wa.gov/data-and-statistical-reports/washington-tracking-network-wtn/washington-environmental-health-disparities-map

Part 2

SITE PRIORITIZATION

Purpose of Site Prioritization

- **Address** past environmental injustice
- **Prioritize** cleanup & funding of contaminated sites
- **Consider** cumulative environmental health burdens from sources other than the site

Site Prioritization Process

Collect

Initial Investigation

- Identify census tract where release occurred
- Collect socioeconomic data for tracts → EHD Map & EJScreen
- Apply EJ criteria to each tract

§310

Track

SHARP Assessment

- Affected census tract(s)
- Socioeconomic data for affected census tract(s)
- EJFlag = any affected tract meets at least one EJ criteria
- Confidence level

§320

Site Prioritization Process cont.

Prioritize

Strategic Plan

- Develop strategic plan for cleaning up sites
- Prioritize sites threatening VPs or OCs
- Develop goals and strategies
- Identify funding needs

§340

Check & Adjust

Assess performance

- Develop performance metrics
- Track & report performance

§340

Part 3

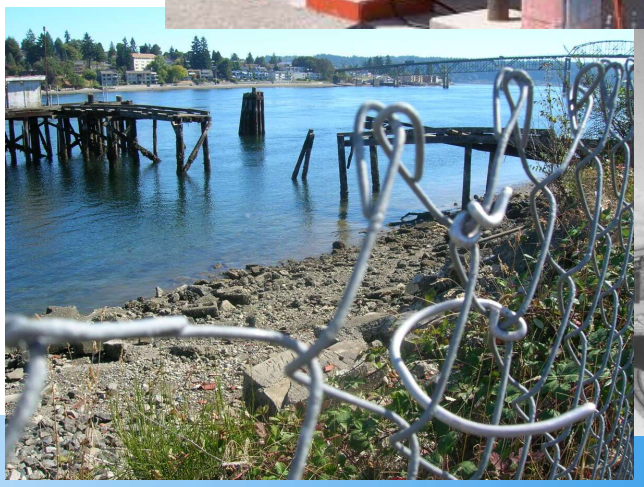
SITE CLEANUP DECISIONS

Purpose

- **prevent** environmental injustice when conducting cleanups
- Promote **accountability** & **transparency** in site cleanup decisions
- **Don't** consider cumulative environmental health burdens from sources other than the site

Applicability – ALL SITES!

- Independent
- Ecology-supervised under order or decree
- Ecology-conducted



What involve

- **Apply existing** MTCA requirements
- **Improve** accountability & transparency **by**:
  - Taking hard look
  - Showing work

Remedial Investigation

Step 1: Identify scope

- Assemble & evaluate existing info
- Identify what other info needed

Step 2: Develop work plan

- Consider what info needed

Remedial Investigation

Step 3: Conduct investigation

- Identify potentially exposed population
- Determine whether includes likely VP or OC
- Identify land & other resources uses of site
- Identify impact of exposure based on those uses

WAC 173-340-350(5)(c) → (6), particularly (6)(g) and (h)

Remedial Investigation

Step 4: Complete CSM

- reflects potential exposures of VPs & OCs

Step 5: Develop cleanup levels

- Consider reasonable maximum exposure of VPs & OCs

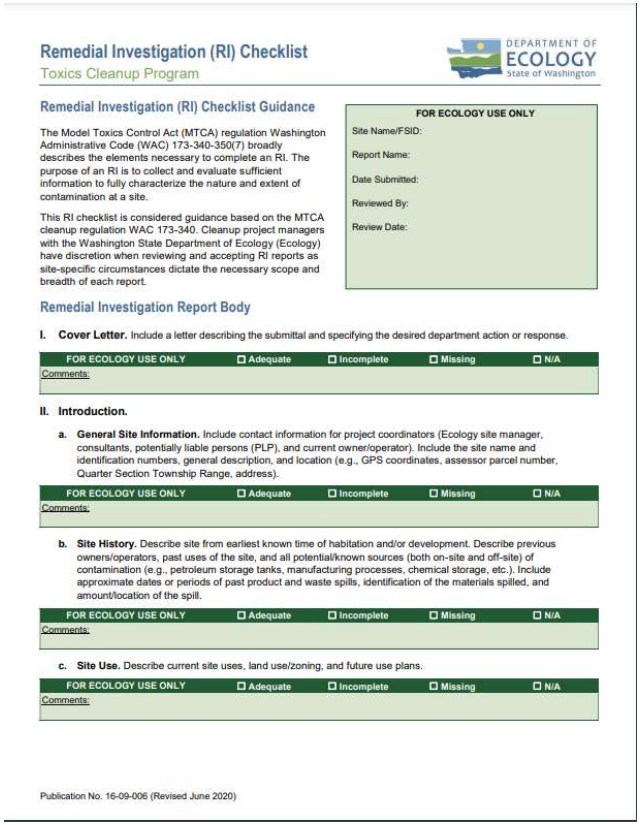
Step 6: Decide whether need FS

- Evaluate use of model remedy

Remedial Investigation

Step 7: Report results

- provide level of detail commensurate with complexity of site
- Document considerations during each step of investigation …
- Whether likely VP or OC, & basis for determination



Remedial Investigation (RI) Checklist

Toxics Cleanup Program

DEPARTMENT OF ECOLOGY State of Washington

Remedial Investigation (RI) Checklist Guidance

The Model Toxics Control Act (MTCA) regulation Washington Administrative Code (WAC) 173-340-350(7) broadly describes the elements necessary to complete an RI. The purpose of an RI is to collect and evaluate sufficient information to fully characterize the nature and extent of contamination at a site.

This RI checklist is considered guidance based on the MTCA cleanup regulation WAC 173-340. Cleanup project managers with the Washington State Department of Ecology (Ecology) have discretion when reviewing and accepting RI reports as site-specific circumstances dictate the necessary scope and breadth of each report.

FOR ECOLOGY USE ONLY

Site Name/FSID:

Report Name:

Date Submitted:

Reviewed By:

Review Date:

Remedial Investigation Report Body

I. **Cover Letter.** Include a letter describing the submittal and specifying the desired department action or response.

FOR ECOLOGY USE ONLY ☐ Adequate ☐ Incomplete ☐ Missing ☐ N/A

Comments:

II. **Introduction.**

a. **General Site Information.** Include contact information for project coordinators (Ecology site manager, consultants, potentially liable persons (PLP), and current owner/operator). Include the site name and identification numbers, general description, and location (e.g., GPS coordinates, assessor parcel number, Quarter Section Township Range, address).

FOR ECOLOGY USE ONLY ☐ Adequate ☐ Incomplete ☐ Missing ☐ N/A

Comments:

b. **Site History.** Describe site from earliest known time of habitation and/or development. Describe previous owners/operators, past uses of the site, and all potential/known sources (both on-site and off-site) of contamination (e.g., petroleum storage tanks, manufacturing processes, chemical storage, etc.). Include approximate dates or periods of past product and waste spills, identification of the materials spilled, and amount/location of the spill.

FOR ECOLOGY USE ONLY ☐ Adequate ☐ Incomplete ☐ Missing ☐ N/A

Comments:

c. **Site Use.** Describe current site uses, land use/zoning, and future use plans.

FOR ECOLOGY USE ONLY ☐ Adequate ☐ Incomplete ☐ Missing ☐ N/A

Comments:

Publication No. 16-09-006 (Revised June 2020)

Remedial Investigation

Step 7: Report results

- Use of site resources & impact of potential exposure
- How CSM reflects potential exposure
- How cleanup levels protective given potential exposure
- How considered population when evaluated any model remedy

Feasibility Study

Step 1: Identify cleanup goals

- Identify goals affecting population

Step 2: Identify alternatives

- Consider threats to population when identifying alternatives

Step 3: Screen alternatives

- Consider impacts on populatior

WAC 173-340-351(6)(a) through (c)

Feasibility Study

Step 4: Evaluate alternatives

- Protect human health & environment
- Whether may rely primarily on dilution or dispersion
- Provide reasonable restoration time frame
- Use permanent solutions to maximum extent practicable

Feasibility Study

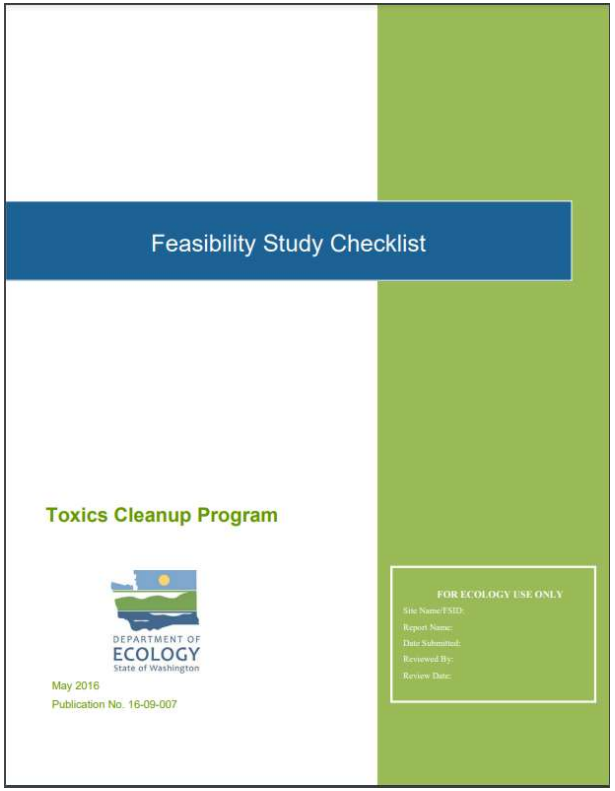
Step 5: Select preferred remedy

- Consider impacts of site & cleanup alternatives on population identified during evaluation in Step 4

Feasibility Study

Step 6: Report results

- Document considerations during each step of feasibility study



WAC 173-340-351(6)(f)

Cleanup Action Plan

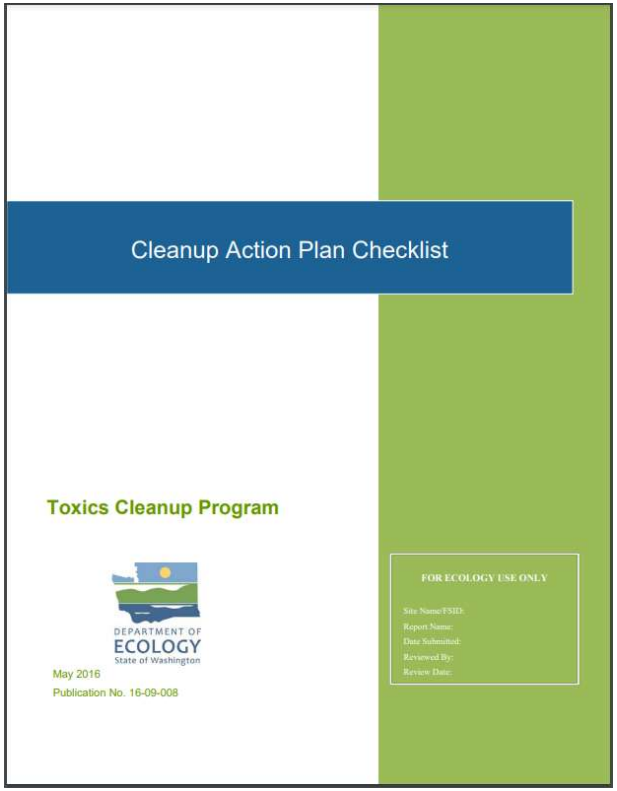
Step 1: Select cleanup action

- If considered action in FS, summarize
- If not considered action in FS, follow FS steps to:
  - Consider impacts on population
  - Summarize consideration of those impacts

Cleanup Action Plan

Step 2: Develop plan

- Consider impacts on population
- Document consideration

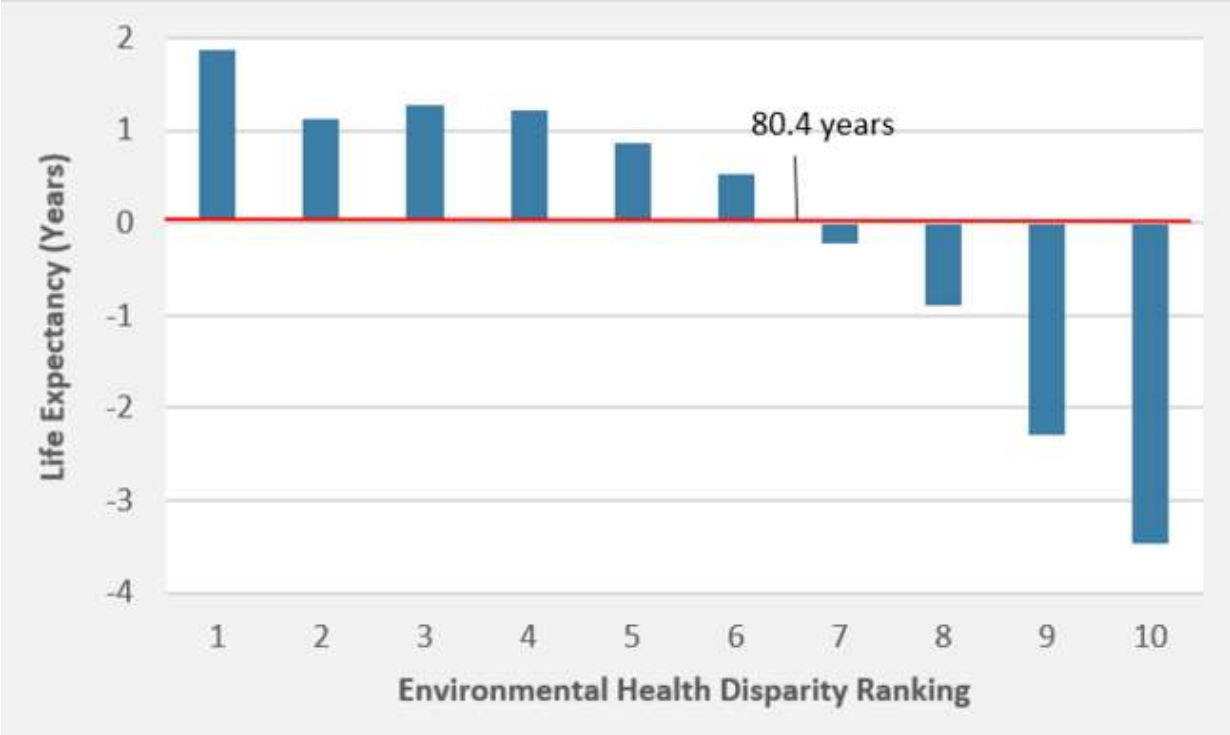


WAC 173-340-380(5)(c)

Panel Discussion

WA Environmental Health Disparities Map

Living in areas with more environmental hazards and population vulnerabilities is associated with a shorter lifespan.



https://doh.wa.gov/data-and-statistical-reports/washington-tracking-network-wtn/washington-environmental-health-disparities-map

EJScreen Community Report

This report provides environmental and socioeconomic information for user-defined a
and combines that data into environmental justice and supplemental indexes.

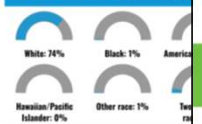
Chelan County, WA

Tract: 53007960100
Population: 2,153
Area in square miles: 121

A3 Landscape

COMMUNITY INFO

BREAKDOWN B



BREAKDOWN E

LIMITED ENGLISH SPEAK

Notes: Numbers may not sum to totals due to rounding.
Source: U.S. Census Bureau, American Community Survey
comes from the Centers for Disease Control.

LANGUAGES SPOKEN AT HOME

LANGUAGE	PERCENT
English	88%
Spanish	6%
German or other West Germanic	2%
Other Indo-European	2%
Vietnamese	1%
Other Asian and Pacific Island	1%
Total Non-English	12%

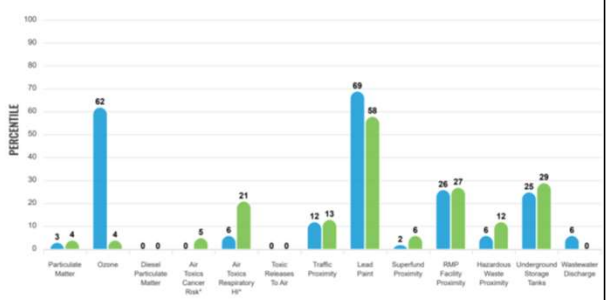
Environmental Justice & Supplemental Indexes

The environmental justice and supplemental indexes are a combination of environmental and socioeconomic information. There are thirteen EJ indexes and supplemental indexes in EJScreen reflecting the 13 environmental indicators. The indexes for a selected area are compared to those for all other locations in the state or nation. For calculation details on the EJ and supplemental indexes, please visit the EJScreen website.

EJ INDEXES

The EJ indexes help users screen for potential EJ concerns. To do this, the EJ index combines data on low income and people of color populations with a single environmental indicator.

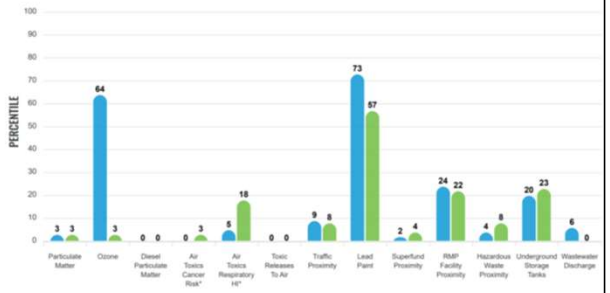
EJ INDEXES FOR THE SELECTED LOCATION



SUPPLEMENTAL INDEXES

The supplemental indexes offer a different perspective on community-level vulnerability. They combine data on percent low-income, percent linguistically school education, percent unemployed, and low life expectancy with a single environmental indicator.

SUPPLEMENTAL INDEXES FOR THE SELECTED LOCATION



These percentiles provide perspective on how the selected block group or buffer area comp

Report for Tract: 53007960100

EJScreen Environmental and Socioeconomic Indicators Data

SELECTED VARIABLES	VALUE	STATE AVERAGE	PERCENTILE IN STATE	USA AVERAGE	PERCENTILE IN USA
POLLUTION AND SOURCES					
Particulate Matter (µg/m³)	4.78	7.02	2	8.08	2
Ozone (ppb)	50.3	49.8	56	61.6	2
Diesel Particulate Matter (µg/m³)	0.0173	0.355	0	0.261	0
Air Toxics Cancer Risk* (lifetime risk per million)	10	27	0	25	1
Air Toxics Respiratory HI*	0.2	0.39	1	0.31	4
Toxic Releases to Air	0	1,800	0	4,600	0
Traffic Proximity (daily traffic count/distance to road)	2.4	190	7	210	7
Lead Paint (% Pre-1960 Housing)	0.3	0.23	70	0.3	58
Superfund Proximity (site count/km distance)	0.011	0.18	1	0.13	4
RMP Facility Proximity (facility count/km distance)	0.066	0.4	16	0.43	16
Hazardous Waste Proximity (facility count/km distance)	0.041	1.6	4	1.9	7
Underground Storage Tanks (count/km²)	0.019	6.3	20	3.9	23
Wastewater Discharge (toxicity-weighted concentration/m distance)	2.9E-09	0.024	4	22	1
SOCIOECONOMIC INDICATORS					
Demographic Index	27%	28%	54	35%	45
Supplemental Demographic Index	12%	12%	61	14%	47
People of Color	26%	32%	46	39%	45
Low Income	27%	24%	64	31%	50
Unemployment Rate	3%	5%	39	6%	40
Limited English Speaking Households	0%	4%	52	5%	57
Less Than High School Education	13%	8%	79	12%	66
Under Age 5	2%	6%	23	6%	26
Over Age 64	22%	16%	75	17%	73
Low Life Expectancy	18%	18%	46	20%	35

Air Toxics Data Update, which is EPA's screening-level analysis of potential air toxics-related cancer risk and noncancer respiratory hazards for the 50 states and Puerto Rico. It provides a more comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. Cancer risks and hazard indices from the Air Toxics Data Update are reported to one significant figure and any additional significant figures here are due to rounding. More information on the Air Toxics Data Update can be found at: https://www.epa.gov/ringhazair/air-toxics-data-update.

Sites reporting to EPA within defined area:

Superfund	0
Hazardous Waste, Treatment, Storage, and Disposal Facilities	0
Water Dischargers	18
Air Pollution	0
Brownfields	0
Toxic Release Inventory	0

Other community features within defined area:

Schools	4
Hospitals	0
Places of Worship	3

Other environmental data:

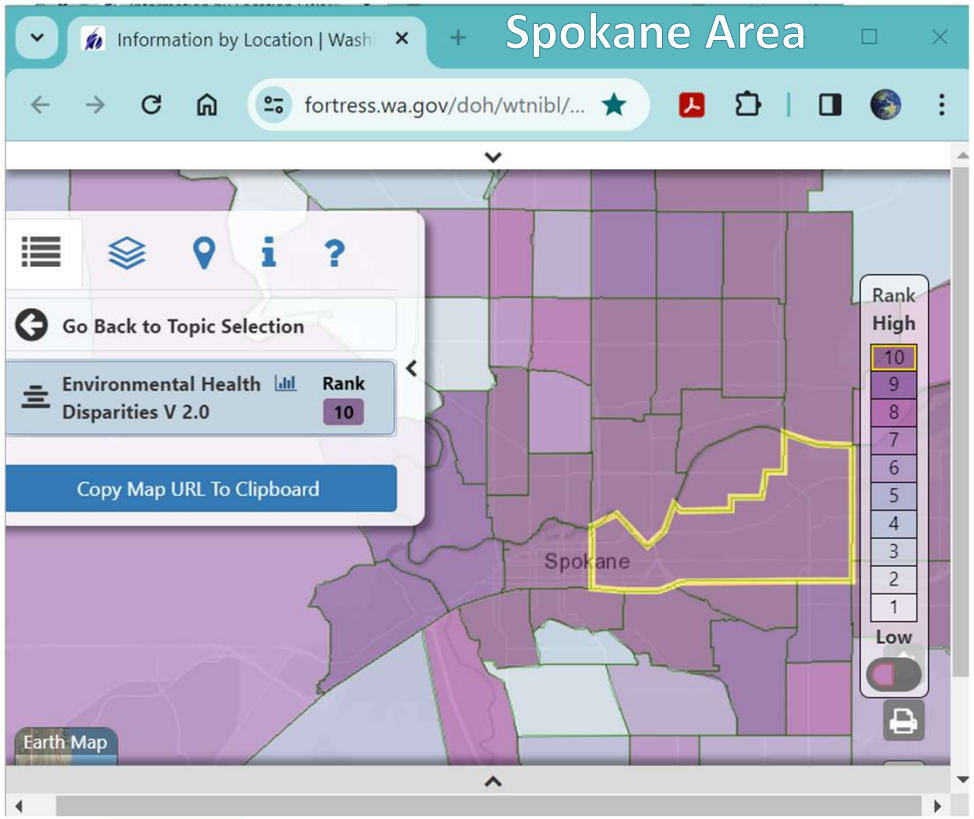
Air Non-attainment	No
Impaired Waters	Yes

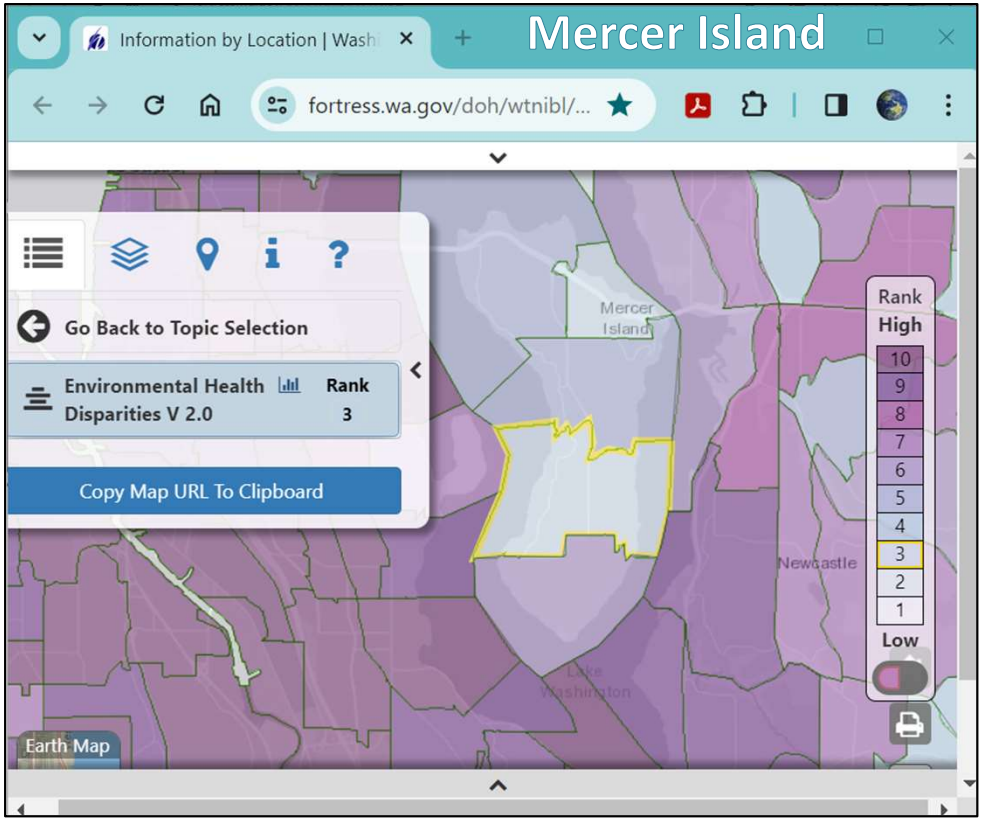
Selected location contains American Indian Reservation Lands*	No
Selected location contains a "Justice40 (CEJST)" disadvantaged community	No
Selected location contains an EPA IRA disadvantaged community	No

Report for Tract: 53007960100

WA Environmental Health Disparities Map

Example EHD ranks for two census tracts





https://fortress.wa.gov/doh/wtnibl/WTNIBL/

SHARP Confidence Levels

Confidence	Who exposed?	Include VP or OC?	Sufficient for …
Low	Initial investigation (incomplete RI)	Socioeconomic data only	Site prioritization
Medium	Complete RI	Socioeconomic data only	Site cleanup
High	Complete RI	Site-specific survey	Site cleanup, if required by Ecology

U.S. EPA's EJScreen Indexes

Demographic Index

Average of the following two socioeconomic indicators:

- % Low income
- % People of color

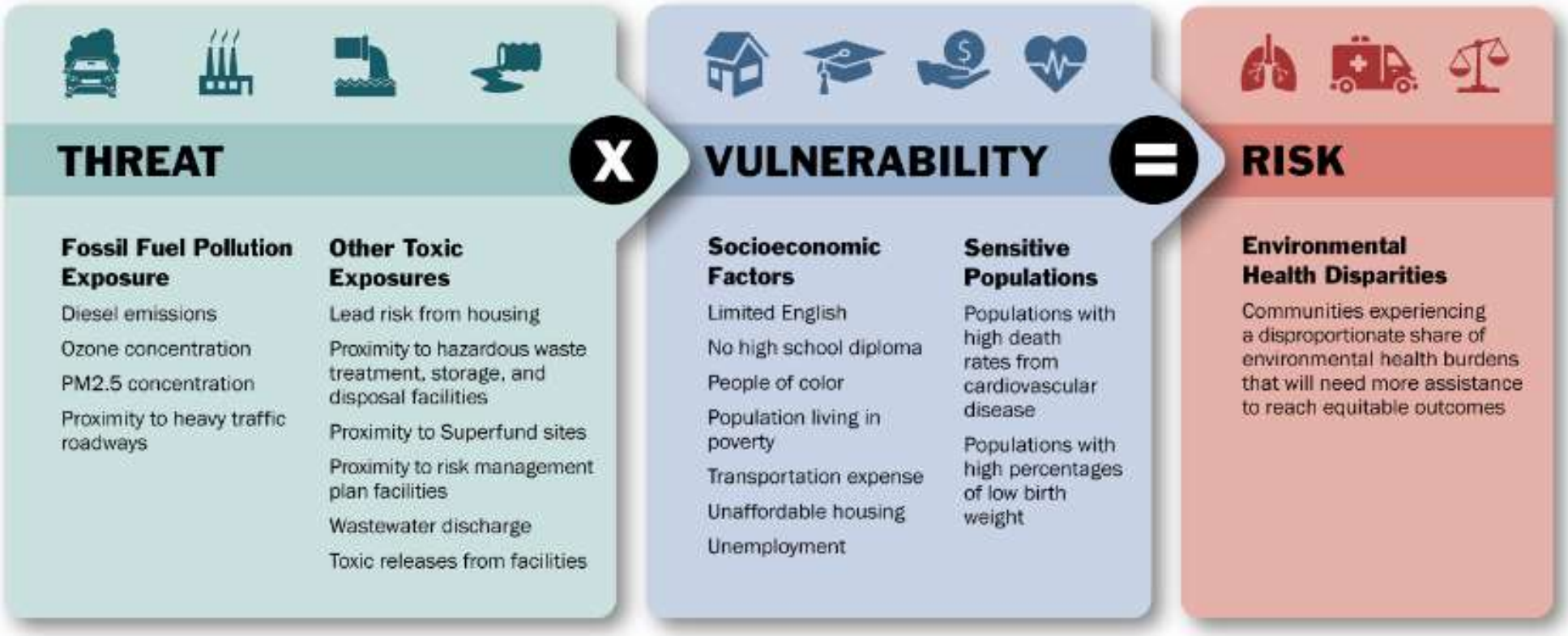
Supplemental Demographic Index

Average of the following five socioeconomic indicators:

- % Low income
- % Unemployment
- % Lack of English proficiency
- % Less than high school education
- % Low life expectancy

WA Environmental Health Disparities Map

Ranks for each census tract based on 19 indicators



https://doh.wa.gov/data-and-statistical-reports/washington-tracking-network-wtn/washington-environmental-health-disparities-map

What not involve

- Not set a different level of protection
- Not conduct a different or additional risk assessment
- Not consider cumulative environmental health burdens from other sources

Remedial Investigation

- Step 1: Identify scope
- Step 2: Develop work plan
- Step 3: Conduct investigation
- Step 4: Complete CSM
- Step 5: Develop cleanup levels
- Step 6: Decide whether need FS
- Step 7: Report results