Rulemaking for Air Quality in Overburdened Communities: Introduction to Emission Sources

Chapter 173-448 WAC
March 6, 2025

DEPARTMENT OF ECOLOGY
State of Washington

Welcome

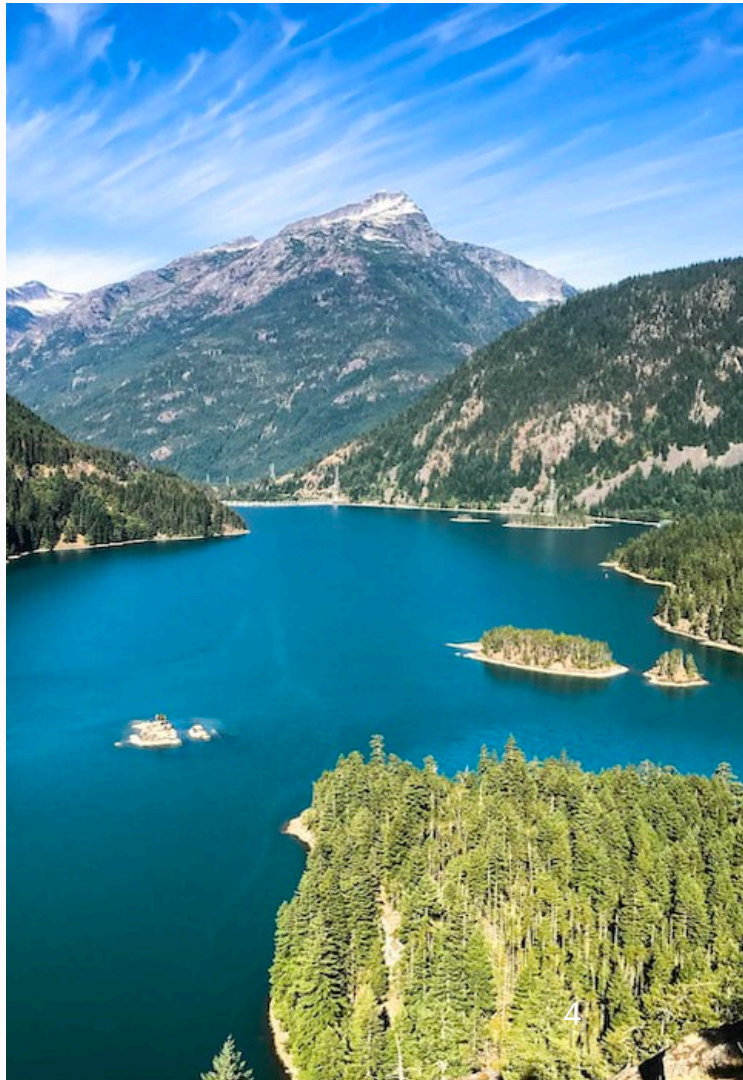
Let us know…

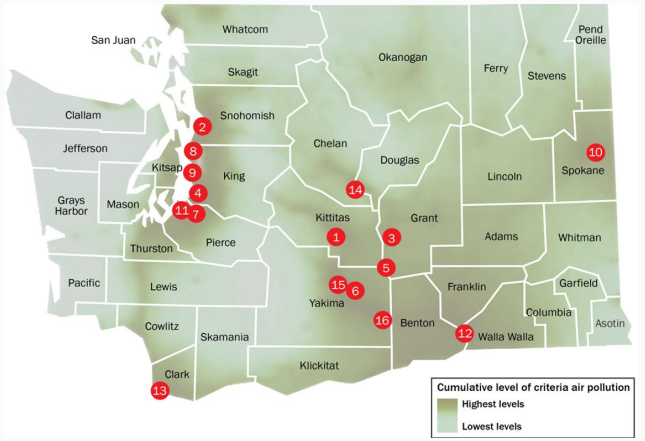
How did you hear about this meeting?

Improving Air Quality in Overburdened Communities Highly Impacted by Air Pollution

Ecology is engaging with 16 overburdened communities and interested tribes to improve air quality

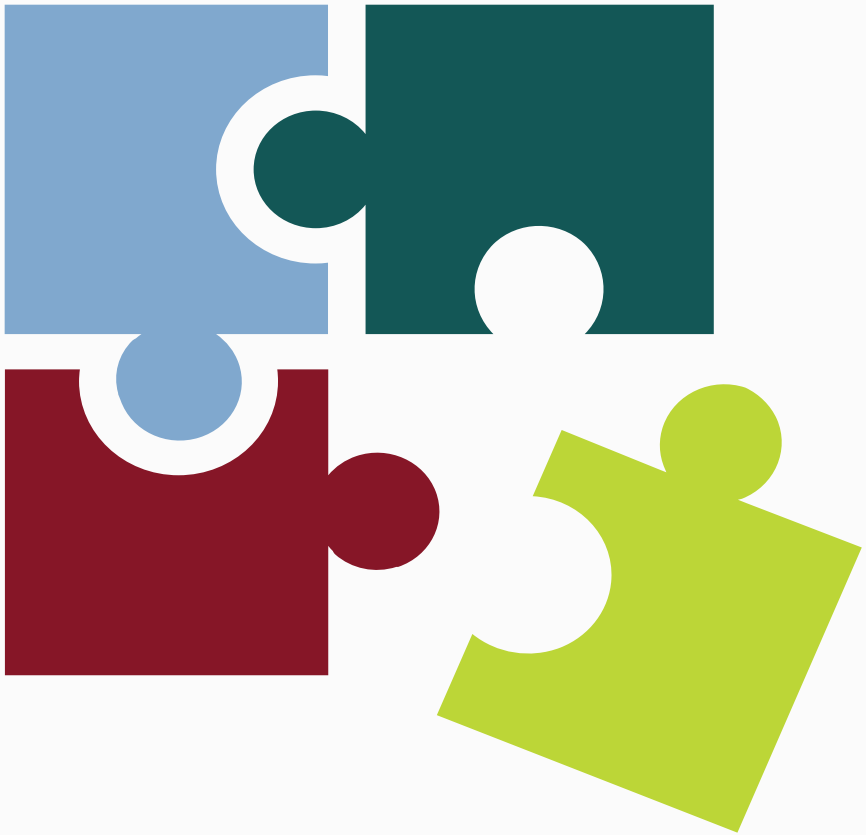
- Expanding air monitoring
  - Includes $10M for high-resolution study
- Adopting strategies to reduce air pollution
  - $10M community grant program in 2024
  - Rulemaking in 2024-26 about more protective air quality standards
- Evaluating and reporting air pollution, greenhouse gases, and health data every two years
  - First report released in December 2023





Multiple efforts go into improving air quality

Rulemaking Considerations Related to Improving Air Quality in Overburdened Communities Highly Impacted by Air Pollution



- Identifying sources
- Establishing targets
- Developing emission reduction strategies
- Determining options for stricter standards or emission limits

Rule Development Process

Public workshops discuss initial concepts

Preliminary draft(s) – inviting informal comments

Draft rule (proposal) public comment period and public hearing

Rulemaking Timeline

Future topics and dates are tentative.

Ecology Staff

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Erin Torrone
Facilitator

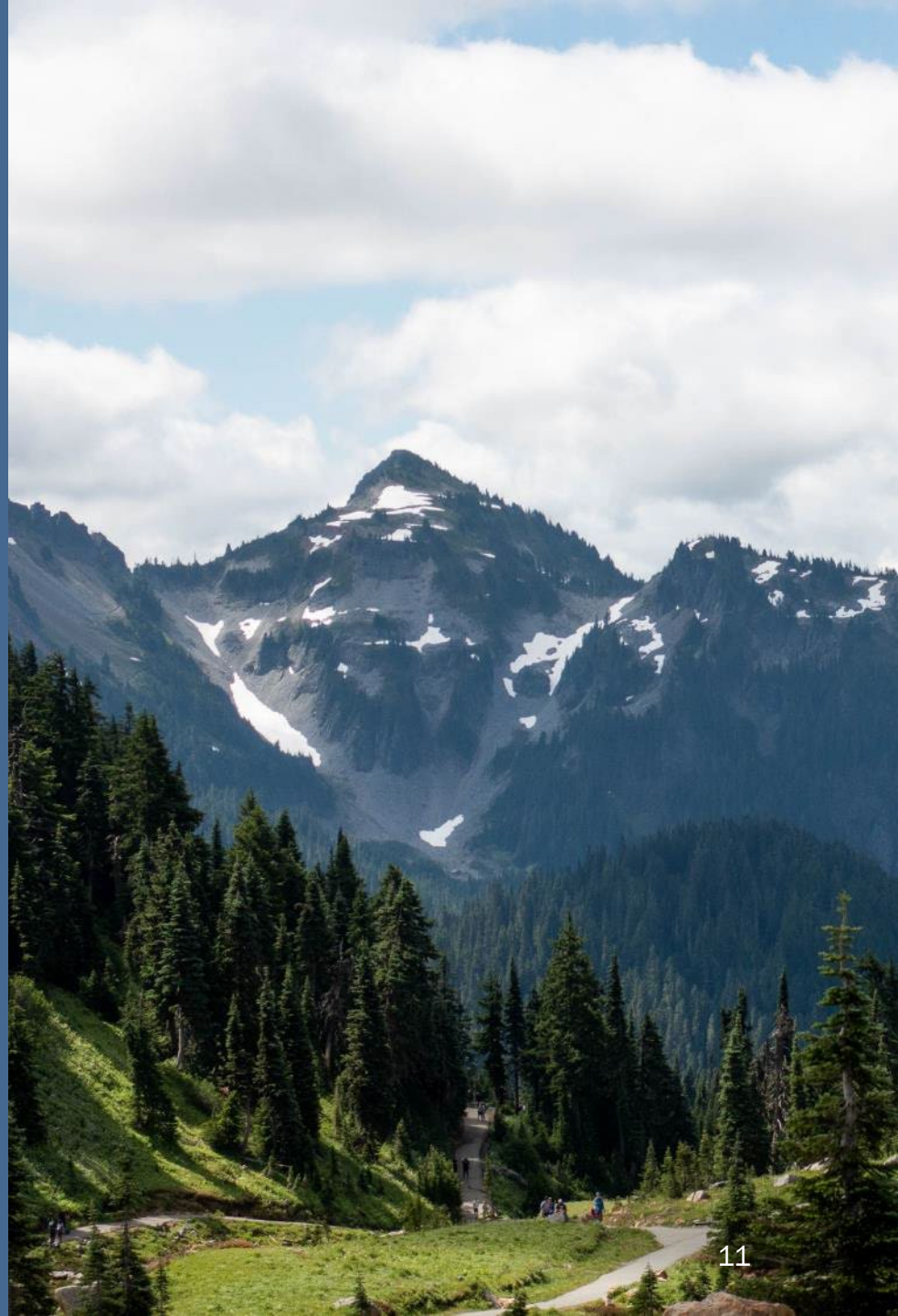
Jane Pennington
Technical Host

Agenda

- December 2024 meeting discussion summary
- Scope of pollutants
- Air quality and emissions data sources
- Scope of emission sources
- Q&A

December Meeting

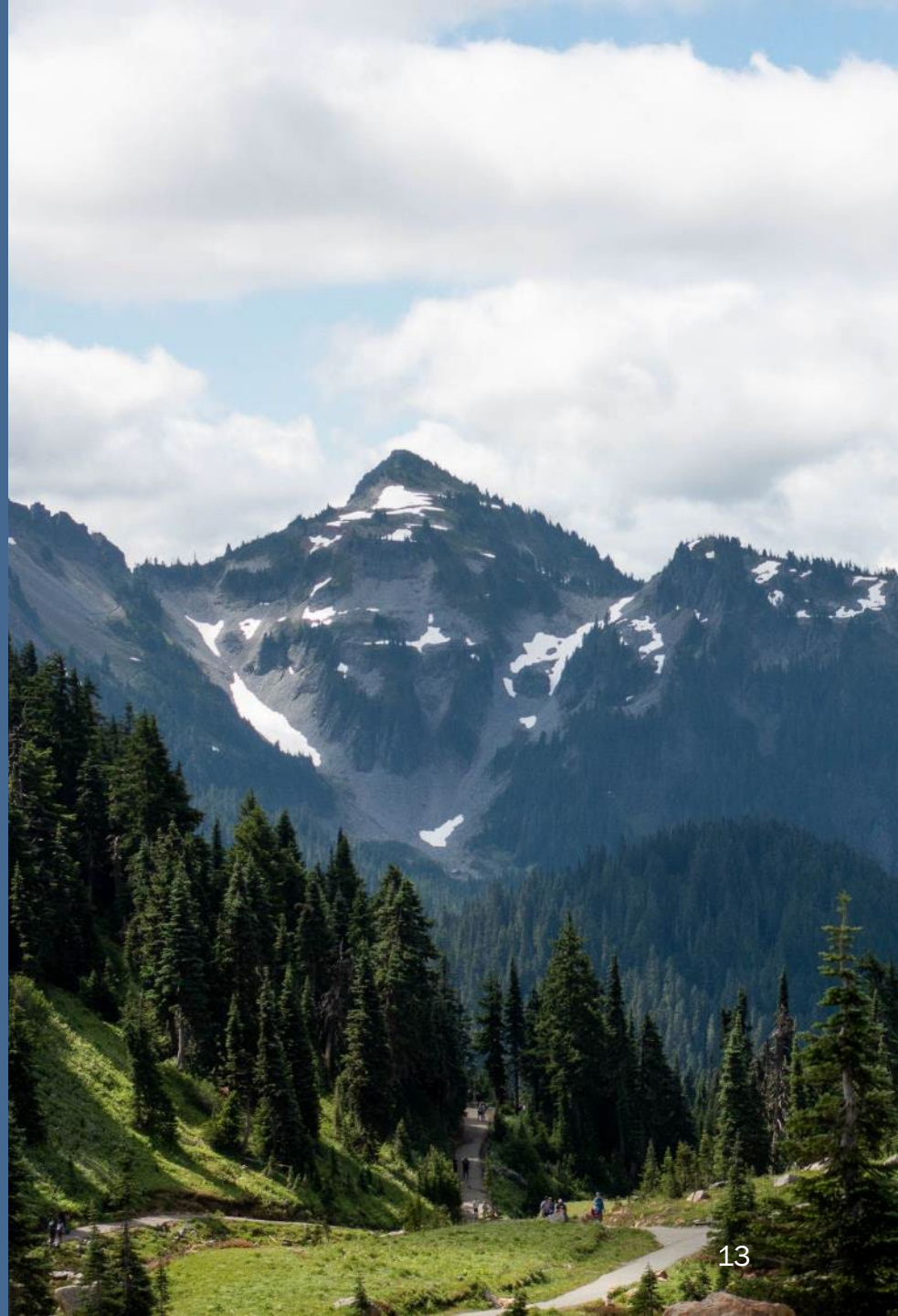
Discussion summary



What We Heard

- Applicability
- Emission standards
- Emission reductions
- Emission sources
- Suggestions
- Challenges
- Monitoring
- Public input

Scope of Pollutants



Scope of Pollutants

"Adopt along with local air pollution control authorities, stricter air quality standards, emission standards or emissions limitations on **criteria air pollutants**, consistent with the authority of the department provided under **RCW 70A.15.3000,** and may consider alternative mitigation actions that would reduce criteria pollution by similar amounts…"

RCW 70A.65.020(2)(b)(iv)

Criteria Air Pollutants

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Particle Pollution

Tiny solids or liquid drops floating in the air.

Sources:

- Wood stoves and fireplaces
- Outdoor burning
- Dust from construction and agriculture
- Wildfires

Ground-level Ozone

Contributes to smog. Forms when some air pollutants react with each other in sunlight and hot weather.

Sources:

- Cars
- Industry

Carbon Monoxide

Odorless, tasteless, colorless gas from combustion.

Sources:

- Cars
- Wood stoves and fireplaces
- Outdoor burning
- Industrial combustion

Sulfur Dioxide

Forms when fuel that contains sulfur is burned.

Sources:

- Industrial facilities (like fossil fuel power plants, pulp mills)
- Ships and locomotives

Nitrogen Dioxide

Produced when fuel burns. Highest levels are near roads.

Sources:

- Cars
- Ships and locomotives
- Industrial power plants

Lead

Lead was an air quality problem. Today, all of Washington meets the air quality standard for lead.

Source:

- Metal and ore processing facilities

Criteria air pollutants

How Criteria Air Pollutants are Regulated

Criteria air pollutants are listed and regulated under section 108 of the federal Clean Air Act.

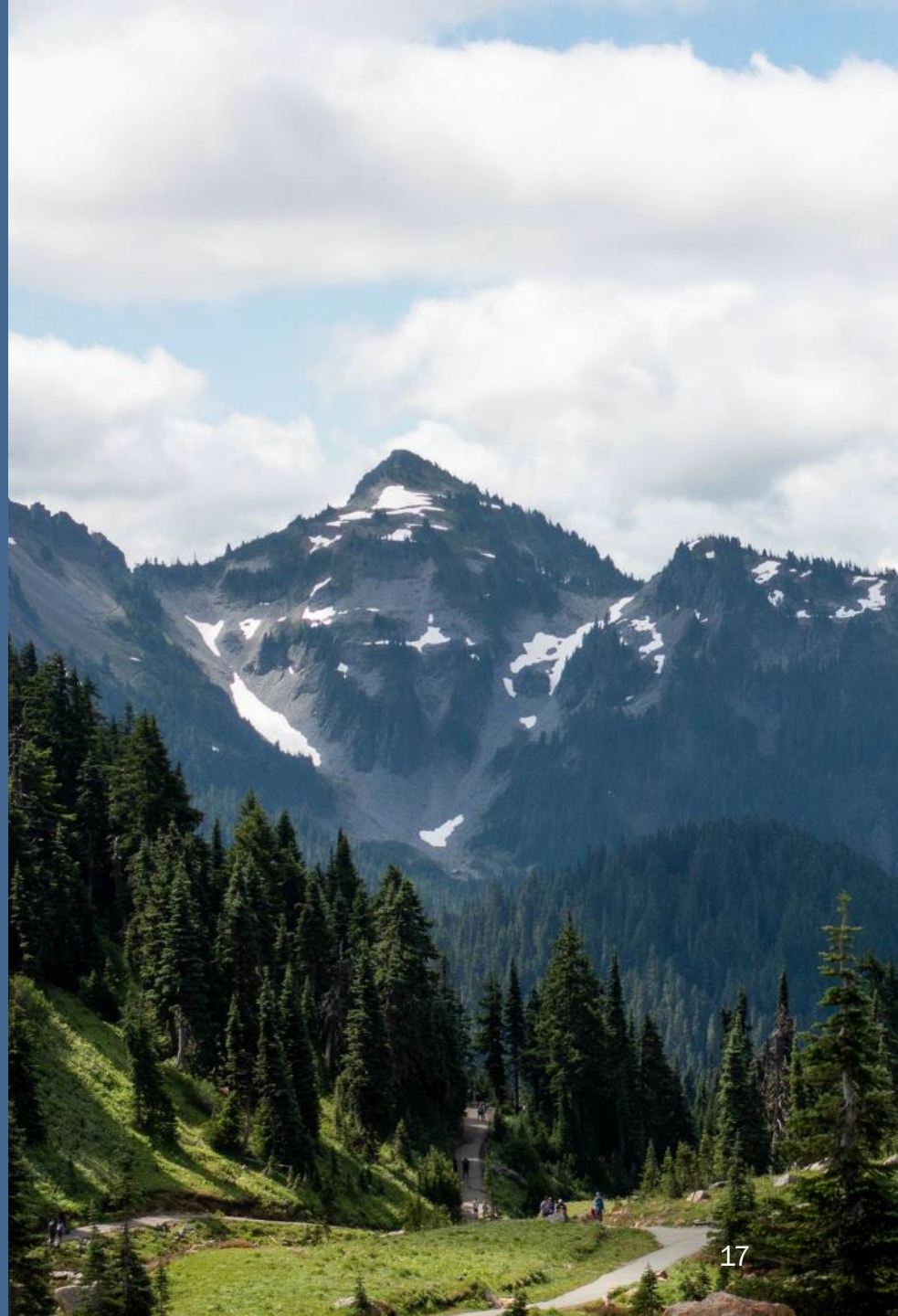
EPA sets National Ambient Air Quality Standards (NAAQS) for these pollutants.

Ecology works to meet the NAAQS and can set stricter air quality standards in Washington.

Washington is currently in attainment of the NAAQS.

NAAQS

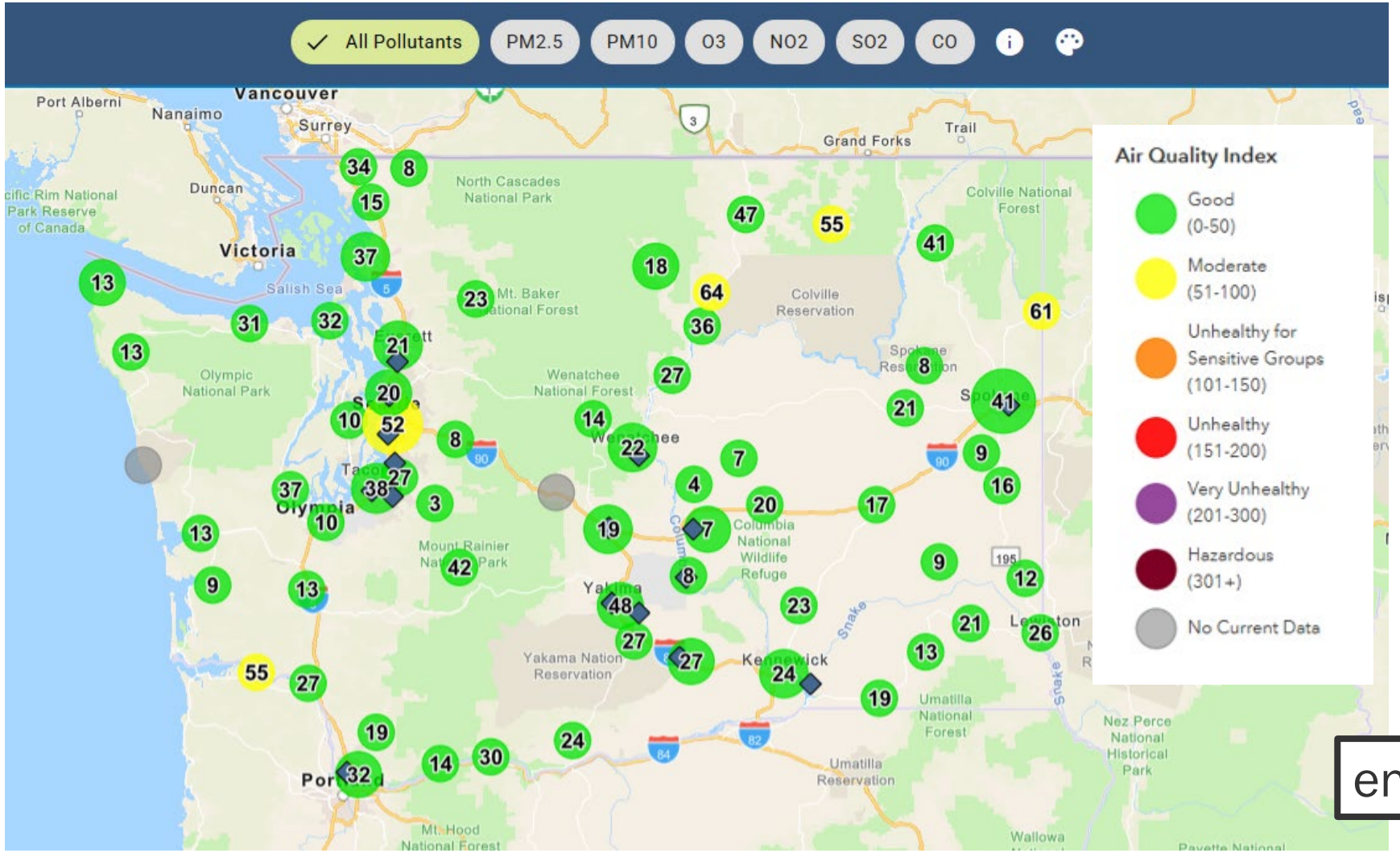
Air Quality and Emissions Data Sources



Air Quality Monitoring

Air quality monitoring involves measuring pollutant concentrations in the air.

Washington's Air Monitoring Network



enviwa.ecology.wa.gov

Expanding Washington's Air Monitoring Network

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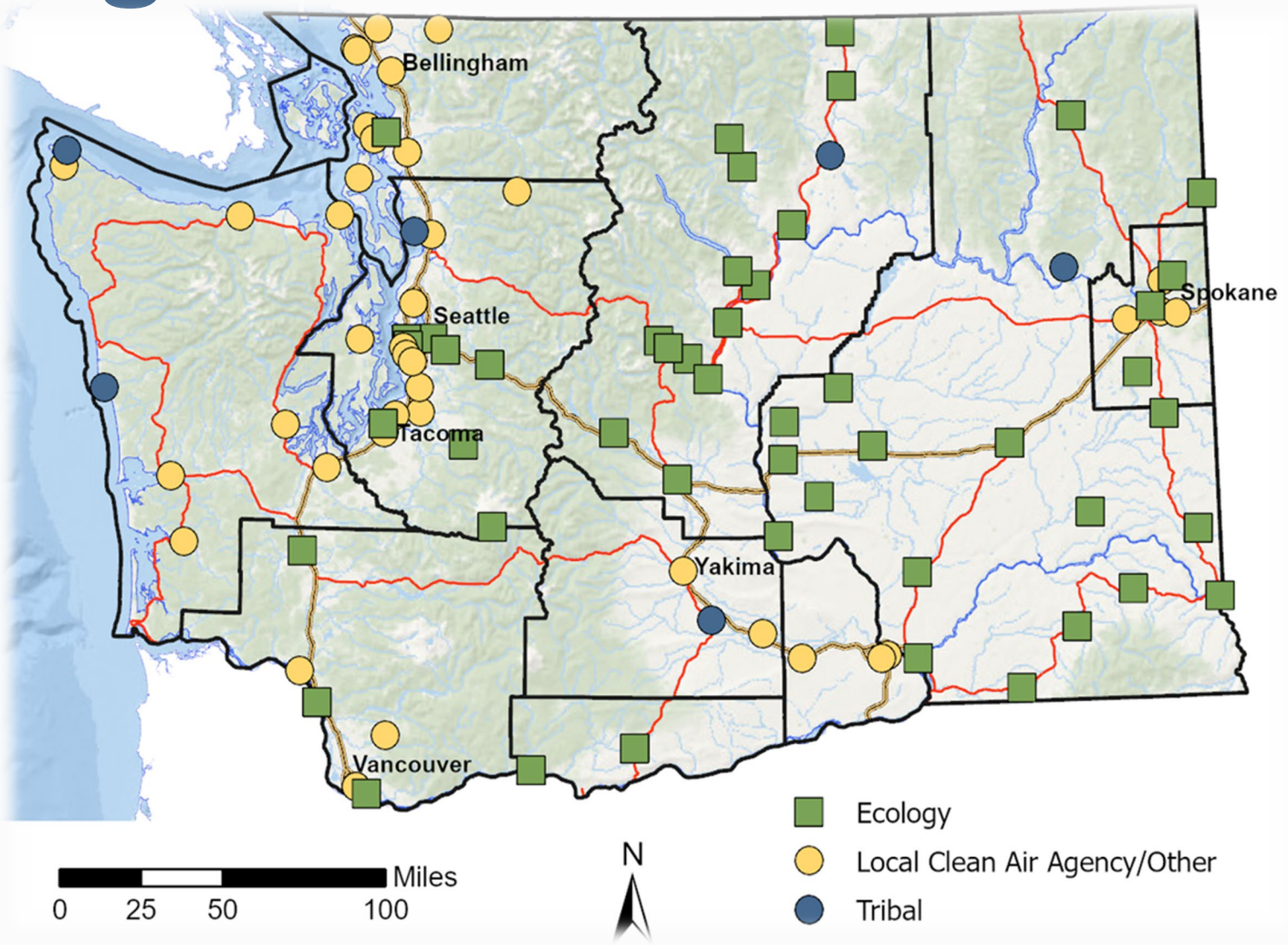
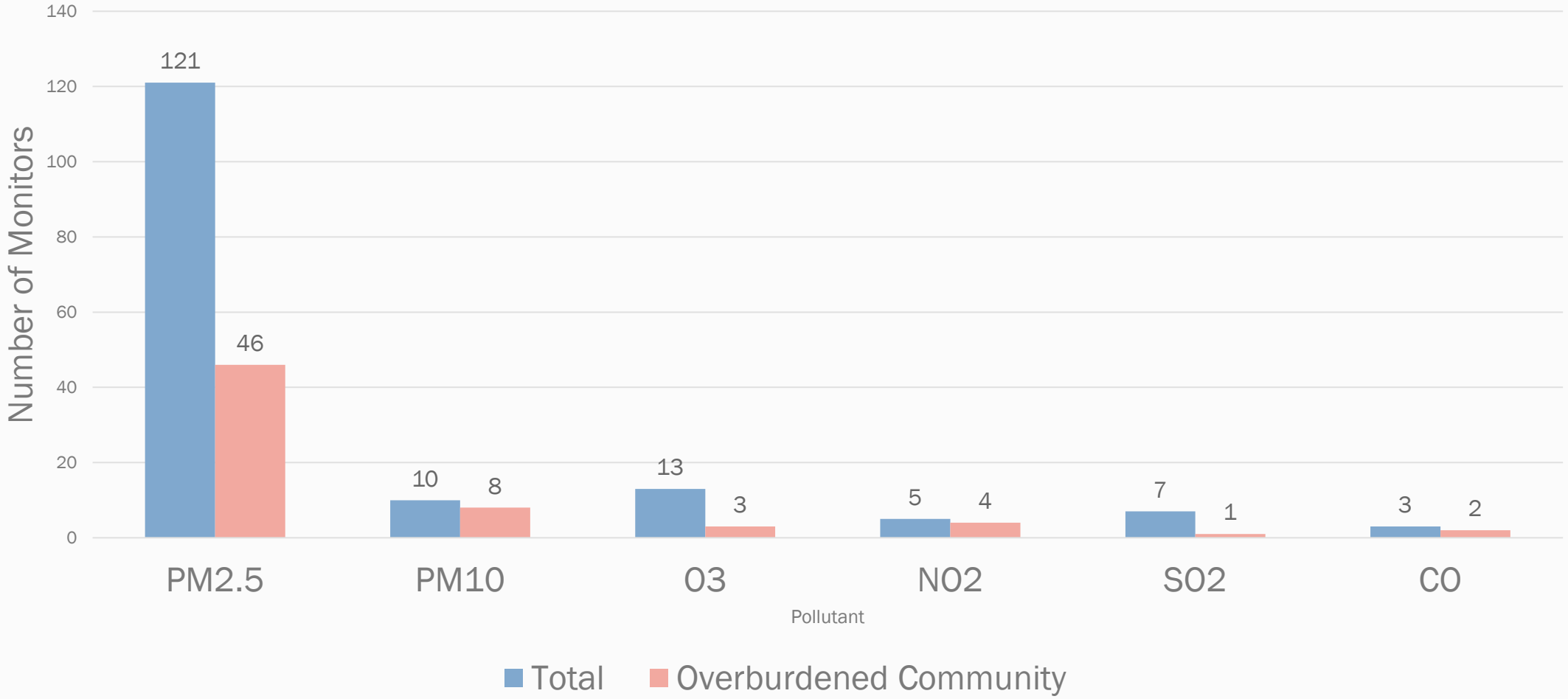
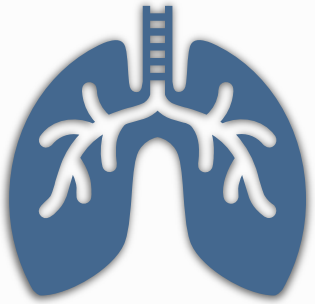
- Ecology and our partners monitor criteria air pollution at **121 monitoring sites.**
- We are adding **new sites and monitors** in all 16 overburdened communities.



Monitoring Coverage by Pollutant

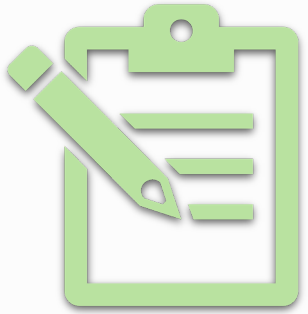


Monitoring Data Appropriate Uses

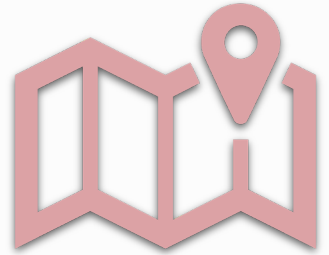


Assess air quality impacts on human and environmental health

Inform policies to reduce air pollution, and track trends over time



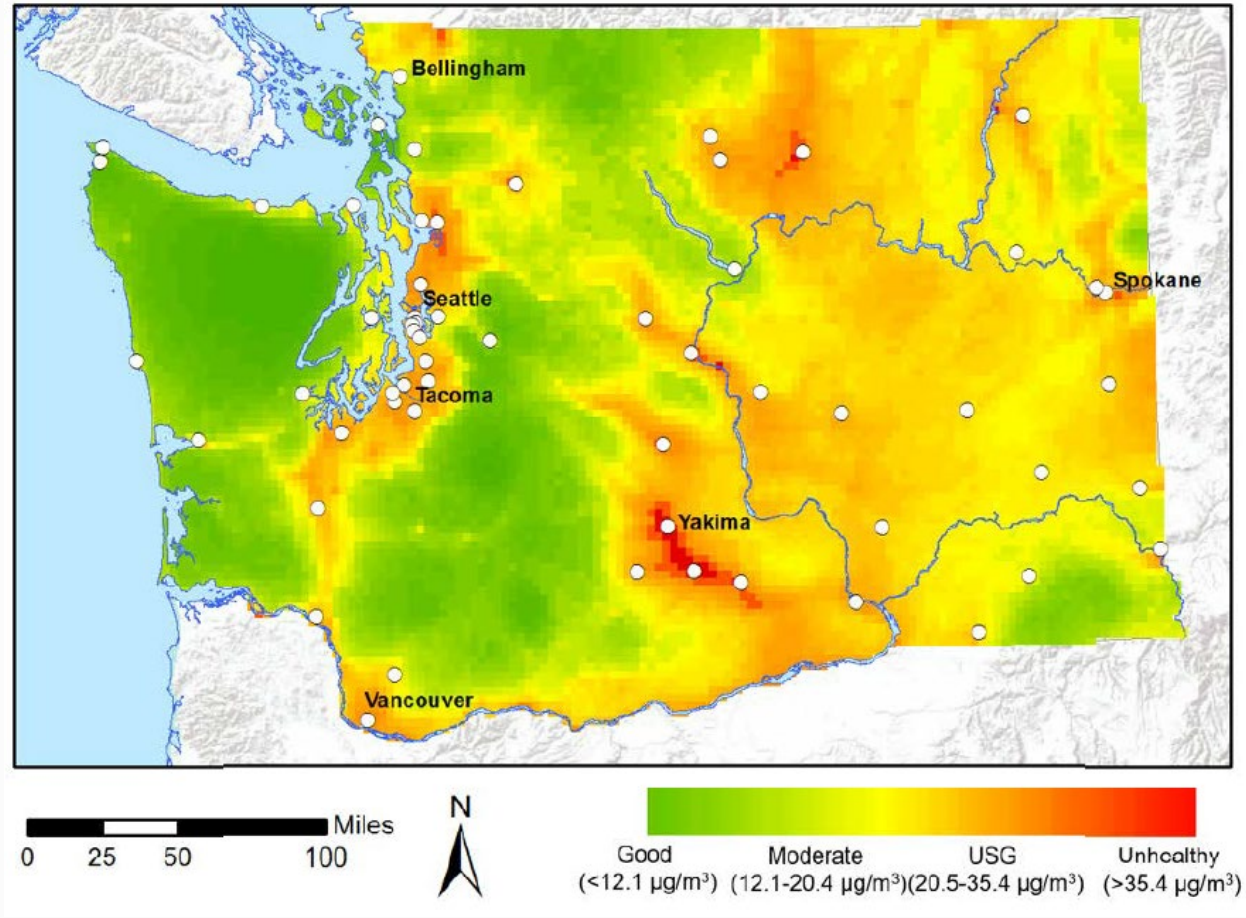
Monitoring data to track compliance of the NAAQS



Map monitoring data and model output

Air Quality Monitoring Example Output

$PM_{2.5}$ map monitoring data + model output



Air Quality Monitoring Example Output

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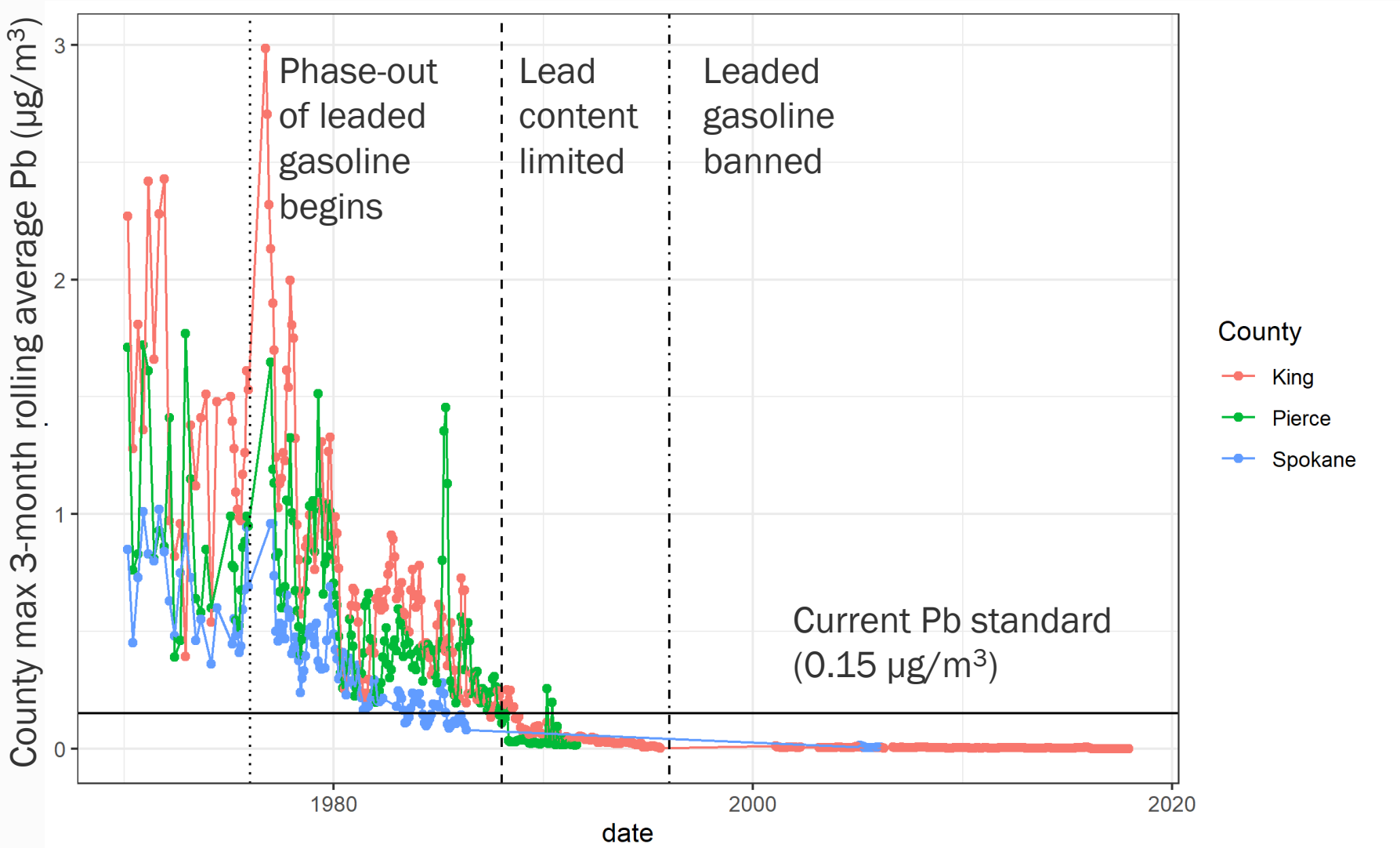
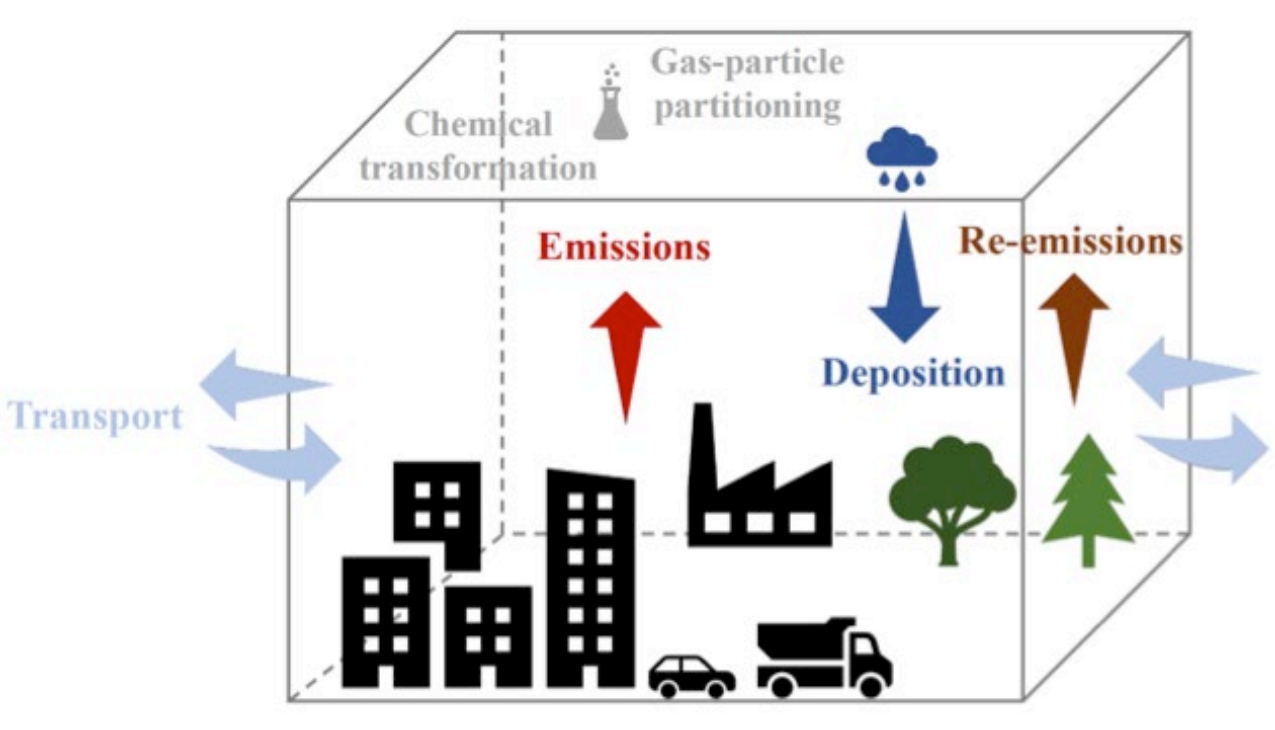
Measuring the effectiveness of lead policy



Air Emissions Inventory



An emissions inventory estimates the amount of pollution that comes directly from a source each year.
It does not consider transport or chemistry.

Comprehensive Emissions Inventory

National Emissions Inventory (NEI)

- Coordinated between EPA and states
- 3-year process to estimate all source categories

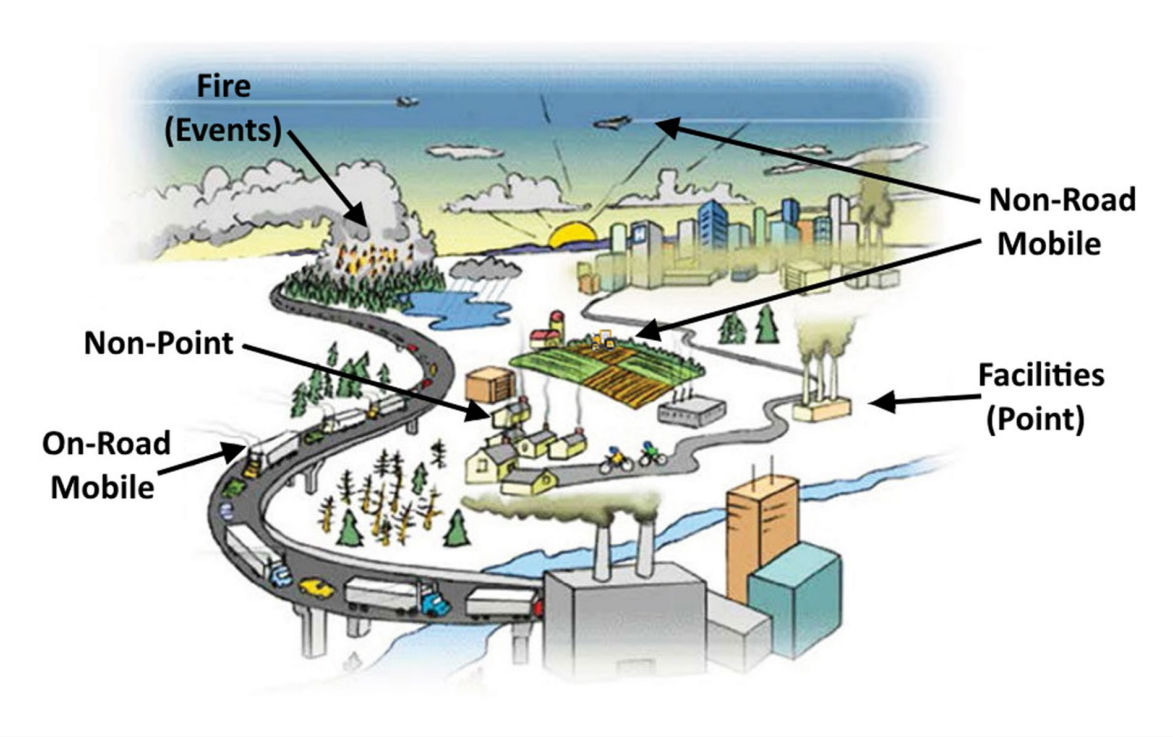


Illustration showing source categories that are covered by emissions inventories. Biogenic sources are also included.

Point Source Air Emissions Inventory

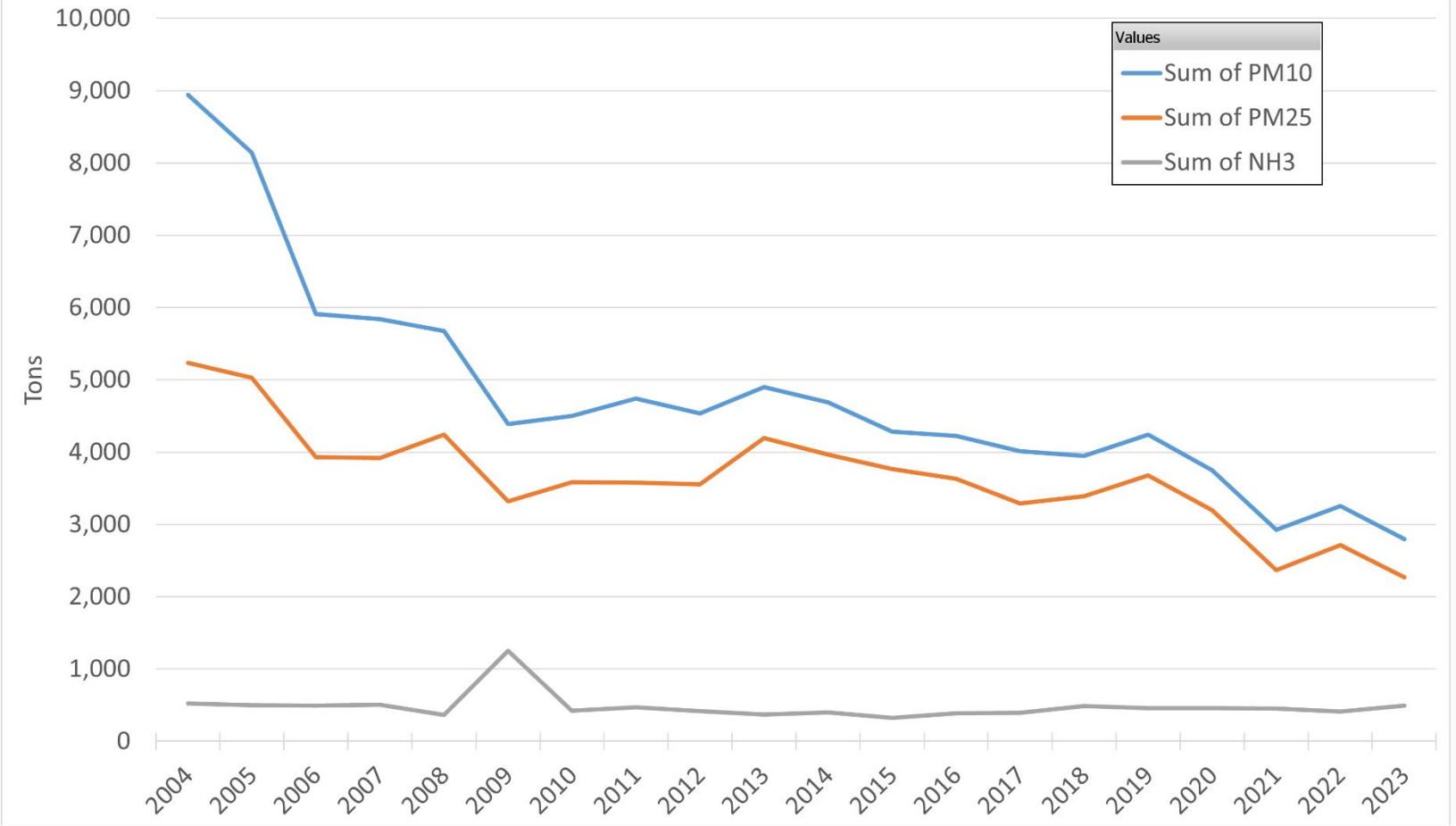
- Permitted sources emissions inventory
  - Emissions reported annually by Title V sources
  - Included in the NEI
- Registered sources emissions or activity
  - Sometimes only reported every 3rd year
  - Not reported to the NEI

Emissions Inventory Data Uses

- Air quality planning and rulemaking
- Calculating fees for permitted sources
- Screening which levels of sources to focus on
- Mapping sources of pollution
- Air quality modeling

Emissions Inventory Example Output

Total Reported Emissions (PM and NH_3) All Major Sources



Monitoring

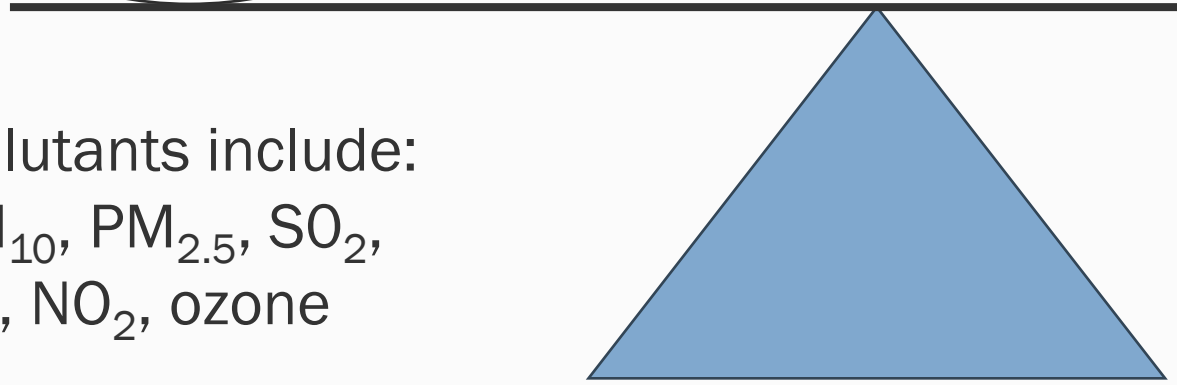
Measuring pollutant concentrations (example: parts/million) in the air

Pollutants include: PM_{10}, $PM_{2.5}$, SO_2, CO, NO_2, ozone

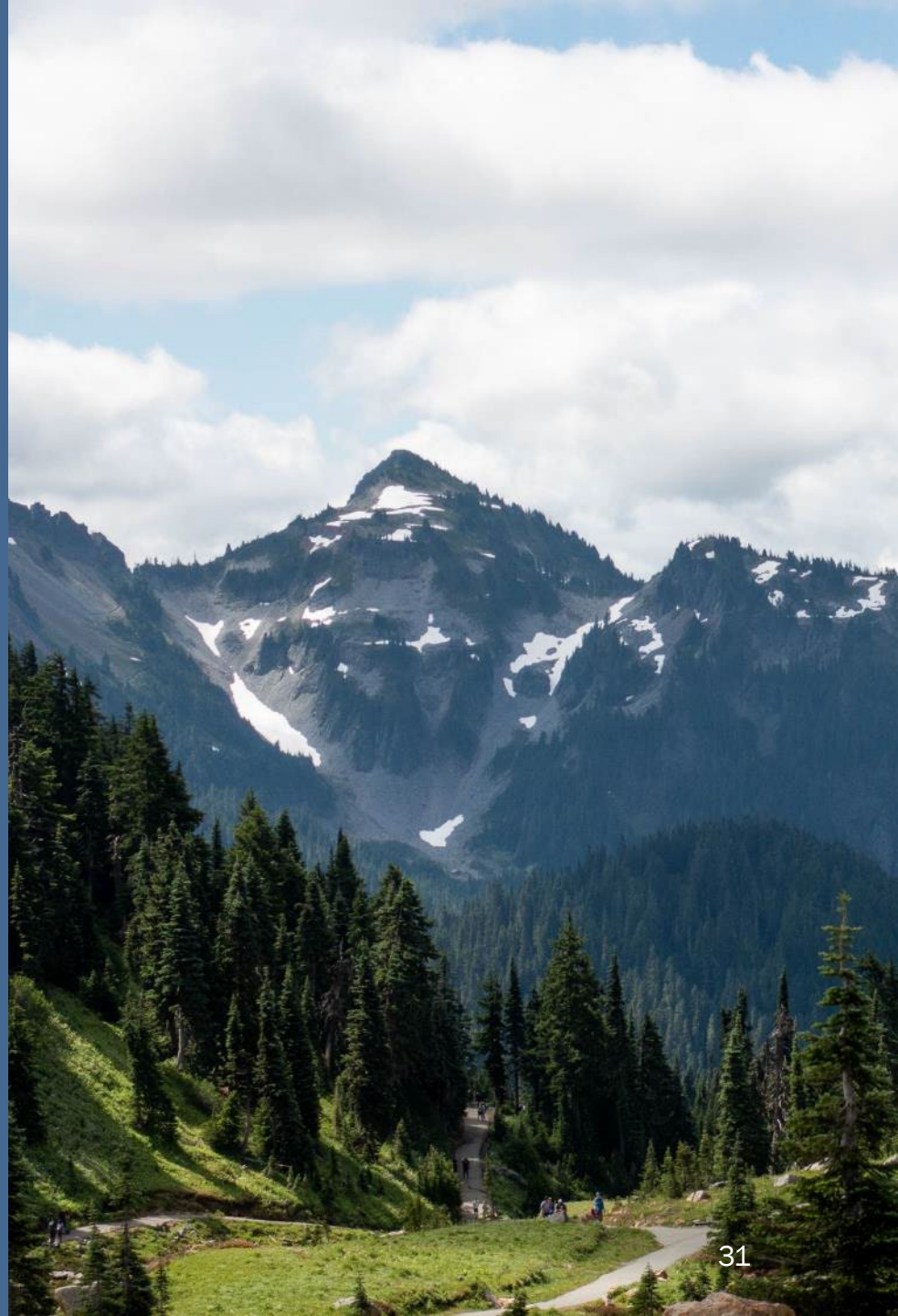
Emissions Inventory

Estimating pollutant emissions (example: tons/year) from a source

Pollutants include: PM_{10}, $PM_{2.5}$, SO_2, CO, NOx, VOC, NH_3



Scope of Emission Sources



Using Air Quality and Emissions Data

Determine greatest contributors and list high priority significant emitters.

RCW 70A.65.020(1)(c)(i)

Track sources with emissions that are staying the same or increasing.

RCW 70A.65.020 (2)(b)(ii)

Notify sources about enforceable orders.

RCW 70A.65.020 (2)(b)(v)

Emissions reductions need to be proportional to a permitted sources contribution.

RCW 70A.65.020 (2)(c)

Spokane County $PM_{2.5}$ Emissions Inventory (2020)

Category	$PM_{2.5}$ (Tons)
Residential wood combustion	1,146
Road dust	844
Construction dust	799
Agricultural dust	504
Commercial cooking	331
Residential outdoor burning	131
On-road mobile vehicles	126
Institutional/commercial / industrial fuel combustion (non-point)	125
Major Sources (point)	**111**
Wildfires	106
Non-road mobile vehicles (not elsewhere classified)	93
Prescribed burning	78
Livestock dust	68
Locomotives	32
Miscellaneous	27
Agricultural burning	22
Aircraft landing/takeoff	8
Recreational boats	5
Residential fuel use (non-wood)	4

Total primary $PM_{2.5}$ emissions in Spokane County = **4,560 tons**

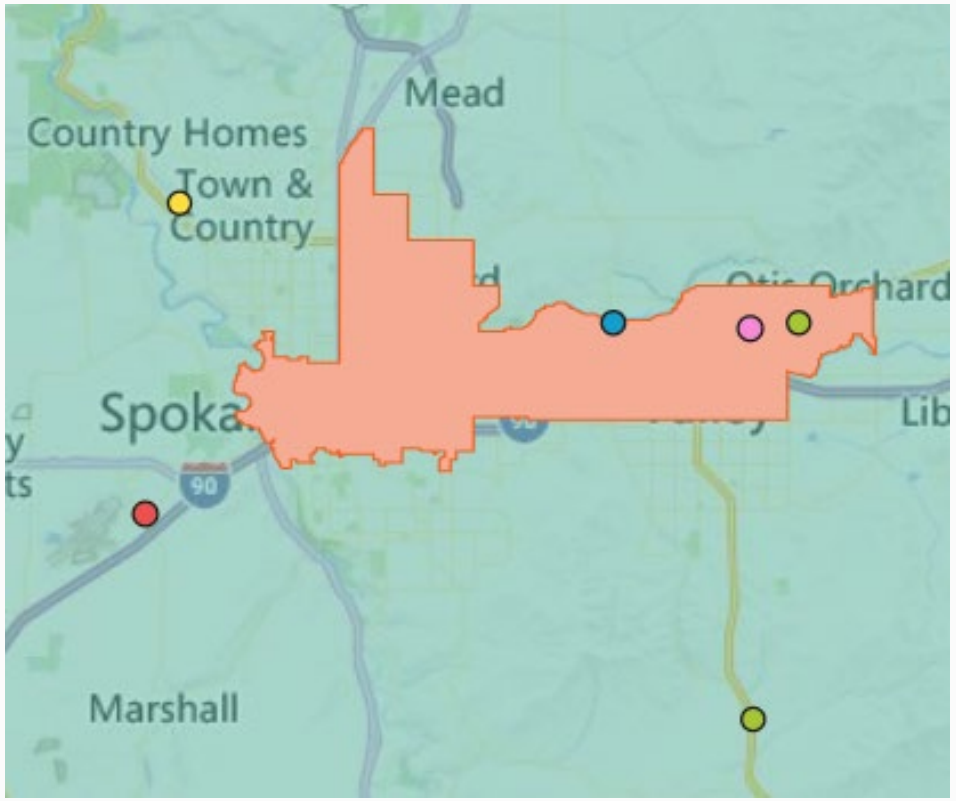
Major Sources $PM_{2.5}$ Emissions

Major Source	City	2020 (Tons)
Inland Empire Paper	Spokane	52
Kaiser Trentwood	Spokane	36
Mutual Materials	Mica	6
Gas Transmission Northwest Station 6	Rosalia	4
Waste To Energy	Spokane	5

Non-Major Registered Sources $PM_{2.5}$ Emissions

- 355 of 600 in Spokane County report PM emissions
- 200 tons total of PM_{10} (but mostly dust/coarse, not $PM_{2.5}$)
- 9 sources emitting more than 5 tons of PM_{10} per year

Spokane and Spokane Valley Overburdened Community with Major Point Sources



Spokane and Spokane Valley Overburdened Community

Total $PM_{2.5}$ Emissions (all sources) in Spokane County = **4,560 Tons**

Major Sources $PM_{2.5}$ Emissions

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Scope of Emission Sources Continued

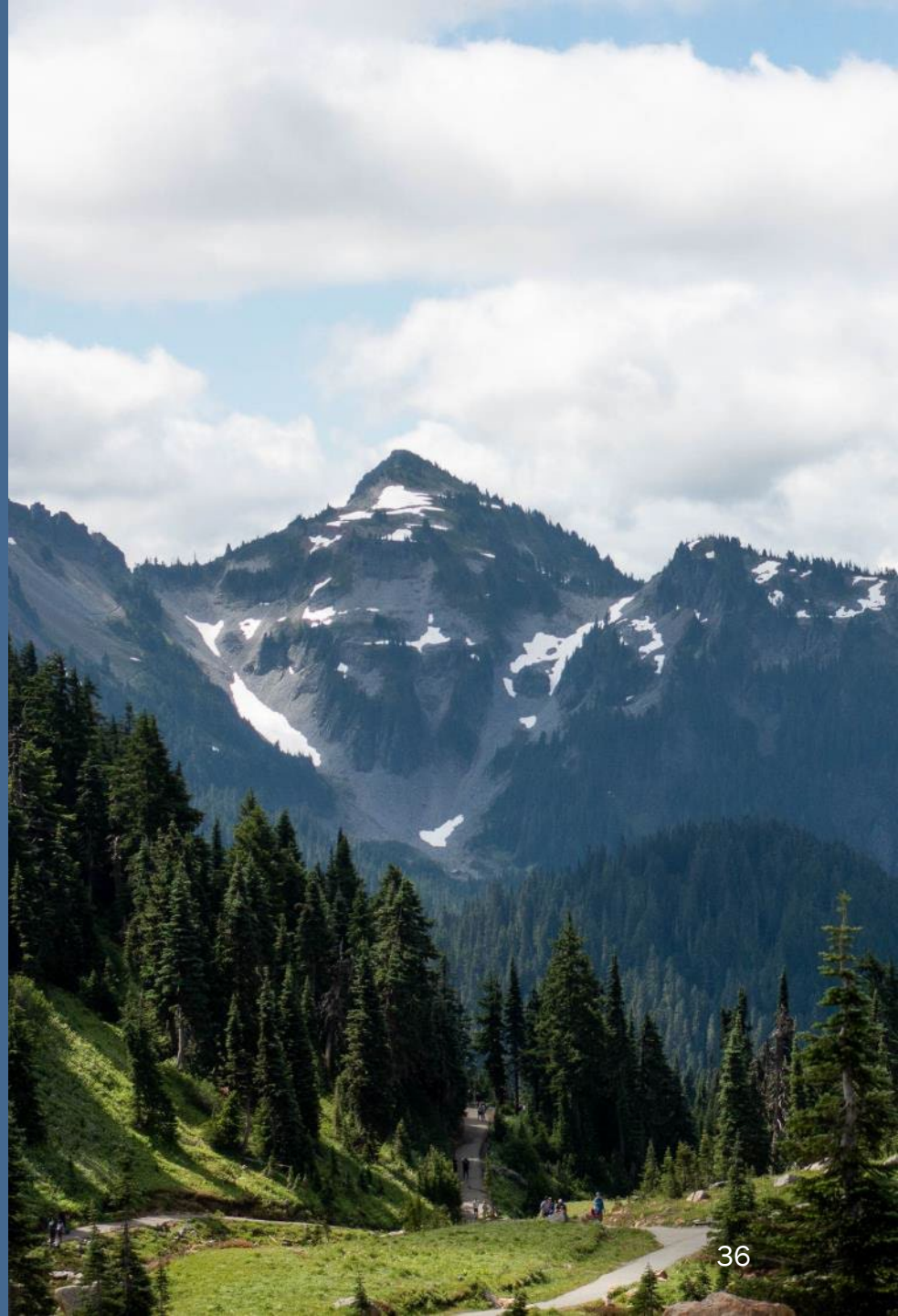
… the department will engage with overburdened communities and vulnerable populations in:

(i) Identifying **emitters** in overburdened communities; and

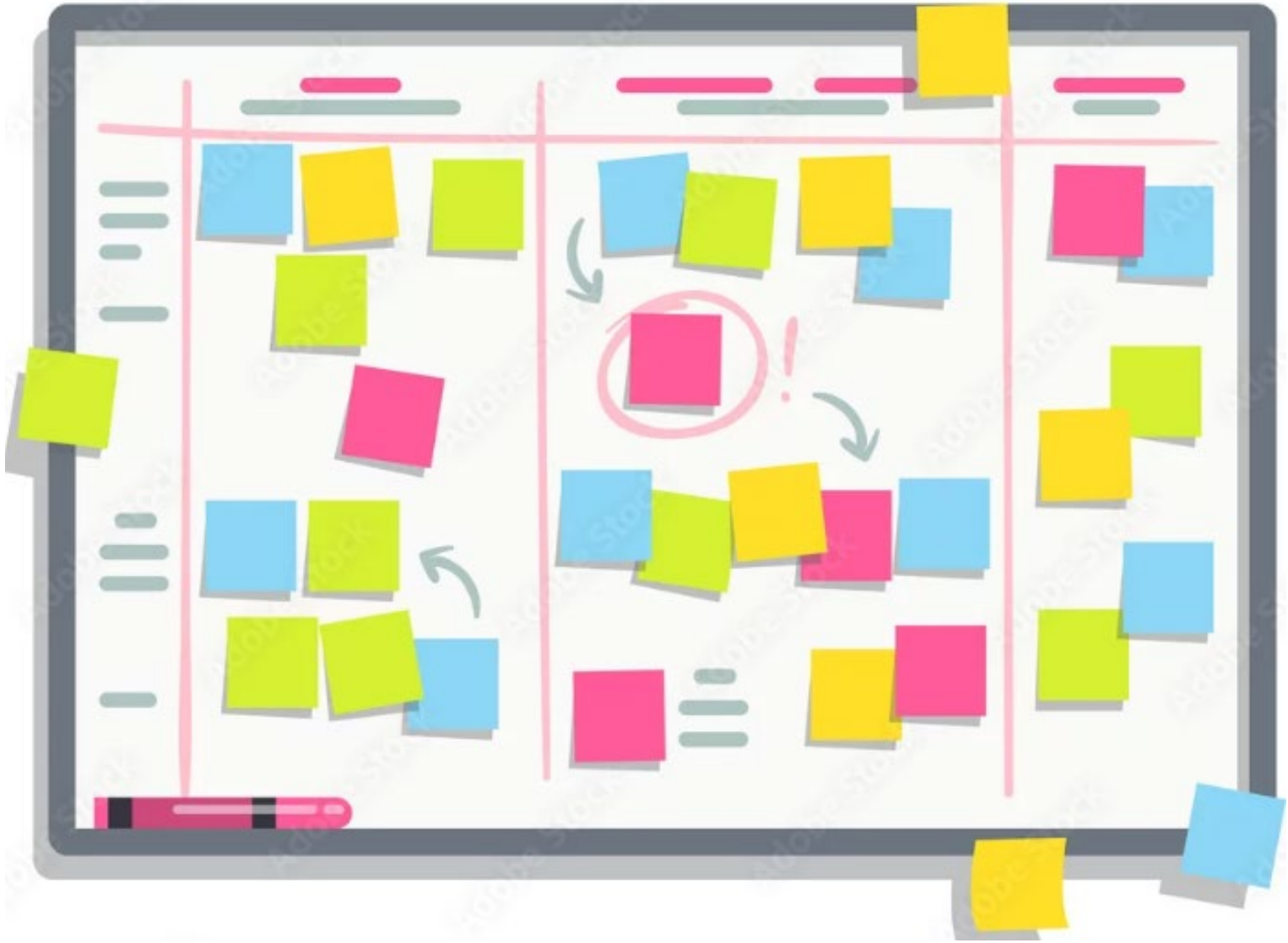
(ii) Monitoring and evaluating criteria pollutant emissions in those areas.

RCW 70A.65.020(4)(a)

Whiteboard Activity and Discussion



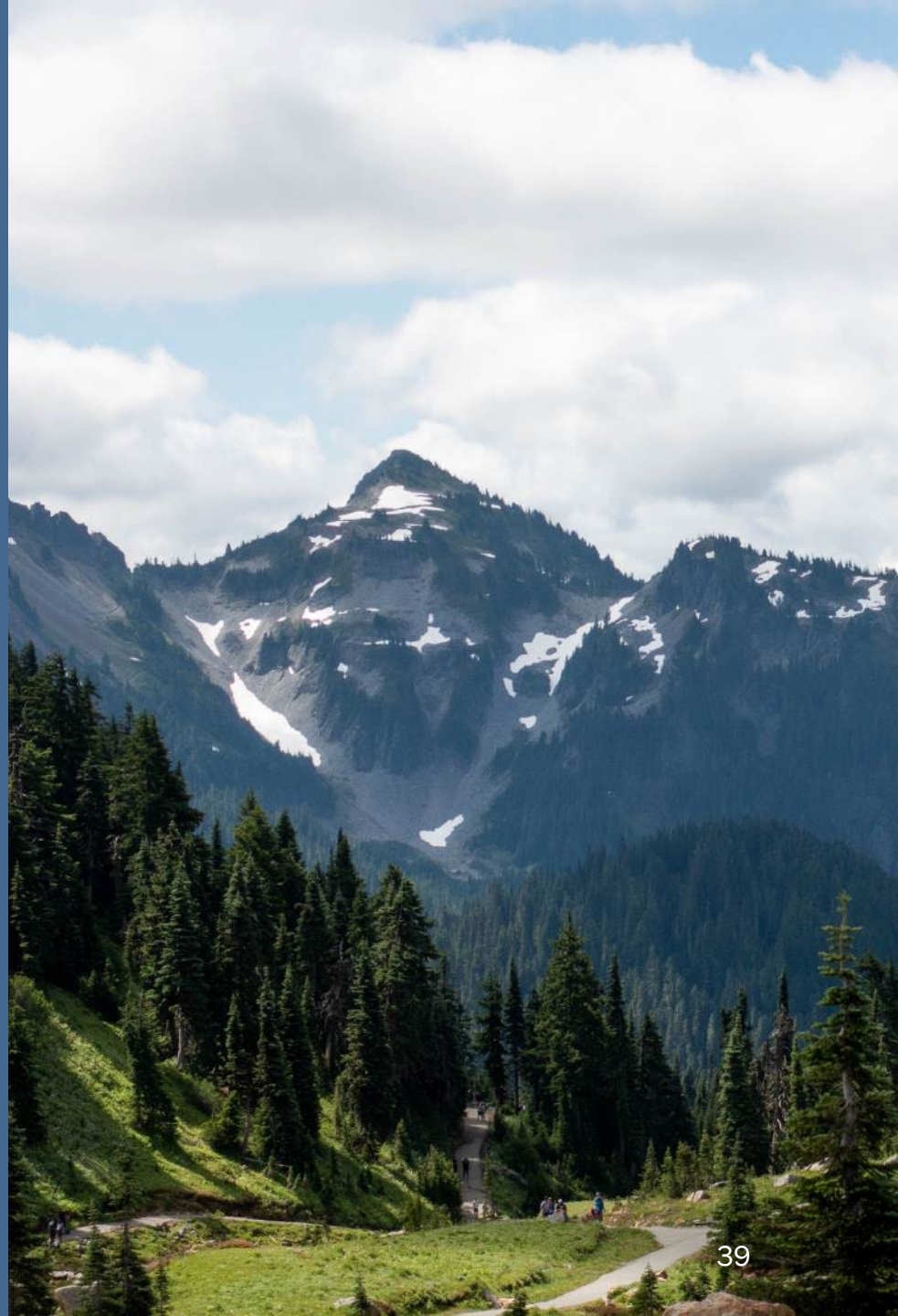
Whiteboard Activity



Questions

- December 2024 meeting discussion summary
- Scope of pollutants
- Air quality and emissions data sources
- Scope of emission sources

Looking Ahead



Rulemaking Timeline

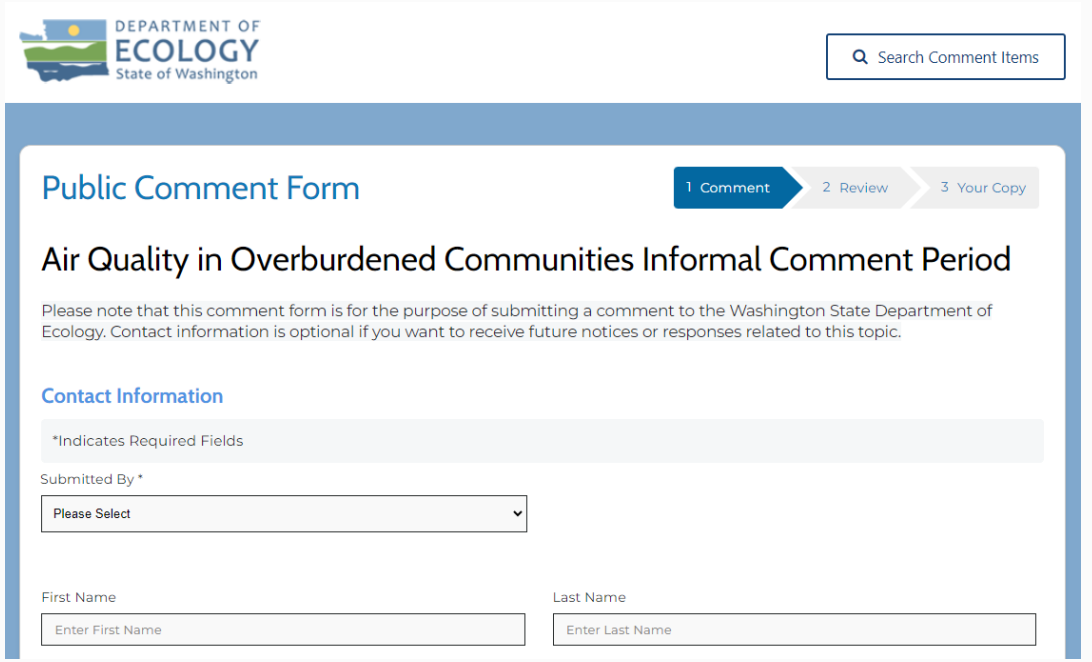
Future topics and dates are tentative.

Preview of Our Next Workshop

- Air quality targets
  - What form should a target take?
  - How can we measure and compare for target setting?
  - Which criteria air pollutants should a target be set for?

More Information and Resources

- Rulemaking webpage
  https://ecology.wa.gov/regulations-permits/laws-rules-rulemaking/rulemaking/wac-173-448
- Public comment form
  https://aq.ecology.commentinput.com/?id=peMcrVEmd



- Overburdened Communities email distribution list
  https://public.govdelivery.com/accounts/WAECY/subscriber/new?topic_id=WAECY_217

Thank you!

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