
Air Quality in Overburdened Communities
Rulemaking: Introduction to Air Quality Targets
Wednesday, May 21 , 2025
Chapter 173-448 WAC
DEPARTMENT OF
ECOLOGY
State of Washington

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State of Washington

Welcome

Improving Air Quality in Overburdened Communities Highly Impacted by Air Pollution

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

- Expanding air monitoring
- Adopting strategies to reduce air pollution
- Evaluating and reporting on progress

StoryMap

Pieces That Need To Fit Together

Rule Development Process

Public workshops (we are here) – comments welcome

Preliminary draft(s) – inviting informal comments

Draft rule (proposal) public comment period and public hearing

Rulemaking Timeline

Ecology Staff

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Erin Torrone
Facilitator

Jane Pennington
Technical Host

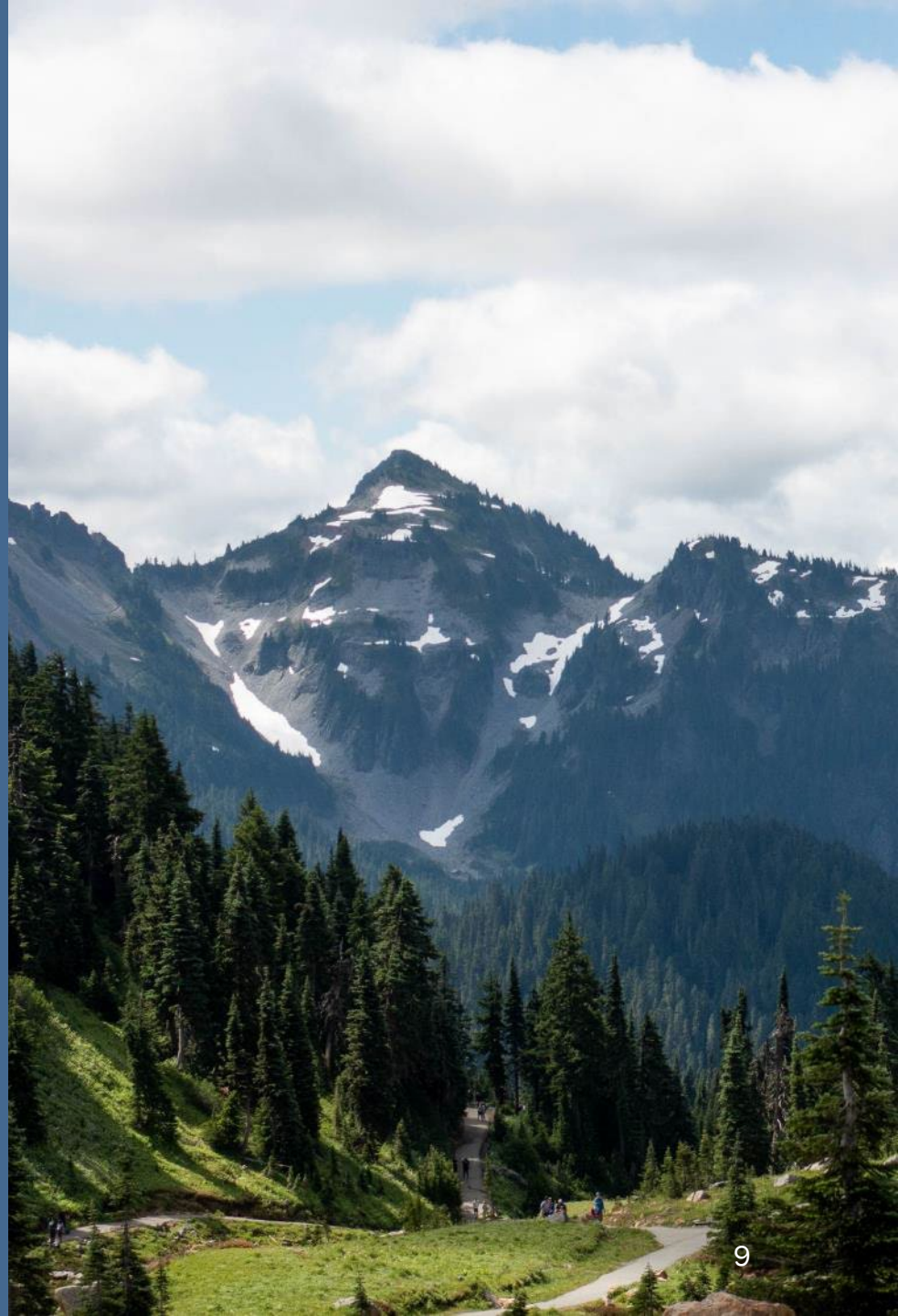
Agenda

- Previous meeting discussion summary
- Scope of air quality targets
- Air quality targets options
- Q&A

March Meeting Recap

Topic: Scope of pollutants and emission sources

Rulemaking webpage



Ecology's Questions to Participants

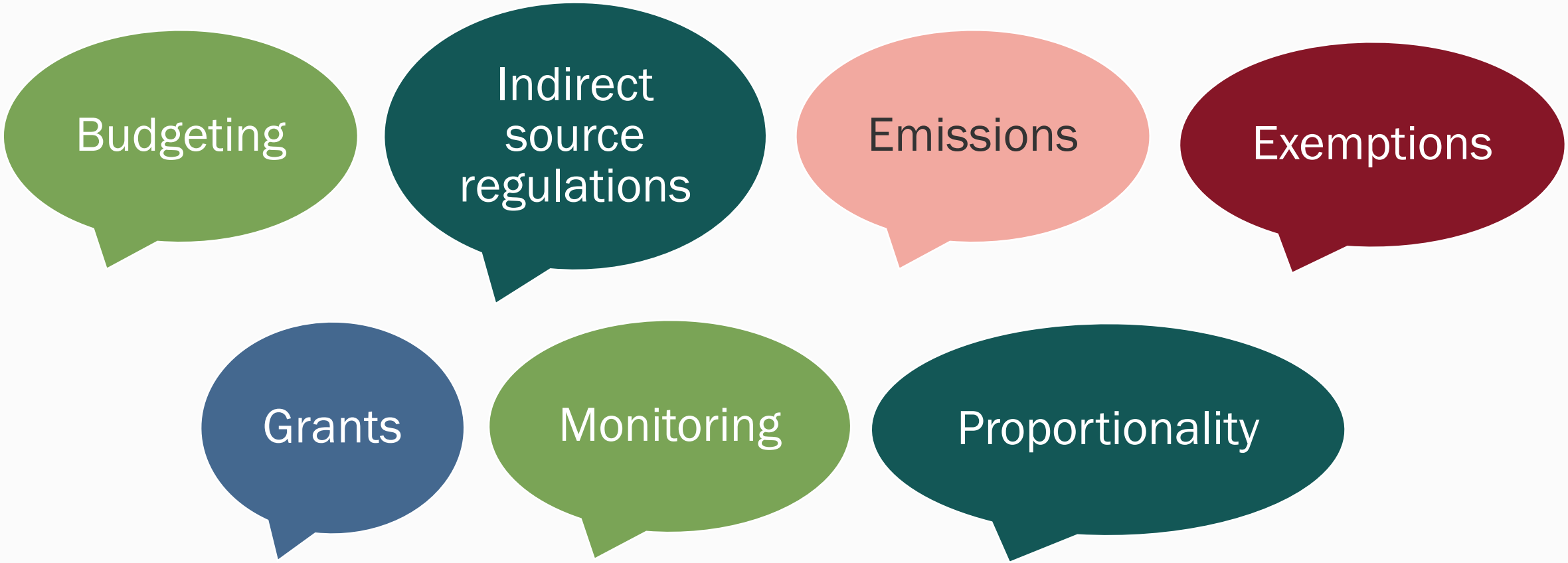
Identifying emission sources

Recommended resources

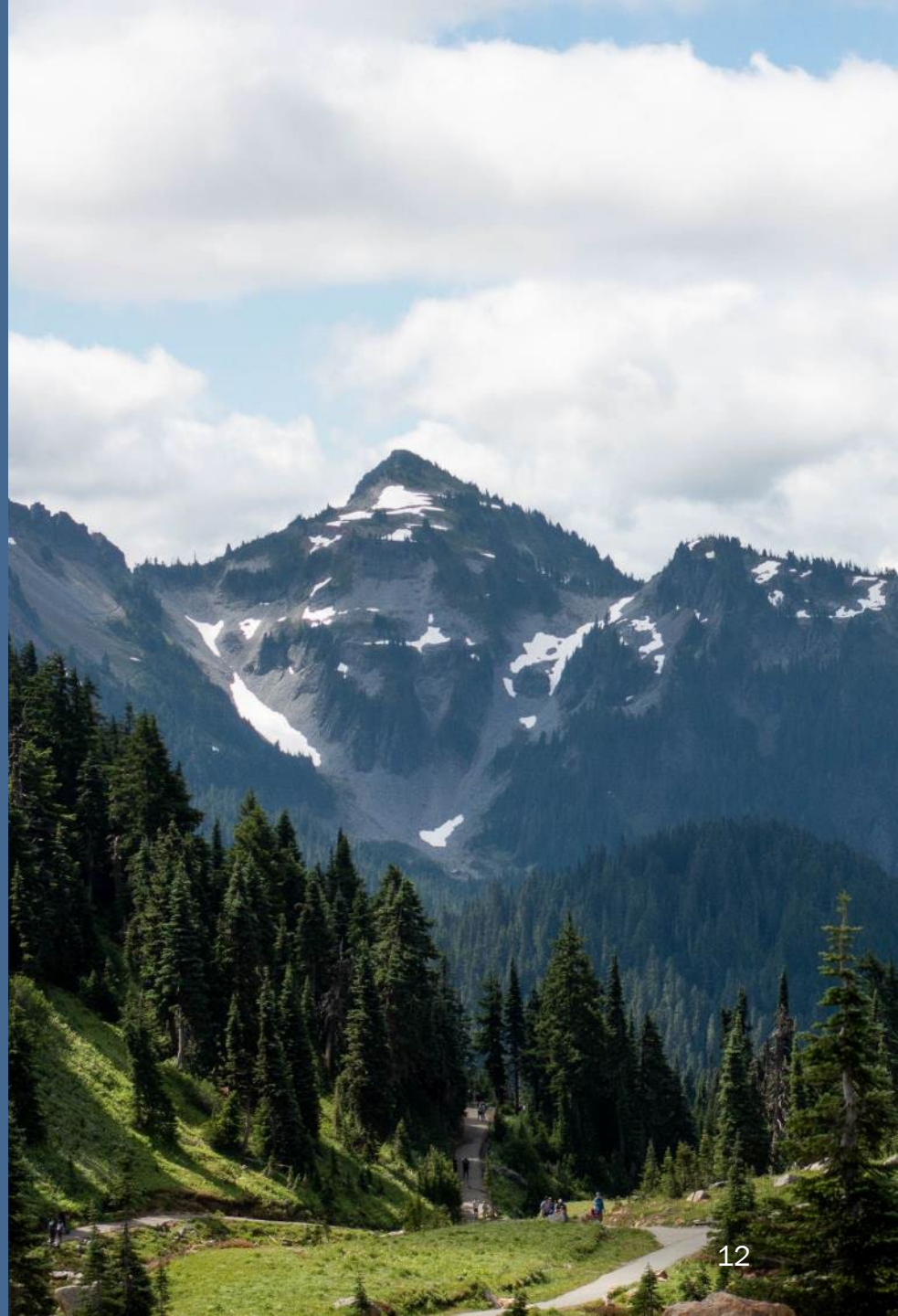
Air pollution from outside communities

Additional topics

Participants' Questions to Ecology



Scope of Air Quality Targets



Statutory Direction

Once this review determines the levels of criteria pollutants in an identified overburdened community, then the department [Ecology], in consultation with local air pollution control authorities, must:

Establish **air quality targets** to achieve air quality consistent with whichever is more protective for human health:

(A) National ambient air quality standards [NAAQS] established by the United States environmental protection agency; or

(B) The air quality experienced in neighboring communities that are not identified as overburdened

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

Pollutant Considerations

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

Nitrogen Dioxide

Produced when fuel burns. Highest levels are near roads.

Sources:

- Cars
- Ships and locomotives
- Industrial power plants

Sulfur Dioxide

Forms when fuel that contains sulfur is burned.

Sources:

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

Carbon Monoxide

Odorless, tasteless, colorless gas from combustion.

Sources:

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

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 (EPA)

Pollutant Considerations (2)

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Sources:

- Cars
- Ships and locomotives
- Industrial power plants

What are Air Quality Targets?

- A target is something that can be aimed at.
- In this case, we're talking about measured air quality that we are aiming to achieve.

What are Design Values?

- Design values help compare air quality at a location to air quality standards.
- This method relies on three years of monitoring data.
- After design values are calculated, the air in overburdened communities can be compared to an air quality target.

Air quality design values (EPA)

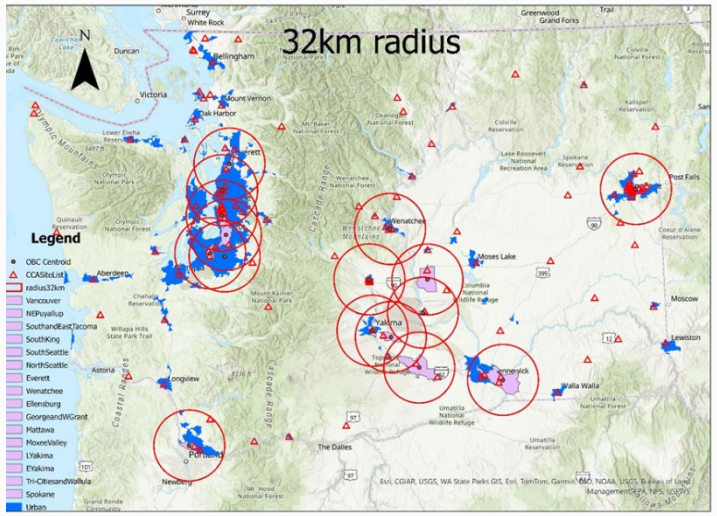
What are Neighboring Communities?

Neighboring communities are **groups of people** who live geographically close to one another.

Pilot Analysis of Air Quality in Neighboring Communities

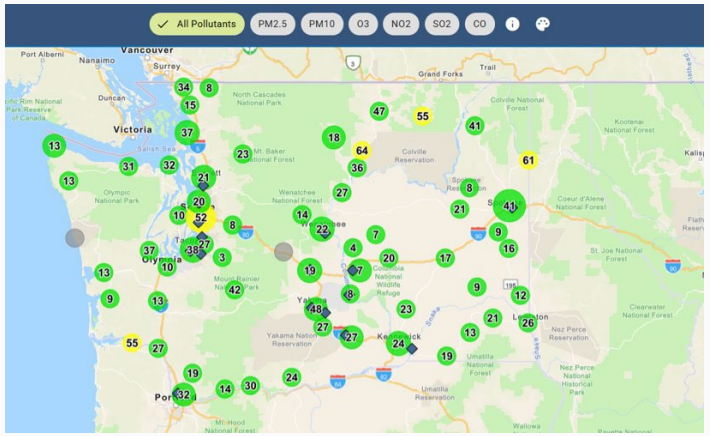
Considered neighboring communities at the following scales:

- Radii distances from overburdened communities
- Ecology regions (Eastern, Central, Northwest, Southwest)
- Washington



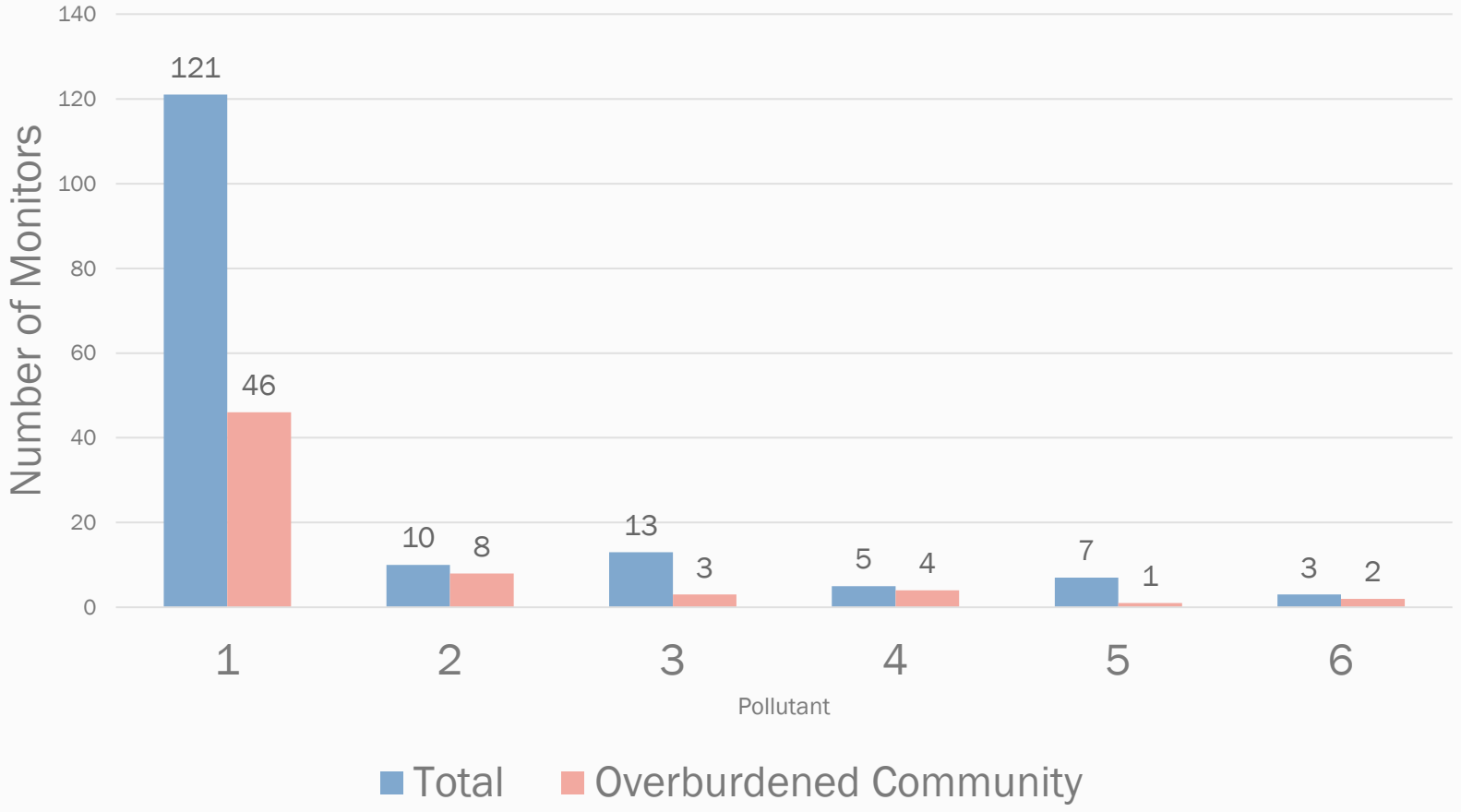
Radii options (20, 32, and 50 km)

Regional options



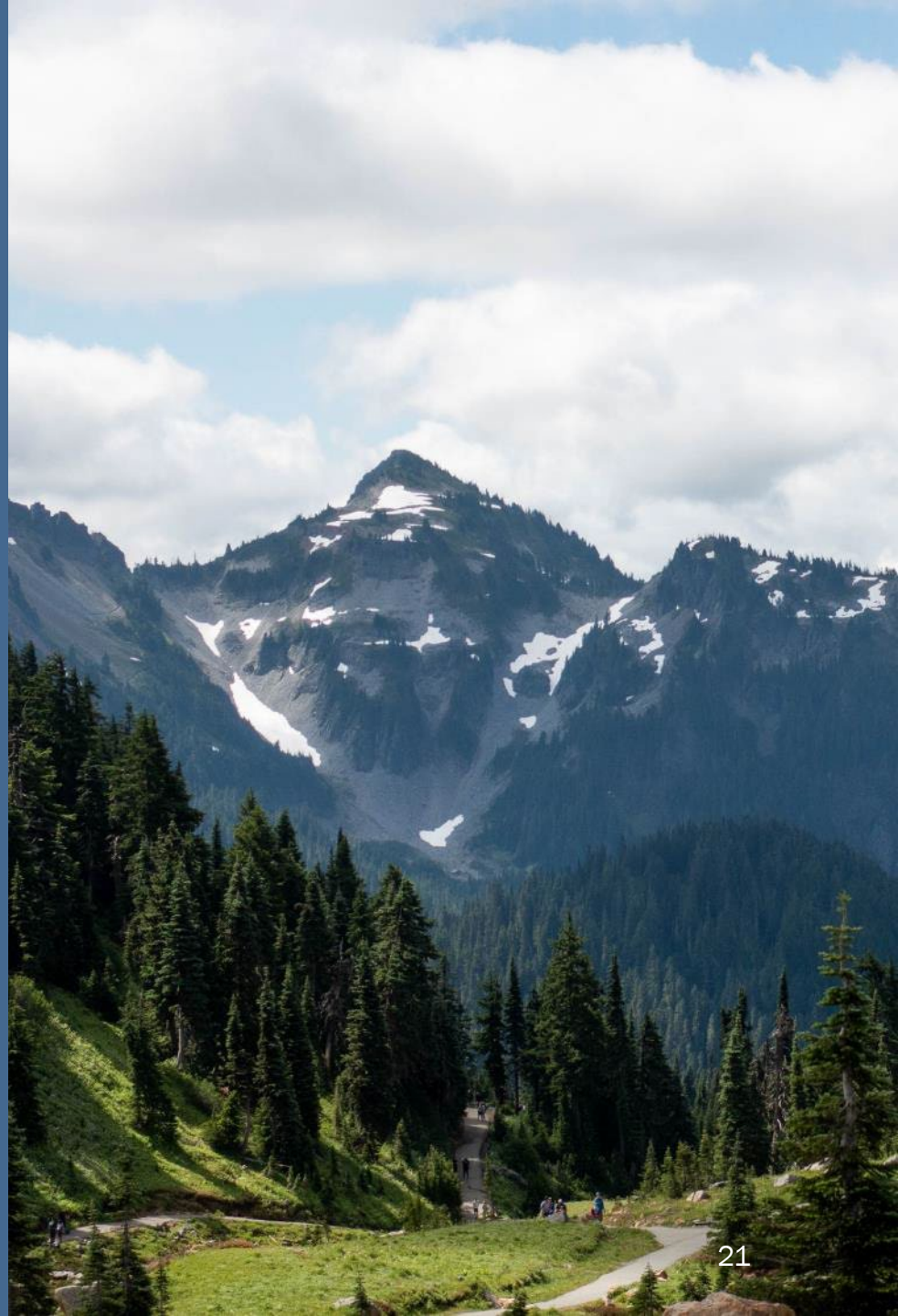
Statewide option

Monitoring Considerations



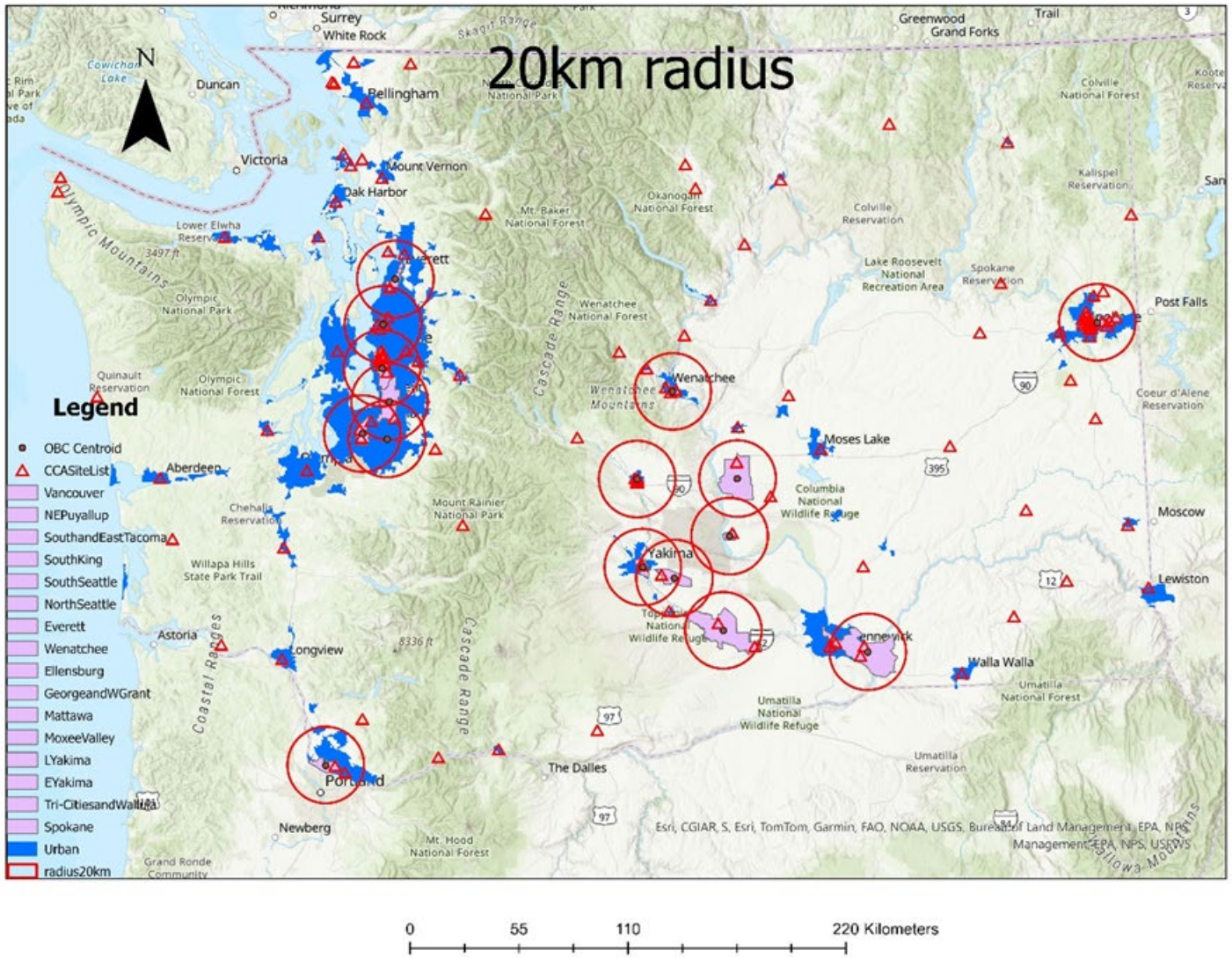
- Classifiable pollutants **are** monitored within overburdened communities
- Unclassifiable pollutants are **not** monitored within overburdened communities

Air Quality Targets Options

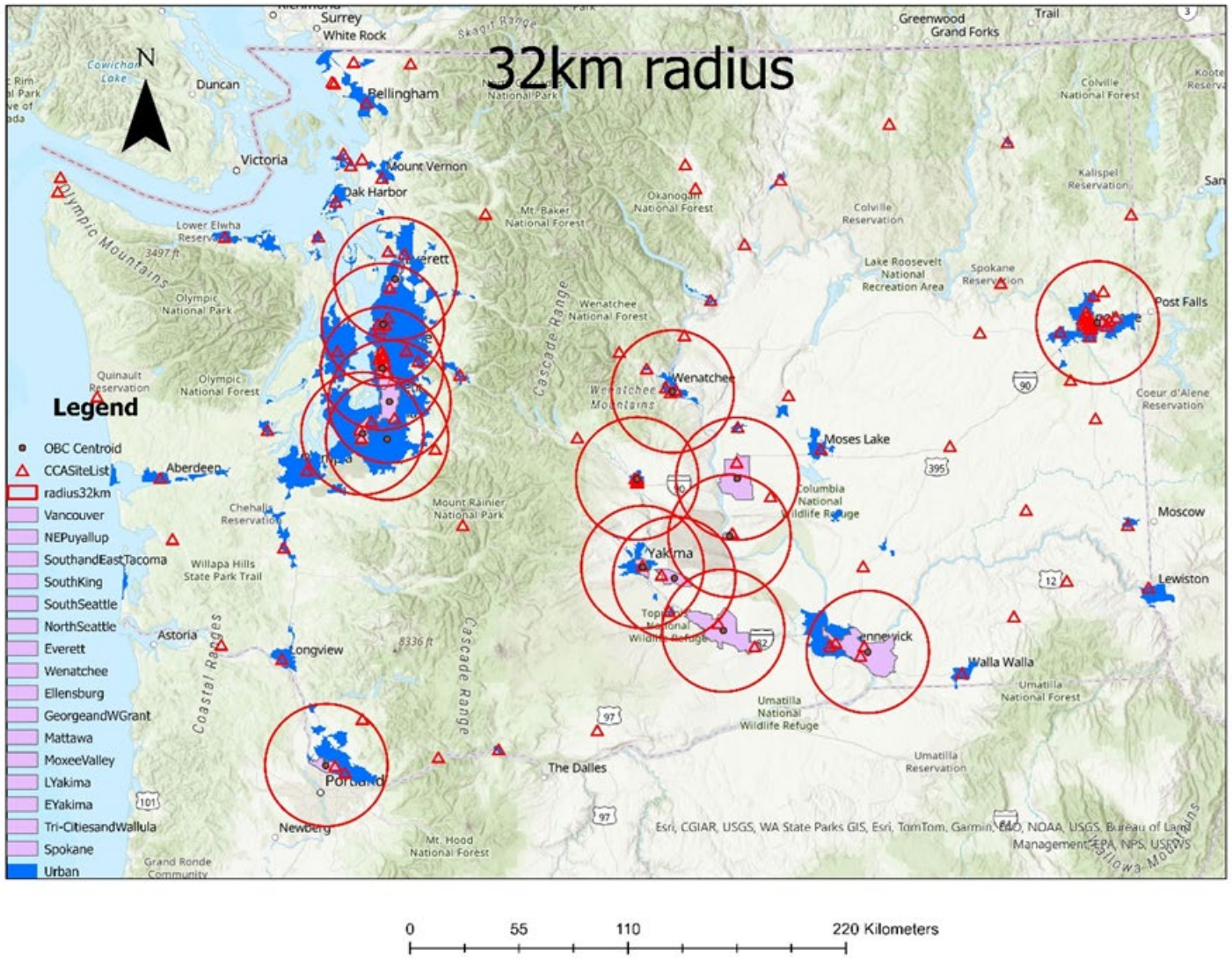


Radius Option

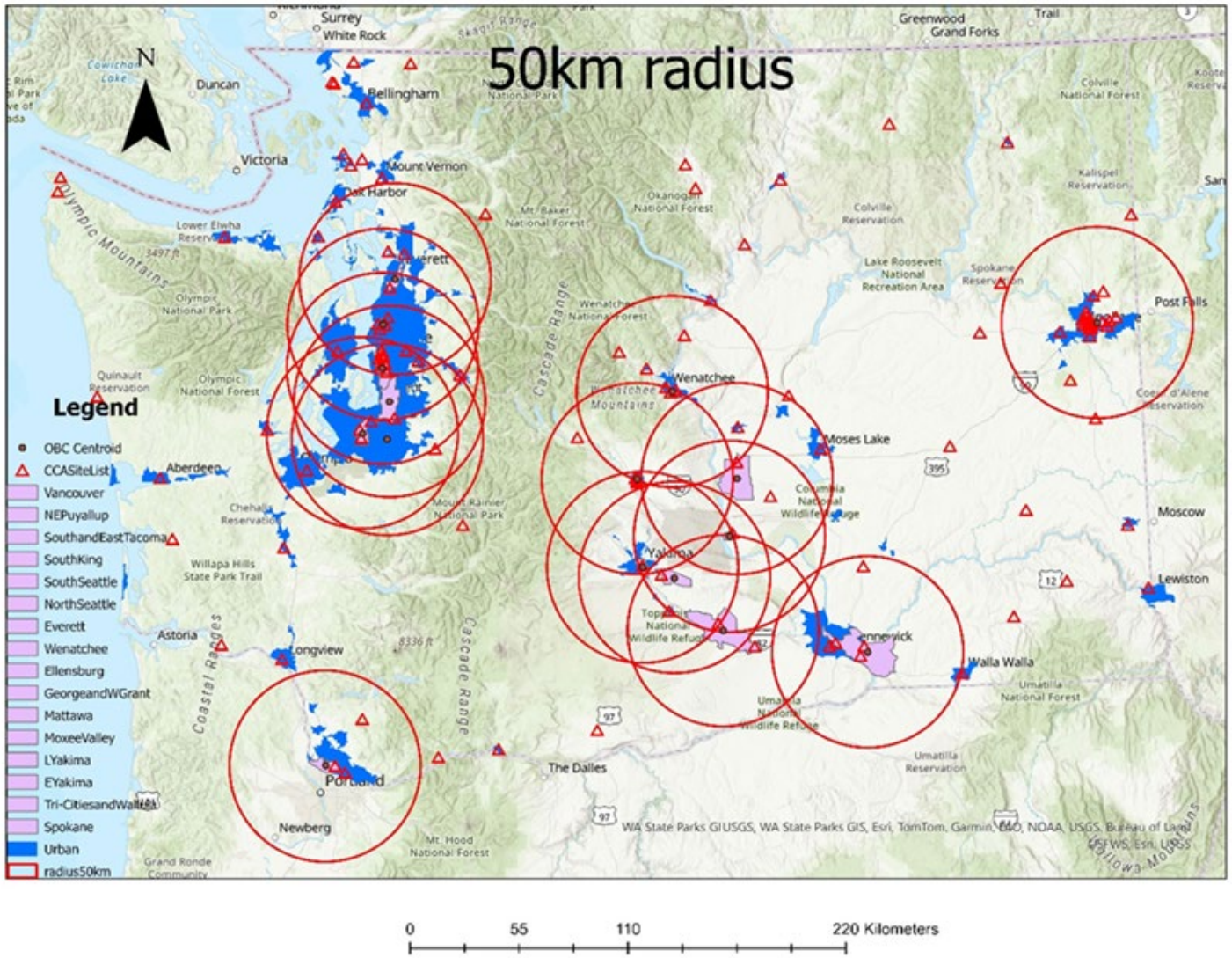
The air quality target is the design value for a neighboring community with a specific radius around the overburdened community.



Monitors within a 20 km radius



Monitors within a 32 km radius



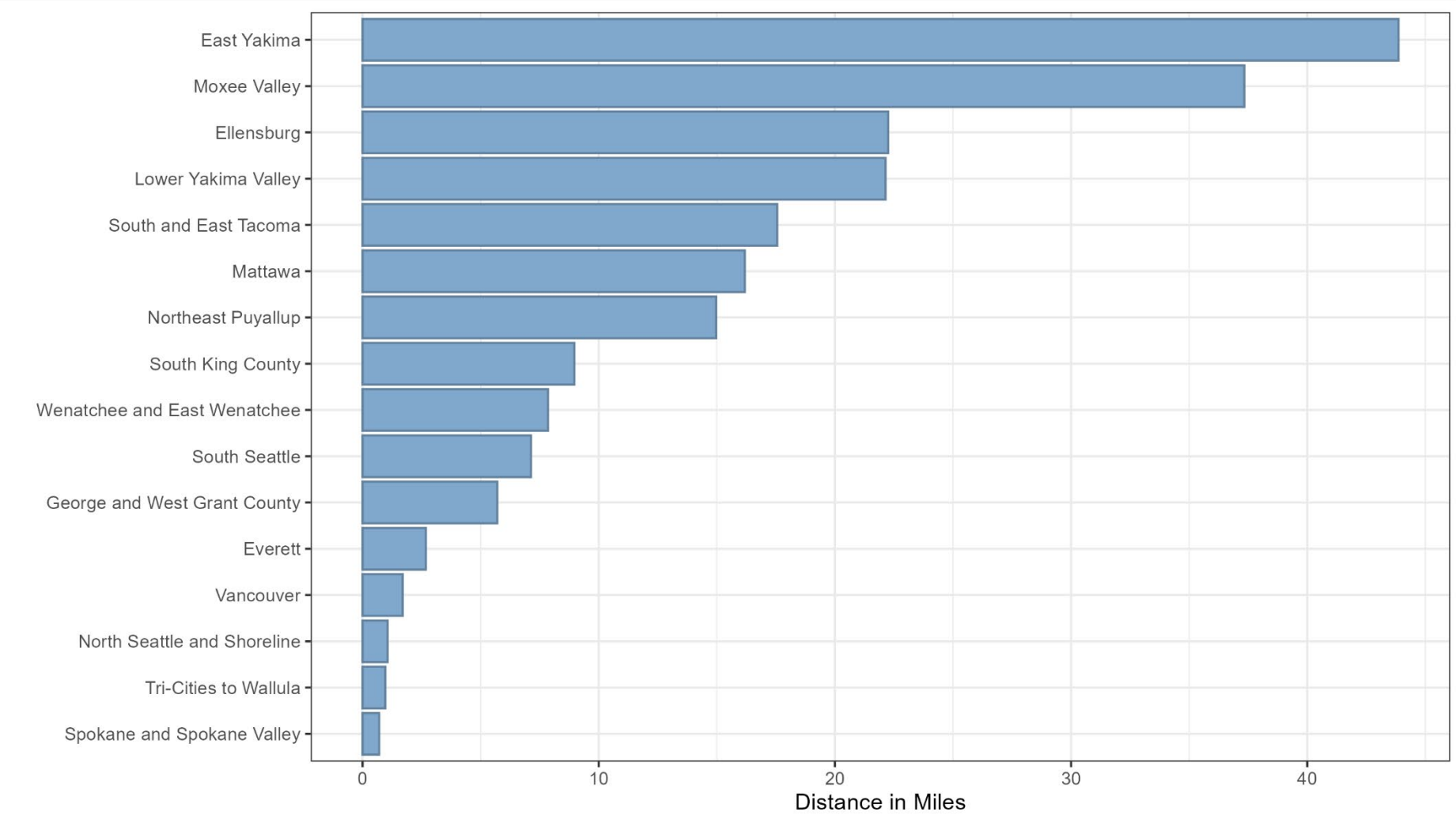
Monitors within a 50km radius

Table 1. Monitors in Neighboring Communities

DEPARTMENT OF ECOLOGY State of Washington

Overburdened Community	20 km/12.4 mi radius	32 km/19.9 mi radius	50 km/31.1 mi radius
Spokane and Spokane Valley	5	6	8
Tri-Cities to Wallula	0	1	2
East Yakima	0	0	0
Lower Yakima Valley	0	1	1
Moxee Valley	0	0	0
George and West Grant County	1	2	3
Mattawa	0	1	1
Ellensburg	1	1	2
Wenatchee and East Wenatchee	3	4	7
Everett	2	5	10
North Seattle and Shoreline	4	6	9
South Seattle	2	7	8
South King County	1	3	9
Northeast Puyallup	1	1	6
South and East Tacoma	1	2	5
Vancouver	1	2	2

Minimum Distance to Non-Overburdened Communities Monitor



Radius Option

Benefits

- More localized than the national air quality standards
- Provides a uniform, systematically-defined area from which data can be averaged

Limitations

- Requires sufficient monitoring data
- Multiple targets and design values will vary over time

Questions about the radius option

Regional Option

The air quality target is a regionally-averaged design value.

- The regional method would calculate an average design value for each included criteria pollutant in every region.
- Here, regionally-averaged design values are considered the “neighboring community” air quality targets for comparison.

Ecology Regions

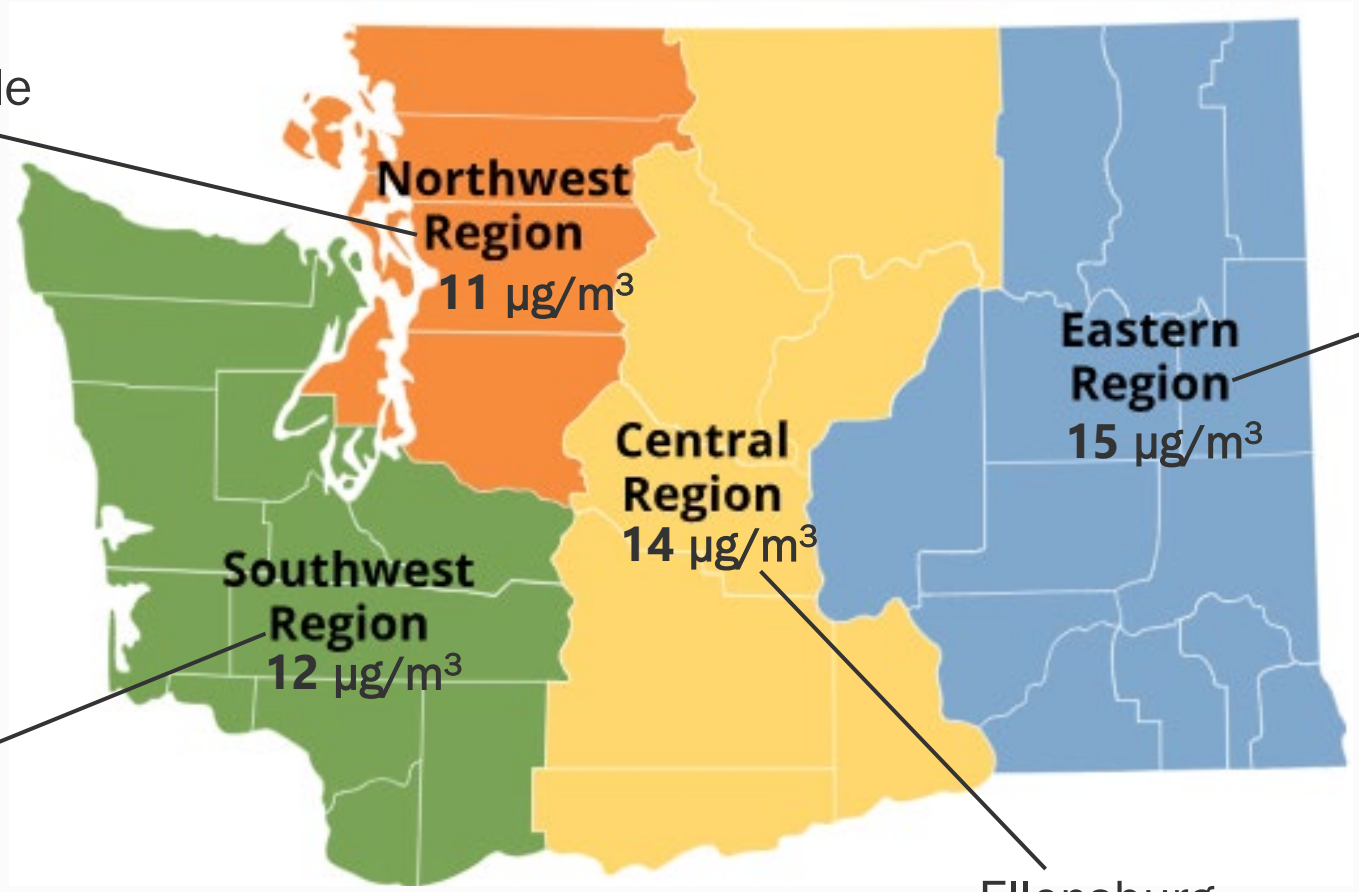
Regional Approach Example – Daily $PM_{2.5}$

Overburdened Community (Ecology Region)	Preliminary 2024 Overburdened Community Design Value µg/m^3	Mean 98th percentile[1] Regional Value µg/m^3
Spokane and Spokane Valley (Eastern)	14	15
Ellensburg (Central)	13	14
Vancouver (Southwest)	17	12
South Seattle (Northwest)	18	11

Data shown is preliminary and for discussion only

[1] Does not include monitors located within overburdened communities

$PM_{2.5}$ Mean 98th Percentile[1] Regional Values Compared to Overburdened Communities Design Values (µg/m³)



South Seattle
18 µg/m³

Spokane and
Spokane Valley
14 µg/m³

Vancouver
17 µg/m³

Ellensburg
13 µg/m³

Data shown is preliminary and for discussion only

[1] Does not include monitors located within overburdened communities

Regional Option

Benefits

- A regional approach may give more consistency
- Somewhat reflective of regional characteristics and are influenced by regional industries and activities
- More sensitive than statewide averages to the variation in pollutant prevalence

Limitations

- May not be sufficiently reflective of regional characteristics
- By calculating the design values within each region, there will be four comparative targets for air quality in the state

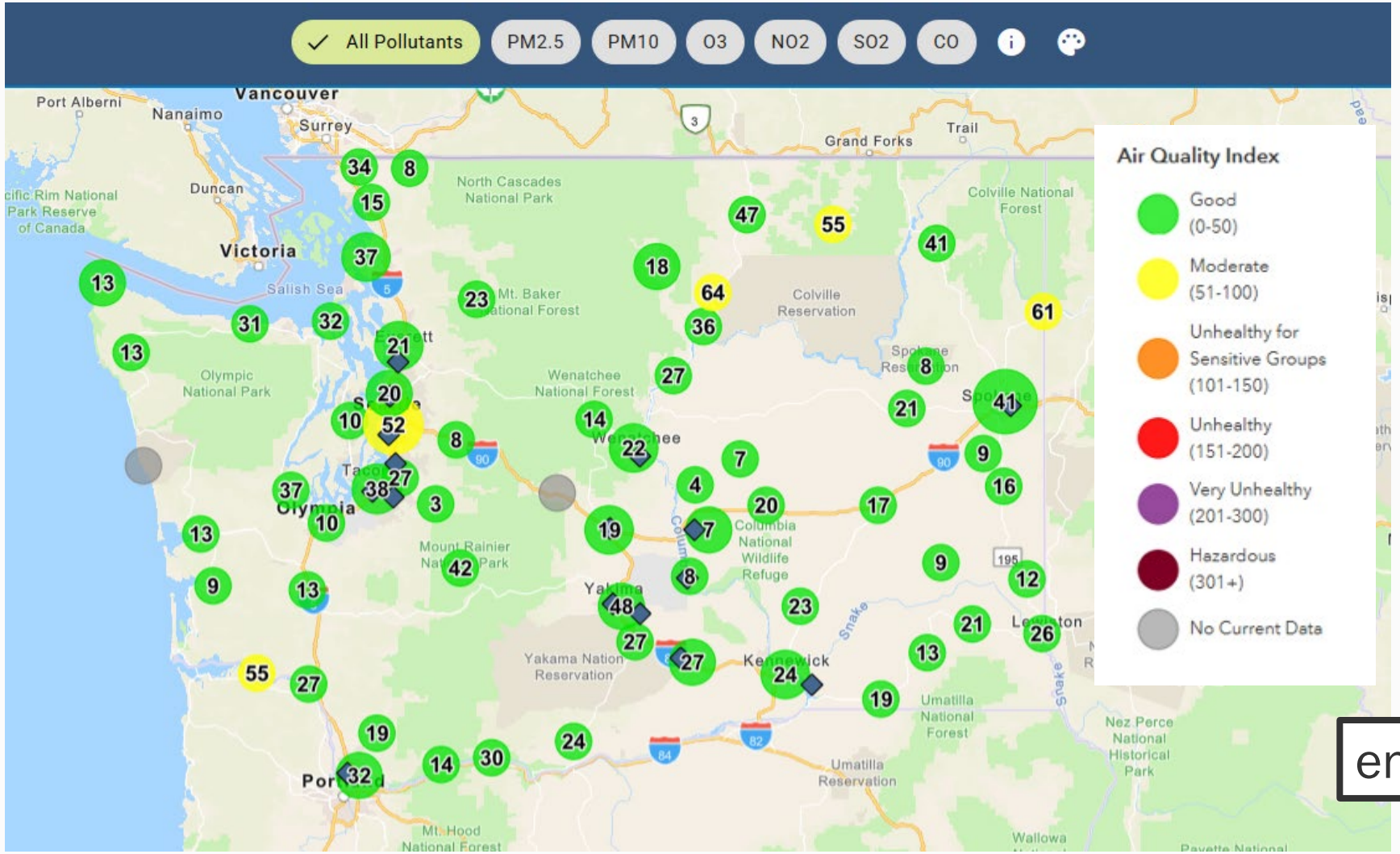
Questions about the regional option

Statewide Option

The air quality target is the statewide averaged design value.

- In this case, we extend the definition of neighboring community to include all of Washington.

Washington's Air Monitoring Network



enviwa.ecology.wa.gov

Statewide Option

Benefits

- A single air quality target for each criteria pollutant will provide a standardized comparative value for all overburdened communities.
- This method simplifies the trend analysis for air quality in overburdened communities.

Limitations

- Some pollutants are more prevalent in certain regions of the state, so the statewide comparative value is less sensitive to the local air quality context.
- A statewide average may be too broad of an interpretation of the term “neighboring community.”

Questions about the statewide option

National Ambient Air Quality Standard (NAAQS) Option

The air quality target is based on the NAAQS.

- Primary and secondary standards
- Standards are based on rigorous scientific studies.
- Literature review and weight of the evidence
- Ability to implement matters

Pollutant	Primary/Secondary	Averaging Time	Level	Form
Nitrogen dioxide (NO_2)	Primary*	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
Nitrogen dioxide (NO_2)	Primary* and secondary	1 year	53 ppb	Annual mean
Ozone (O_3)	Primary* and secondary	8 hours	0.070 ppm	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years

Pollutant	Primary/Secondary	Averaging Time	Level	Form
Particle pollution ($PM_{2.5}$)	Primary*	1 year	9 $\mu g/m^3$	Annual mean, averaged over 3 years
Particle pollution ($PM_{2.5}$)	Secondary	1 year	15 $\mu g/m^3$	Annual mean, averaged over 3 years
Particle pollution ($PM_{2.5}$)	Primary* and secondary	24 hours	35 $\mu g/m^3$	98th percentile, averaged over 3 years
Particle pollution (PM_{10})	Primary* and secondary	24 hours	150 $\mu g/m^3$	Not to be exceeded more than once per year on average over 3 years

Attainment Status

- Washington is currently in attainment of the national air quality standards, but occasionally there are violations.
- EPA determines attainment status when they review a standard – which is a robust process that happens about every 5–10 years or so.
- Ecology could review overburdened communities attainment status more frequently than state level attainment.
- Overburdened communities design values could be calculated from the Washington air monitoring network and compared to the national air quality standards at annual or biannual intervals.
- Over time, these comparisons could be used to establish a trend to determine if the air quality in overburdened communities is improving, staying the same, or worsening.

National Air Quality Standards Option

Benefits

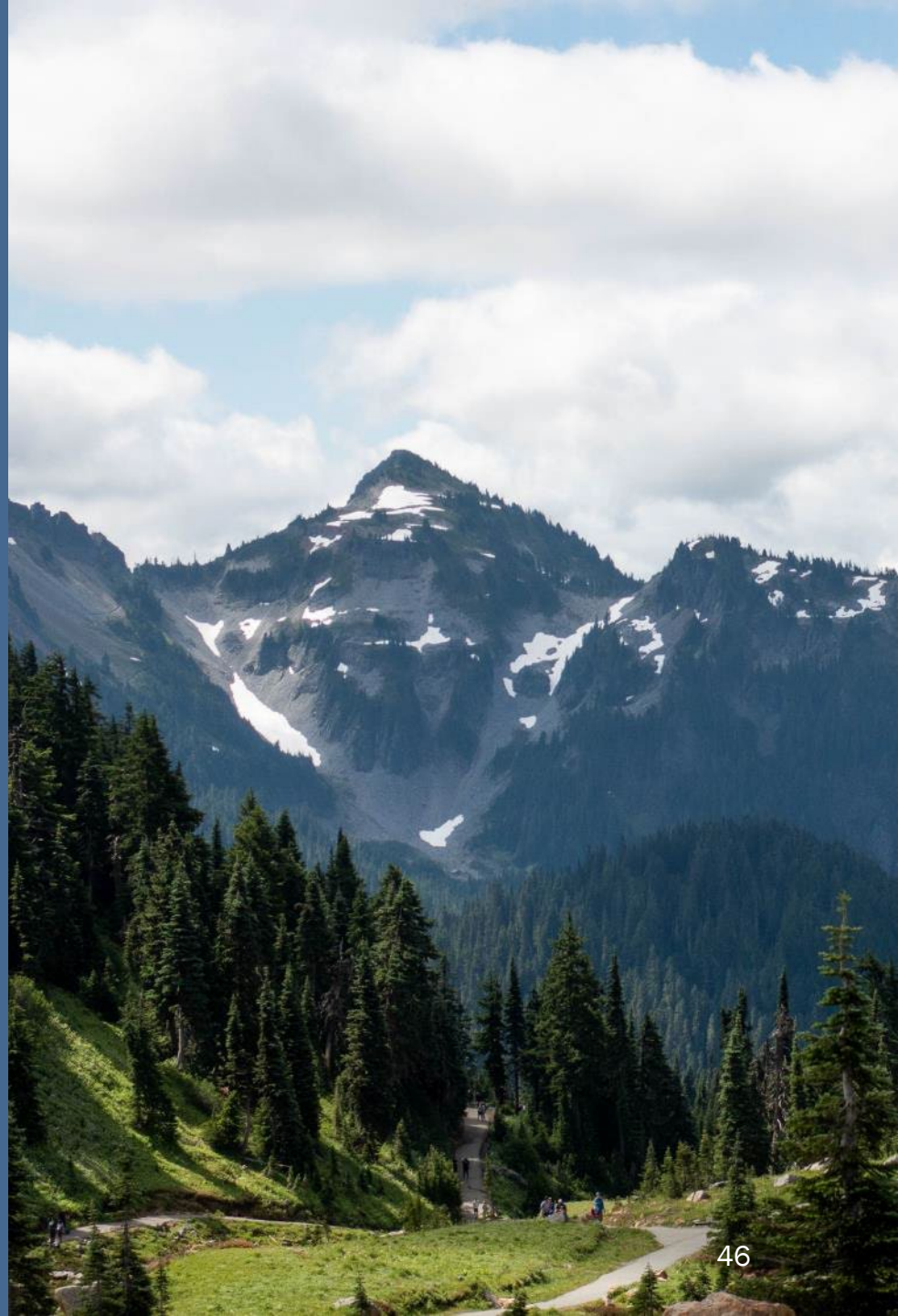
- National air quality standards are well-established health standards that don't change year to year.
- Scientifically defensible
- Avoids having different air quality targets for each overburdened community, potentially providing consistency and certainty
- Could provide a workable interim option as the monitoring network grows, and as neighborhood scale data and tools become available

Limitations

- National air quality standards do not provide localized information about what people in a specific community are breathing on a day-to-day basis

3-Minute Break

Questions and Answers



Ecology's Questions to Participants

1. Are there additional pros and cons to using a summary statistic like the design value to characterize air quality in overburdened communities?

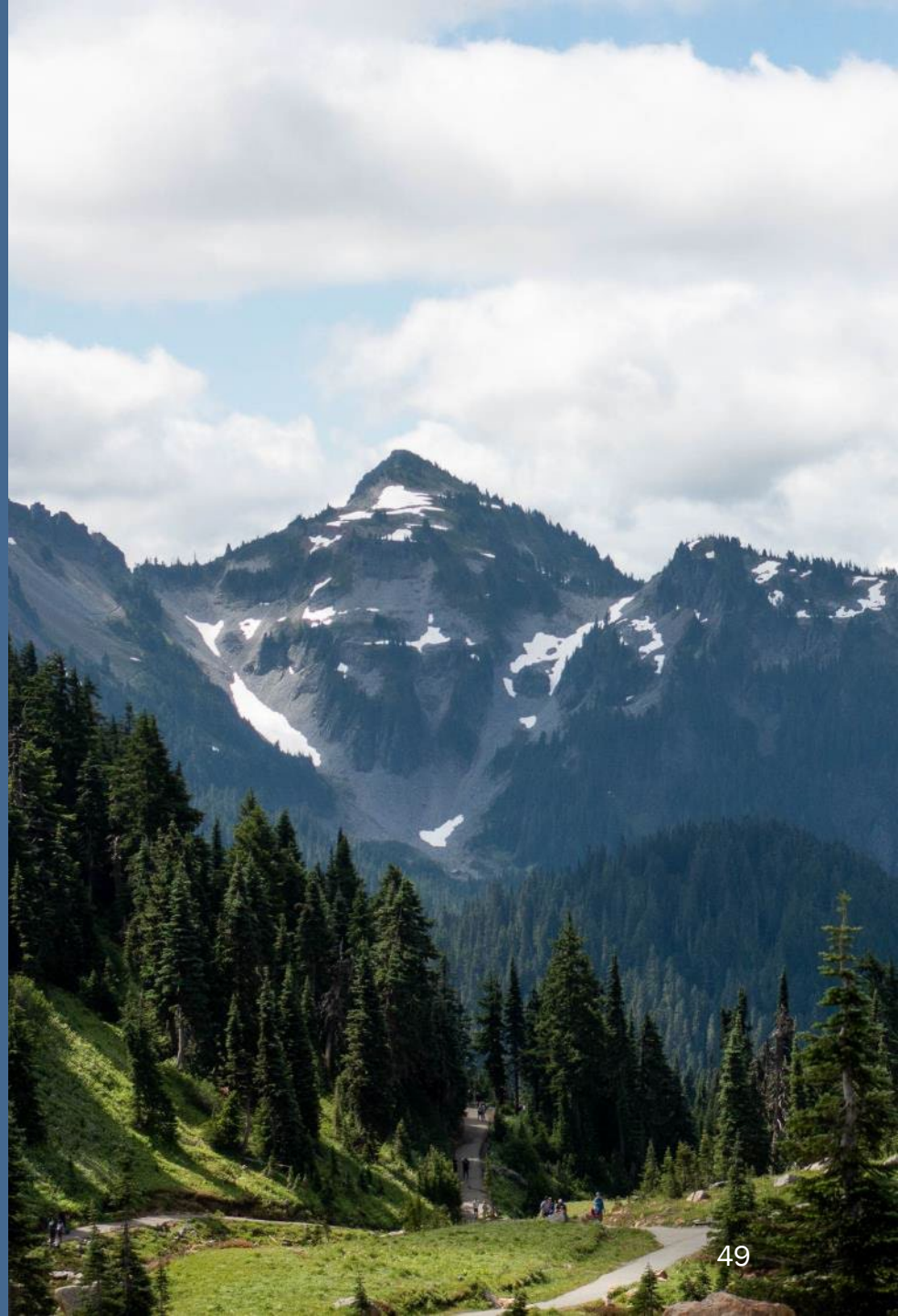
2. What else should we consider when measuring and comparing air quality targets?

3. What do you think about using the national air quality standards as the target when data from neighboring communities isn't available?

Participants' Questions to Ecology

- Previous meeting discussion summary
- Scope of air quality targets
  (definitions and monitoring considerations)
- Air quality targets options
  (neighboring communities and national air quality standards)

Looking Ahead



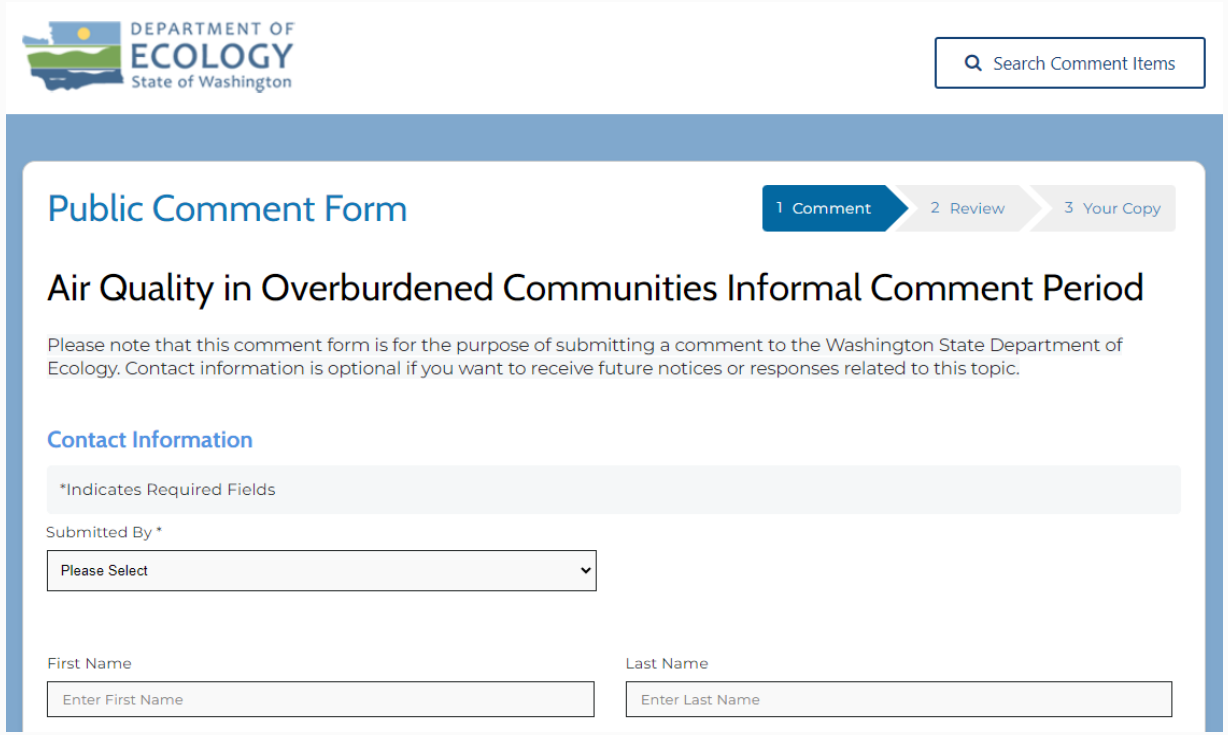
Rulemaking Timeline

More Information and Resources

[Rulemaking Webpage]

[Public Comment Form]

[Overburdened Communities email distribution list]



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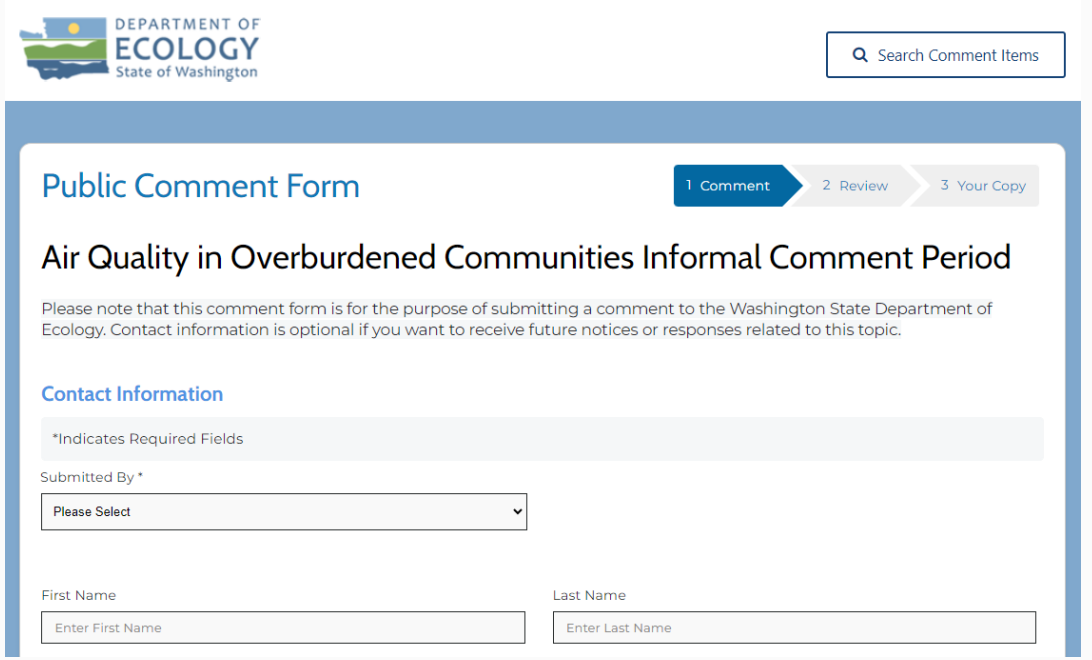
More Information and Resources

- 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

Take the survey to protect #OurCleanAir.
https://surveymonkey.com/r/XS9BFS7

Thank you!

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