

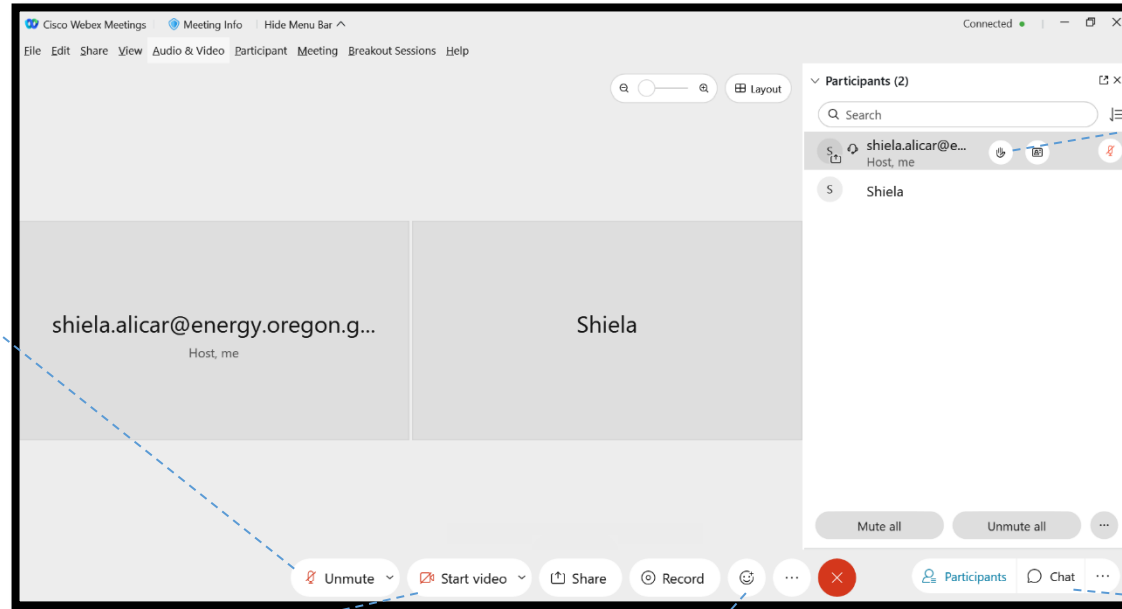
# Oregon Department of **ENERGY**

**Oregon Energy Strategy**  
Environmental Justice  
and Equity Working  
Group

Lauren Rosenstein, Mary  
Kopriva, Edith Bayer  
December 18, 2024



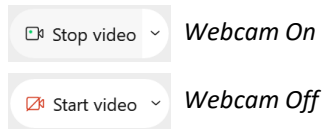
# USING WEBEX



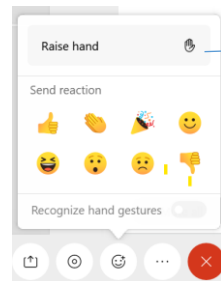
## Audio Options



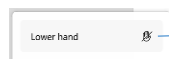
## Video Options



## Reactions



Click to Raise your hand.

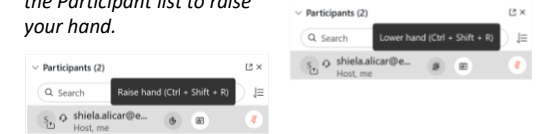


Click on Lower hand when you are done.

## Second Raise Hand Option

You can also click on the hand next to your name in the Participant list to raise your hand.

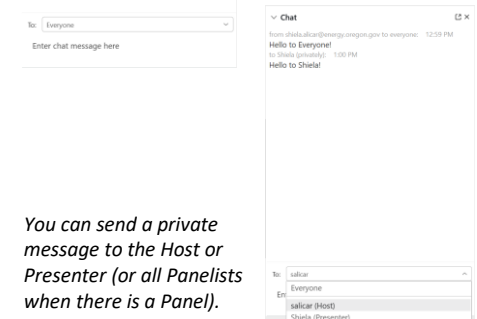
Click on Lower hand when you are done.



## Chat



You can chat to Everyone in the meeting.



You can send a private message to the Host or Presenter (or all Panelists when there is a Panel).

# GROUP AGREEMENTS

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- Listen carefully; seek to learn and understand each other's perspective.
- Encourage respectful, candid, and constructive conversation.
- Keep an open mind.
- Ask questions to clarify and understand why.
- Be open, transparent, inclusive, and accountable.
- Respect differing opinions.
- Seek to resolve differences and find common ground.
- Be conscious of speaking time; step back to allow space for others to contribute.



# AGENDA

10:00 – 10:05	Welcome and introductions in the chat	Lauren Rosenstein, ODOE
10:05 – 10:40	Energy Wallet, Geospatial Mapping, and Air Quality Analyses presentation	Ruby Moore-Bloom, Clean Energy Transition Institute Angela Long, Rockcross Consulting Jeremy Hargreaves, Evolved Energy Research Mariah Caballero, Clean Energy Transition Institute
10:40 – 10:50	Clarifying questions	ODOE facilitation
10:50 – 11:00	Wrap up and quick plug for policy working groups	Lauren Rosenstein, ODOE

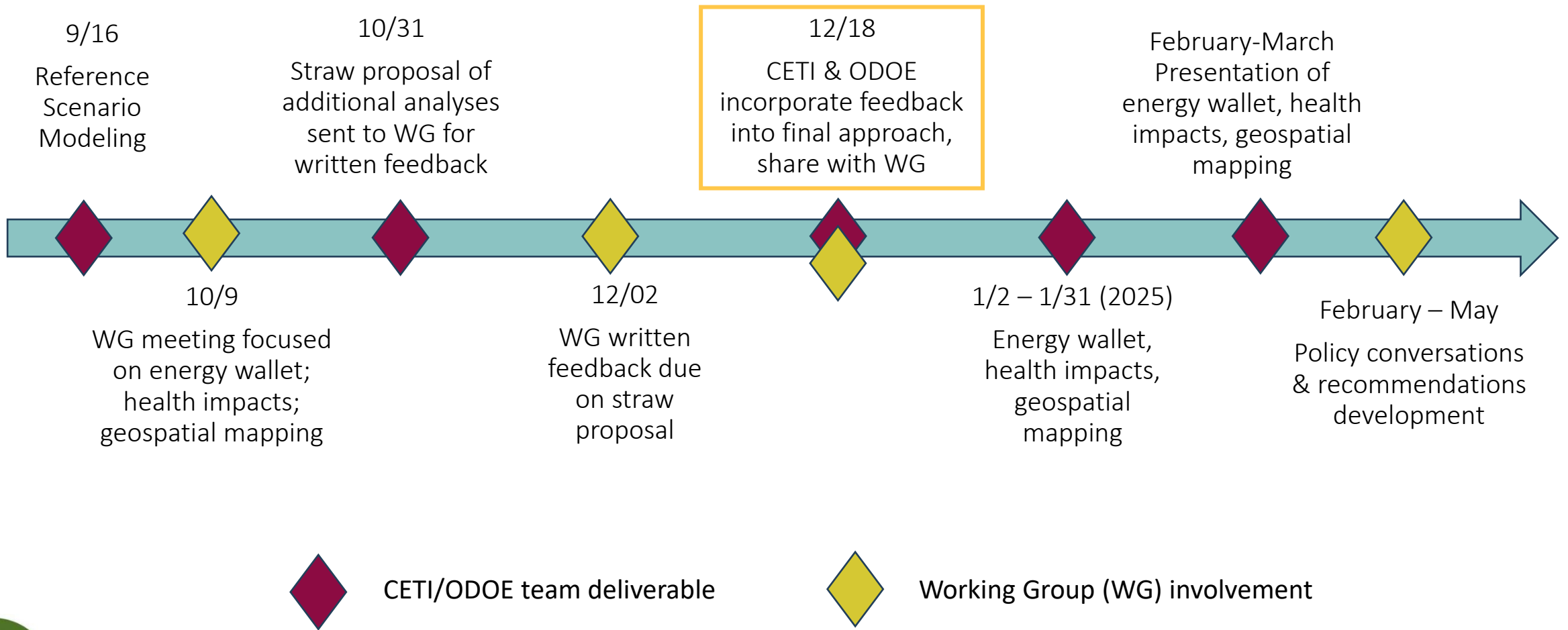
*Note: ODOE will open the floor for comments and questions from participants if time permits.*

*Comments and questions can be submitted to:*

<https://odoe.powerappsportals.us/en-US/energy-strategy/>

# OVERVIEW

# TIMELINE



# SUMMARY OF FEEDBACK

# GENERAL FEEDBACK



**Energy Transition:** The Energy Wallet is seen as an opportunity to better understand how the energy transition will affect energy costs for these groups and to tailor policies that minimize hardship.



**Policy Guidance:** Modeling should not only inform energy costs but also help identify which policies would best support vulnerable groups in the transition to a low-carbon future. Many comments highlight the role of the Energy Wallet in guiding energy policy to ensure those most affected by the energy transition are considered. For example, questions are raised about whether certain housing types (e.g., manufactured homes, multifamily units) should be prioritized for energy efficiency programs.



**Continuing Engagement:** There's a recognition that further input, including from working groups and the public, will be crucial as we build on the energy wallet, air quality, and mapping analysis to inform policy discussions and recommendations.



# ENERGY WALLET

# ENERGY WALLET FEEDBACK

## Representation

- Some commenters ask to differentiate between utility types
- While others asked to develop new customer groups, including:
  - Tribes, Willamette Valley Single Family, Rural and Harsh Climates, and New Multifamily Housing

## Energy Burden

- There was a clear call to ensure different customer groups, particularly low-income households, rural areas, and marginalized communities, are well represented in the analysis to prevent them from being overlooked in policy recommendations.

## Balancing Considerations

- Several comments suggested considerations to balance in choosing the five households, including: representing as many households as possible; ensuring energy burden is reflected; helping inform forward-looking housing solutions; and considering different fuel use (electricity, gas, propane, biomass, etc.).

## Electric Costs & Efficiency

- Many commenters suggested focusing on the electric costs and opportunities for energy efficiency (e.g., transitioning from gas to electric heating) for different groups, particularly those in energy-burdened households like rural, renters, multifamily and manufactured homes.

# PROCESS FOR INCORPORATING FEEDBACK

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- **Considered all feedback received to date**
  - EJ and Equity Working Group 10/09 meeting; Advisory Group 11/20 meeting; ODOE team; public comments
- **Updates to customer groups approach**
  - Details on next slide
- **Conducted secondary analysis to determine statistical differences between groups**
  - ANOVA (analysis of variance) analysis, suggested by commenter
- **Mapped samples from dataset for all customer groups**
  - Dataset for household/building characteristics data from Northwest Energy Efficiency Alliance
- **Developed criteria for determining five customer groups**
  - Geographic coverage
  - Most vulnerable customer groups
  - Diversity
  - Ability to inform policy going forward
- **Finalized recommended list of five customer groups**

# CUSTOMER GROUP UPDATES



**Energy Costs**

Oregon-specific utility cost data



**Vehicle Miles Traveled (VMT) and Costs**

Energy Wallet input



**Energy Use Intensity (EUI)**

Used to calculate consumption



**Income Data**

Customer group analysis



**Customer groups**

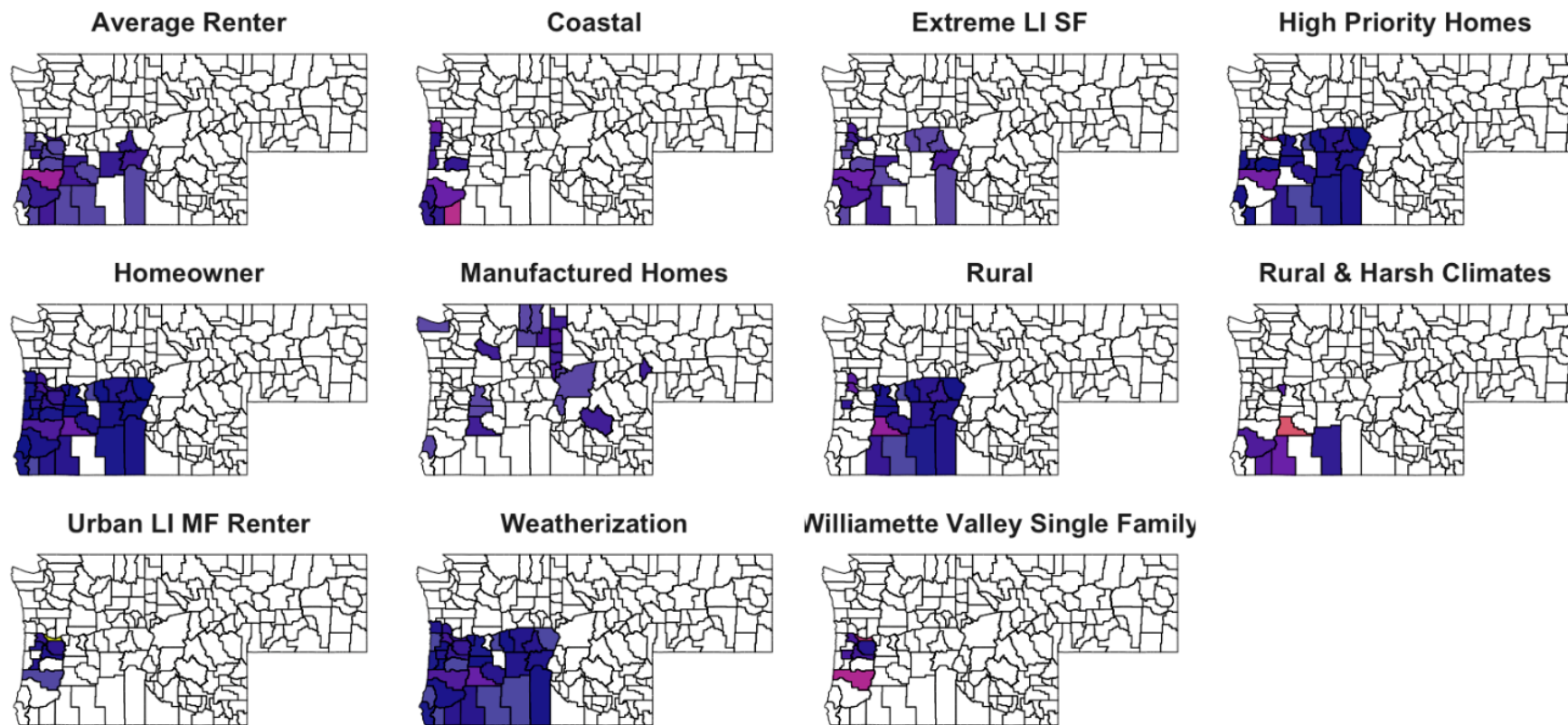
Added 3 customer groups to consider



**ANOVA (analysis of variance)**

Conducted nonparametric ANOVA analysis

# NORTHWEST ENERGY EFFICIENCY ALLIANCE (NEEA)'S RESIDENTIAL BUILDING STOCK ASSESSMENT (RBSA)



Percentage 20 40 60 80

*Percentage of sample size for each customer group from NEEA's RBSA*

# NONPARAMETRIC ANOVA ANALYSIS

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- Suggestion from public comment to do ANOVA analysis to determine five groups
  - ANOVA = “analysis of variance,” statistical method to compare the means of two or more groups
  - Nonparametric: Used because NEEA data is not normally distributed
- Compared groups to each other to determine statistical differences in customer groups
- Quantitative analysis to supplement feedback received about different customer groups

# RECOMMENDED ENERGY WALLET CUSTOMER GROUPS

- Yellow highlighting (#1 and #4) shows groups prioritized in feedback and ANOVA nonparametric analysis

#	Customer Group	Description
1	Average Homeowner	The average of all owner occupied single-family detached homes in Oregon.
2	Rural Home	The average of single-family detached home located in a rural region in Oregon.
3	High Priority Area Homes	The average of single-family detached home located within high priority area counties identified in Oregon's Ten-Year Plan. <sup>1</sup>
4	Manufactured Homes	The average manufactured home, assumes cost of energy is 70% higher than the average cost in Oregon.
5	Low-Income Renter (Multifamily)	The average reported low-income renter occupied multifamily home in Oregon, includes all multifamily building types.

## Inputs to Energy Wallet:

- Household consumption of all fuels (heating, plug loads, transportation) and associated costs
  - From NEEA and additional data sources
  - Includes average vehicle miles traveled per household
- Percentage change in cost of delivering energy over time
  - Output from Energy Modeling

# AIR QUALITY MODELING



# AIR QUALITY FEEDBACK

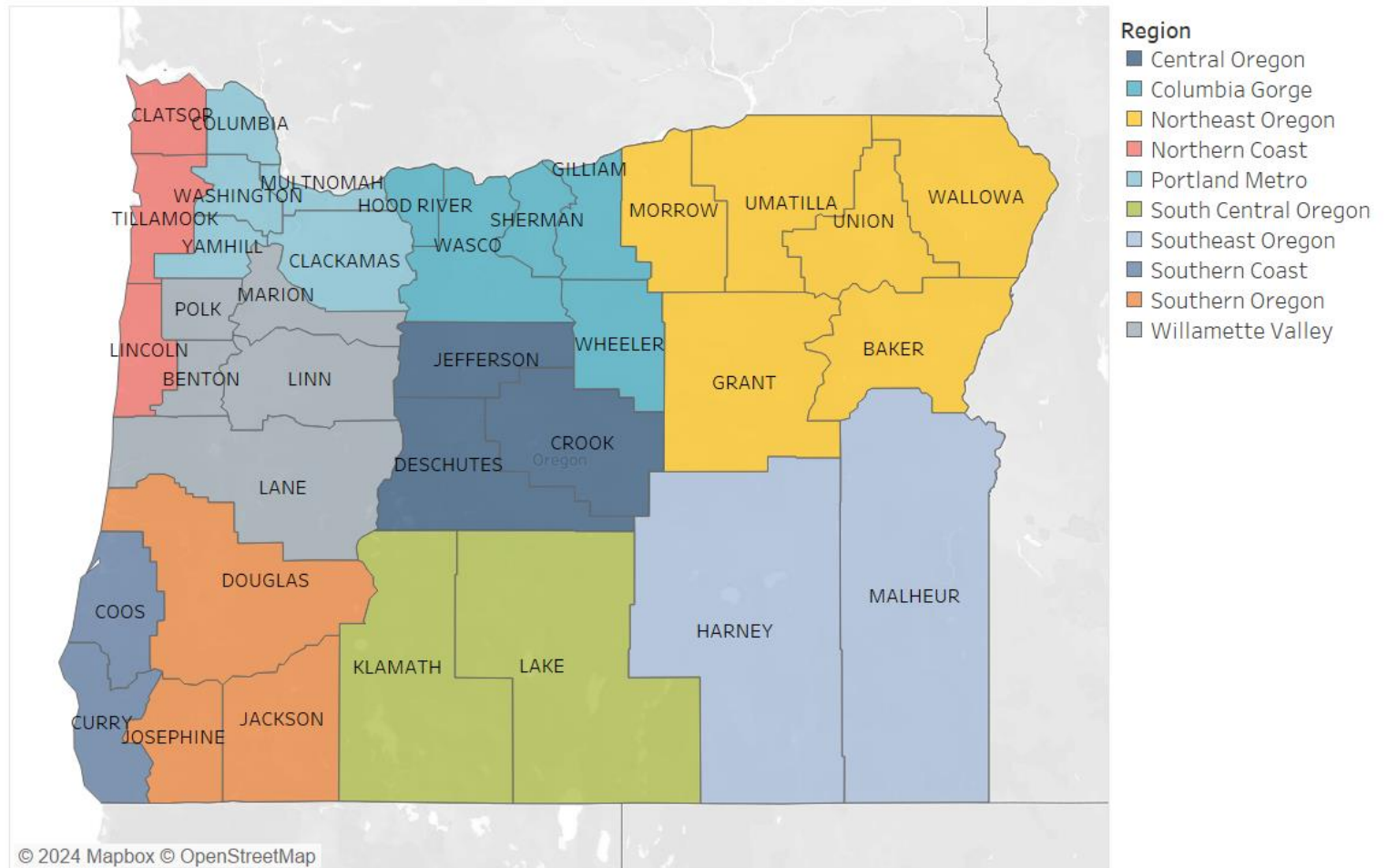
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- Support for air quality being considered as a key factor in the broader energy modeling and policy discussions
- Air quality impacts may differ based on the type of energy service provided in different areas (e.g., COU vs IOU)
- Air quality analysis will play a role in evaluating the environmental and health impacts of various energy pathways
- More detailed air quality analysis may be integrated as further datasets and geospatial mapping are developed

# COUNTY CLUSTERS FOR AIR QUALITY MODELING

- No recommended changes to the county clusters regions proposed in 11/06 EJ/Equity Approach Write up
- Final Approach: 10 Oregon regions for Air Quality modeling

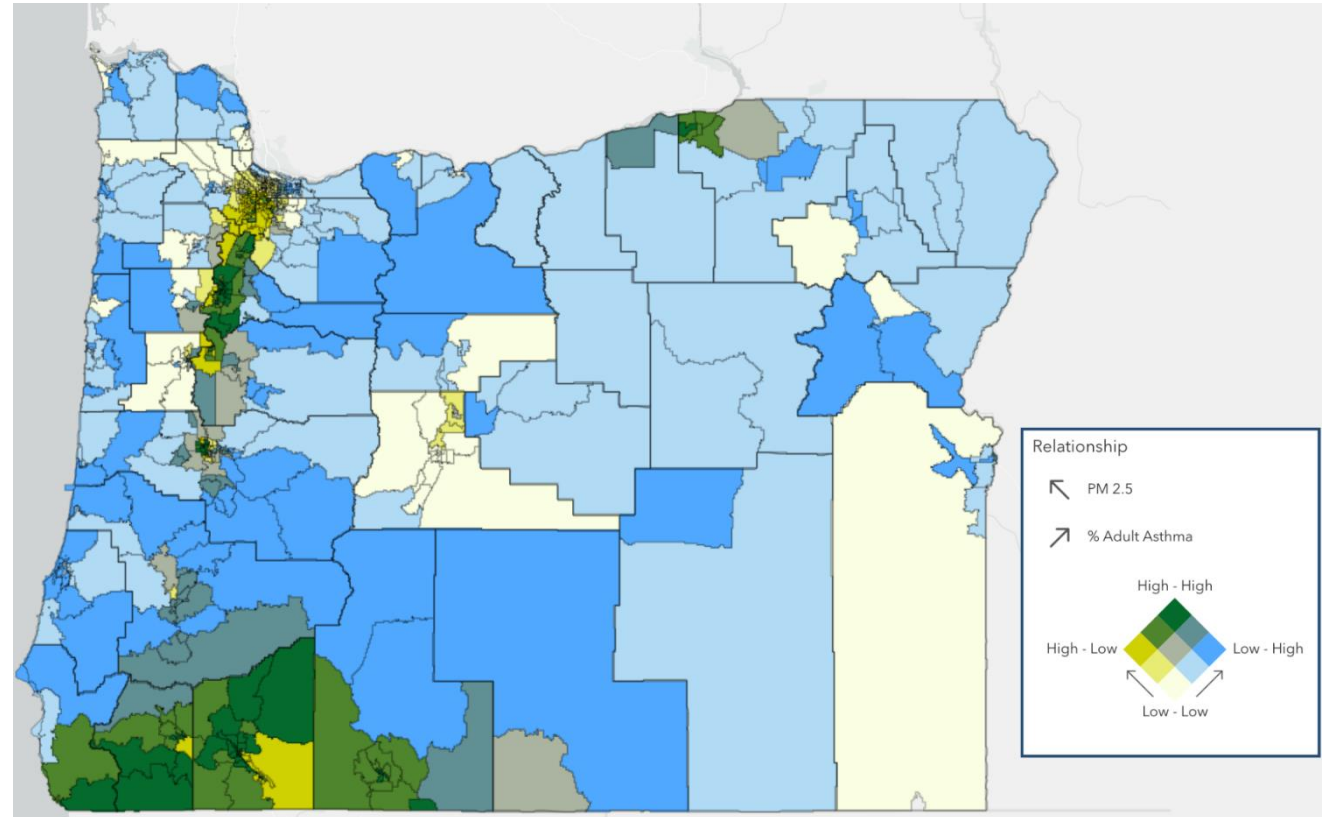
Proposed Regions for Air Quality Modeling



# GEOSPATIAL MAPPING

# GEOSPATIAL MAPPING

- Create 10-15 maps showing bivariate relationships
- Energy/justice-related variables at the census tract level
- Replicable approach with open-source data, code that can be posted to GitHub
- Identify communities with most pressing needs in the state for potential policy implementation



**Example Static Map:** Relationship map showing fine particulate matter (PM 2.5) and adult asthma prevalence (%).

Data Source(s): Climate and Economic Justice Screening Tool (CEJST), Centers for Disease Control (CDC) PLACES Data

# FEEDBACK RECEIVED

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- General support for proposed approach
- Specific indicators to prioritize:
  - Race, ethnicity, language, income, poverty, and education levels to provide equity lens
  - Add “Percent of Individuals Receiving Medicaid Benefits” and “Percent of Individuals Receiving Social Security Disability Income”
  - Indicator to help analyze wildfire-related air quality impacts
- Postpone selection of mapping variables until people have had a chance to comment on modeling, Energy Wallet, and Air Quality outputs
  - Will move forward with proposed 15 maps and remain flexible for creating more
- Produce an interactive map to help with future work
  - Not in scope for this project, but may be possible in the future

# GEOSPATIAL MAPPING FINAL APPROACH

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- **Bivariate indicator maps:**

1. Average energy burden & Percentage of manufactured homes
2. Fine particulate matter (PM 2.5) & Percentage of adult asthma prevalence
3. Projected wildfire risk & Percentage of individuals employed in agriculture, forestry, fishing, hunting, and mining
4. Percentage of households prioritized for IRA incentive households (0-80% AMI) & percentage of homeowners
5. Average energy burden & the percent of individuals with a non-institutionalized disability
6. DOT transportation barriers & Percent of individuals at or below 150% of the federal poverty line

- **Univariate indicator maps:**

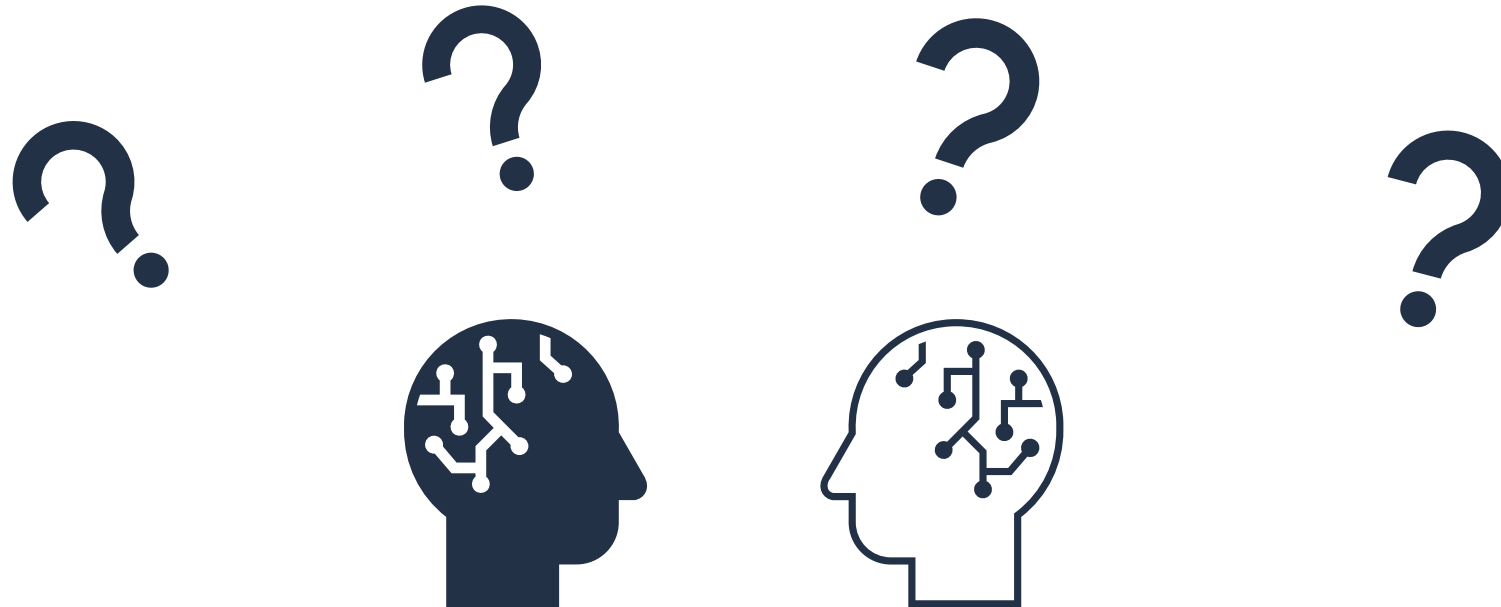
7. Percent of individuals without a HS diploma
8. Percent of individuals receiving Medicare
9. Percent of individuals who speak English “less than very well”
10. Percent of Black individuals
11. Percent of Hispanic Individuals
12. Percent of Native individuals
13. Percent of Asian individuals
14. Categorical map of rural communities
15. Categorical map of coastal communities

# CLARIFYING QUESTIONS

# Q & A

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*Any clarifying questions/thoughts on this approach?*





# WRAP UP



## Oregon Energy Strategy Working Group Meeting Schedule

Updated 12/05/2024

Introductory Meeting		
Review of model results and breakout to discuss policy starting point		
<b>In-Person Model Presentation</b>	January 31, 10-12pm	
<b>**All Working Groups Together** Meeting #1</b>	February 4, 9-12pm	
Breakout Meetings		
Topic Area	Breakout meeting #2	Breakout meeting #3
<b>EJ and Equity</b>	February 12, 9-11am	April 14, 9-11am
<b>Low Carbon Fuels</b>	February 19, 9-12pm	March 14, 9-12 pm
<b>Developing Clean Electricity Generation and Transmission</b>	February 26, 9-12 pm	March 17, 9 -12 pm
<b>Building Efficiency, Electrification and DERs</b>	March 5, 9-12 pm	March 19, 9-12pm
<b>Transportation Electrification</b>	March 4, 9-12 pm	April 10, 9-12pm
Closing Meeting		
Final Policy pre-draft presentation from all Working Groups		
<b>**All Working Groups Together** Meeting #4</b>	April 30, 9-12pm	

Environmental Justice and Equity	<ul style="list-style-type: none"> <li>EJ and equity focused discussions</li> <li>Provide EJ and equity perspectives in the other working groups</li> </ul>
Building Efficiency, Electrification, & Distributed Energy Resources	<ul style="list-style-type: none"> <li>Residential and commercial</li> <li>Customer-side of the meter</li> </ul>
Developing Clean Electricity Generation and Transmission	<ul style="list-style-type: none"> <li>Electricity generation and storage in front of the meter</li> <li>Transmission</li> <li>Development needs and barriers/competing priorities</li> </ul>
Low-carbon Fuels	<ul style="list-style-type: none"> <li>Opportunities for low carbon fuels in buildings, industry, and transportation</li> <li>Identification of barriers and potential solutions to production and distribution of fuels</li> </ul>
Transportation Electrification	<ul style="list-style-type: none"> <li>Light-, medium- and heavy-duty zero emission vehicles (battery electric and hydrogen fuel cell)</li> <li>Charging and fueling infrastructure</li> <li>Vehicle miles traveled reduction</li> </ul>



OREGON  
DEPARTMENT OF  
ENERGY

Thank you

