U.S. DEPARTMENT OF ENERGY

Office of ENERGY EFFICIENCY & RENEWABLE ENERGY

Energy Code Enforcement Challenges and Opportunities in Rural Communities

Building Energy Code Webinar Series

Building Technologies Office

March 21, 2024

Welcome

Building Energy Code Webinar Series

This webinar is being recorded. The video recording will be available on the webinar webpage next week.

A pdf of the full presentation is available now.

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Please place all questions for the speakers in the **Zoom Q&A feature**. We will do our best to answer all questions during the Q&A at the end.

Certificates of completion and AIA LUs are available for participating in today's live session. **A link to request a certificate or LUs will be provided at the end of the webinar.**

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BECP Webinar Series Lineup

Catch the entire lineup of sessions the third Thursday of each month @ 1p ET.

- 9/21/23: How Building Codes Facilitate Resilient Communities
- 10/19/23: Strategies to Equitably Expand the Energy Codes Workforce
- 11/16/23: What You Need to Know About the New Energy Standard for Commercial Buildings: ASHRAE 90.1-2022
- 1/18/24: Best Practices for Understanding and Improving Compliance: Field Studies, Circuit Riders, and More
- 2/15/24: Addressing Existing Buildings: Building Performance Standards and Implementation Support Tools
- 3/21/24: Energy Code Enforcement Challenges and Opportunities in Rural Communities
- 4/18/24: The Intersection of Energy Codes and Electrical Codes on the Road to Decarbonization
- *No webinars in May and June*

> Learn more: www.energycodes.gov/becp-energy-code-webinar-series

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Learning Objectives

1. Understand unique energy code compliance challenges in rural communities
2. Learn about current solutions like community technical support bring used by code officials
3. Discover opportunities for future improvements in rural code enforcement and compliance
4. Hear about data analysis and compliance assessment best practices being used in the field

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Energy Code Enforcement Challenges and Opportunities in Rural Communities

Building Energy Codes Program Webinar

March 21, 2024

Northwest Energy Efficiency Alliance

neea

Avista
Bonneville Power Administration
Cascade Natural Gas Corporation
P.U.D. Chelan County
Clark Public Utilities
EnergyTrust of Oregon
Idaho Power An IDACORP Company
NorthWestern Energy
NW Natural
Pacific Power
Portland General Electric
PSE Puget Sound Energy
Seattle City Light
Snohomish County PUD Public Utility District No. 1
Tacoma Power Tacoma Public Utilities

Speakers

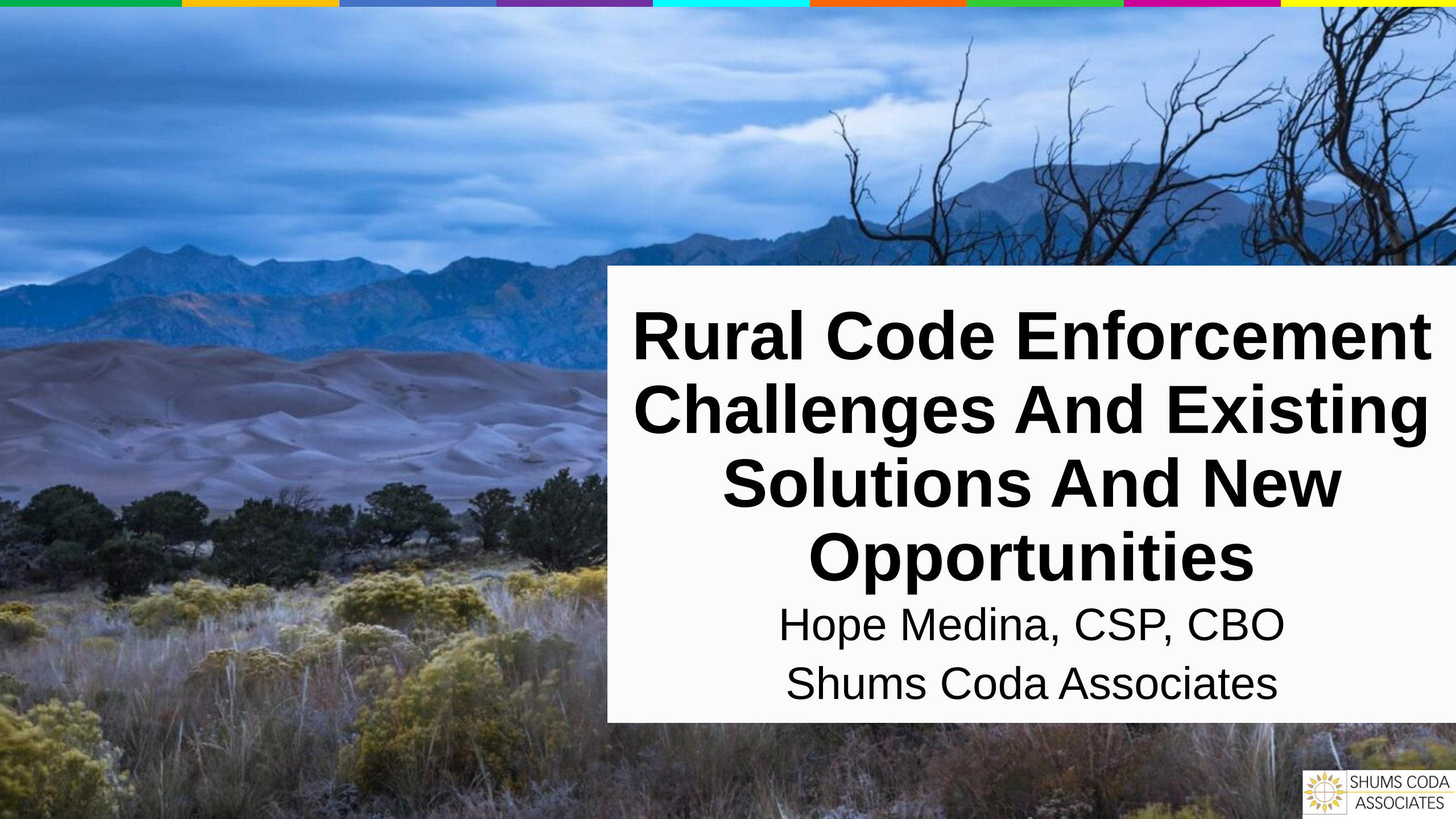
- **Hope Medina** – Shums Coda Associates
- **Bobbi Kaufman and Jeni Larsen** – Clearwater County, ID
- **Daniel Kaufman** - Industrial Economics (IEc)

- Tess Studley (NEEA), moderator

Rural Energy Code Enforcement

What you will hear today:

- Direct experience from those “in the field”
  - Common themes across multiple rural jurisdictions
  - Day to day challenges from a rural county
- Lessons learned from code compliance field studies in Montana and Idaho



Rural Code Enforcement Challenges And Existing Solutions And New Opportunities

Hope Medina, CSP, CBO
Shums Coda Associates

SHUMS CODA ASSOCIATES

Rural Areas Are Often Neglected With Statewide Mandates

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What Happens When A State Takes Their Rural Area Into Account With Adoption?

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Underserved Areas

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How a Friendly Visit Turned into a Cohort

San Luis Valley Region Cohort

- City of Alamosa
- Alamosa County
- Rio Grande County
- Conejos County
- Costilla County
- Del Norte
- Saguache County
- Town of Saguache
- Center
- Monte Vista
- South Fork

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San Luis Valley Region Cohort Approach

- Adoption of newer codes
- Share the load for adoption work
- Consistency across the region
- Assist the building community
- Ability to share resources
- Allows for learning together
- Cooperative approach to code compliance

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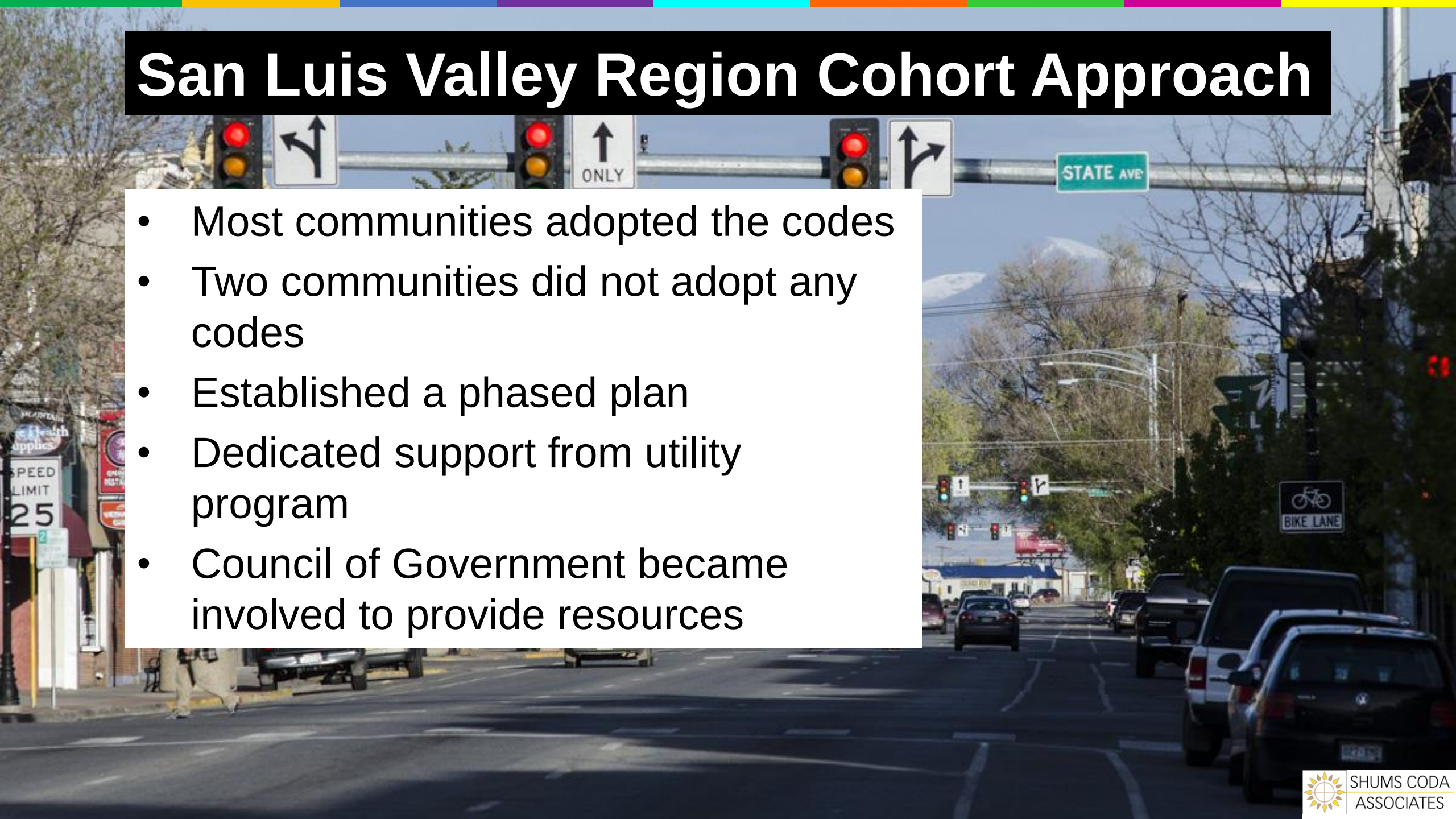
San Luis Valley Region Cohort Approach



- Most communities adopted the codes
- Two communities did not adopt any codes
- Established a phased plan
- Dedicated support from utility program
- Council of Government became involved to provide resources

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San Luis Valley Region Cohort Approach What Needs to Be Taken Into Account?

- Multiple communities had never adopted any codes
- Create a building department
- Get books
- Add staff
- Need training
  - Staff
  - Building Community
- Need support
- Continued assistance

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THANK YOU

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Hope Medina, CSP, CBO
hope.medina@shumscoda.com

SHUMS CODA ASSOCIATES

Clearwater County, Idaho

Get to know us:

- **Bobbi Kaufman**:
  - Clearwater County Planning & Zoning Administrator, Certified Floodplain Manager, & President of Idaho Permit Technicians

- **Jeni Larsen**:
  - Clearwater County Building Official

Clearwater County is Expanding

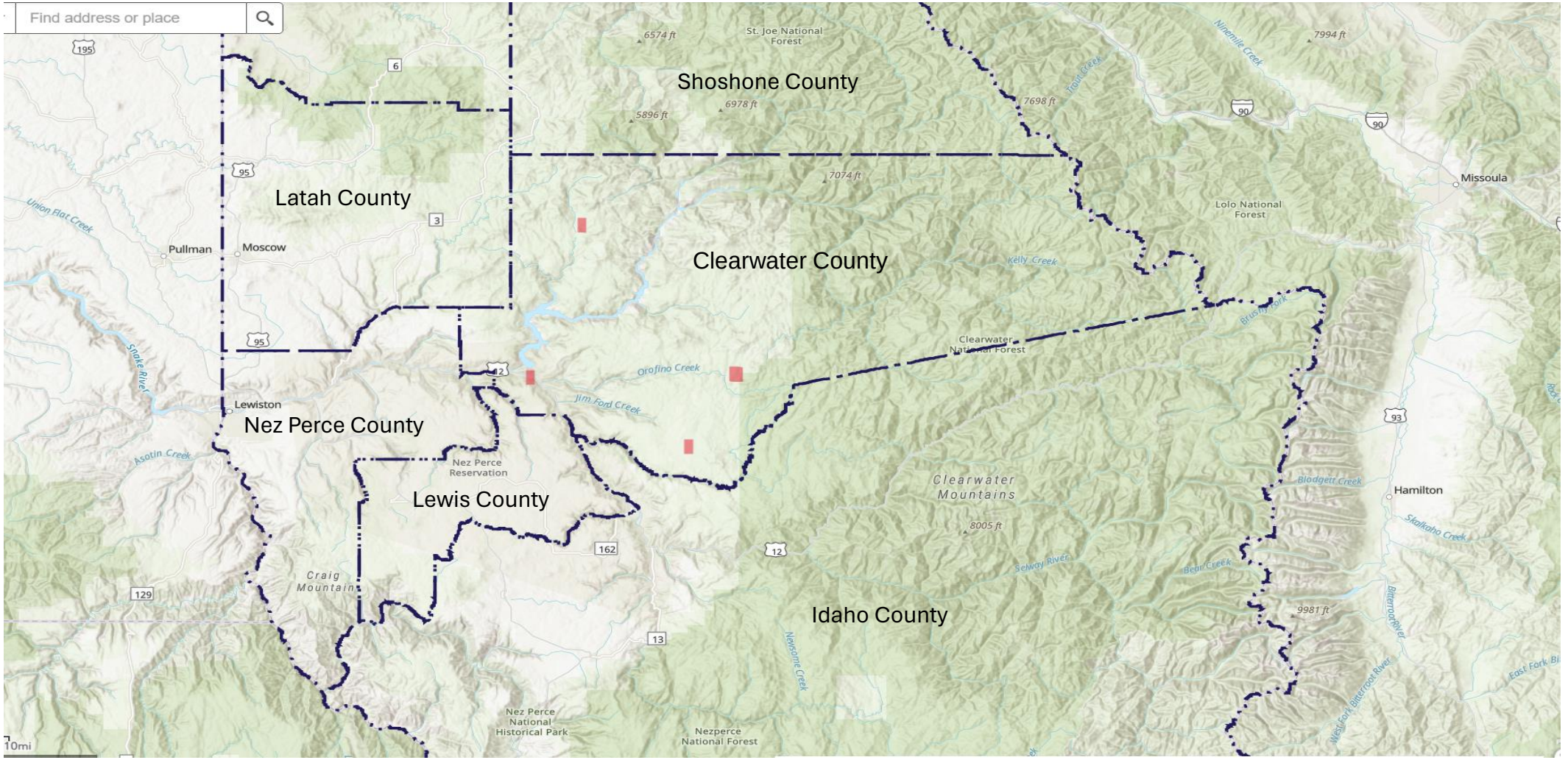
- 1,570,876.102 acres
    - 6,000 homes (not including Manufactured homes)
- Cities with in: Orofino, Weippe, Peirce, & Elk River
    - Ahsahka, Kendrick, Lenore, Peck additional zip codes
- Drive time
- 220 – Number of permits for SOME type of living space in 2023
    - Bunk houses, cabins, studios, shouts/barndominium, Manufactured homes, additions, single family homes, and change of use permits
    - Permanent structures
        - Shipping containers
        - Hickory sheds

Jurisdictional Permits

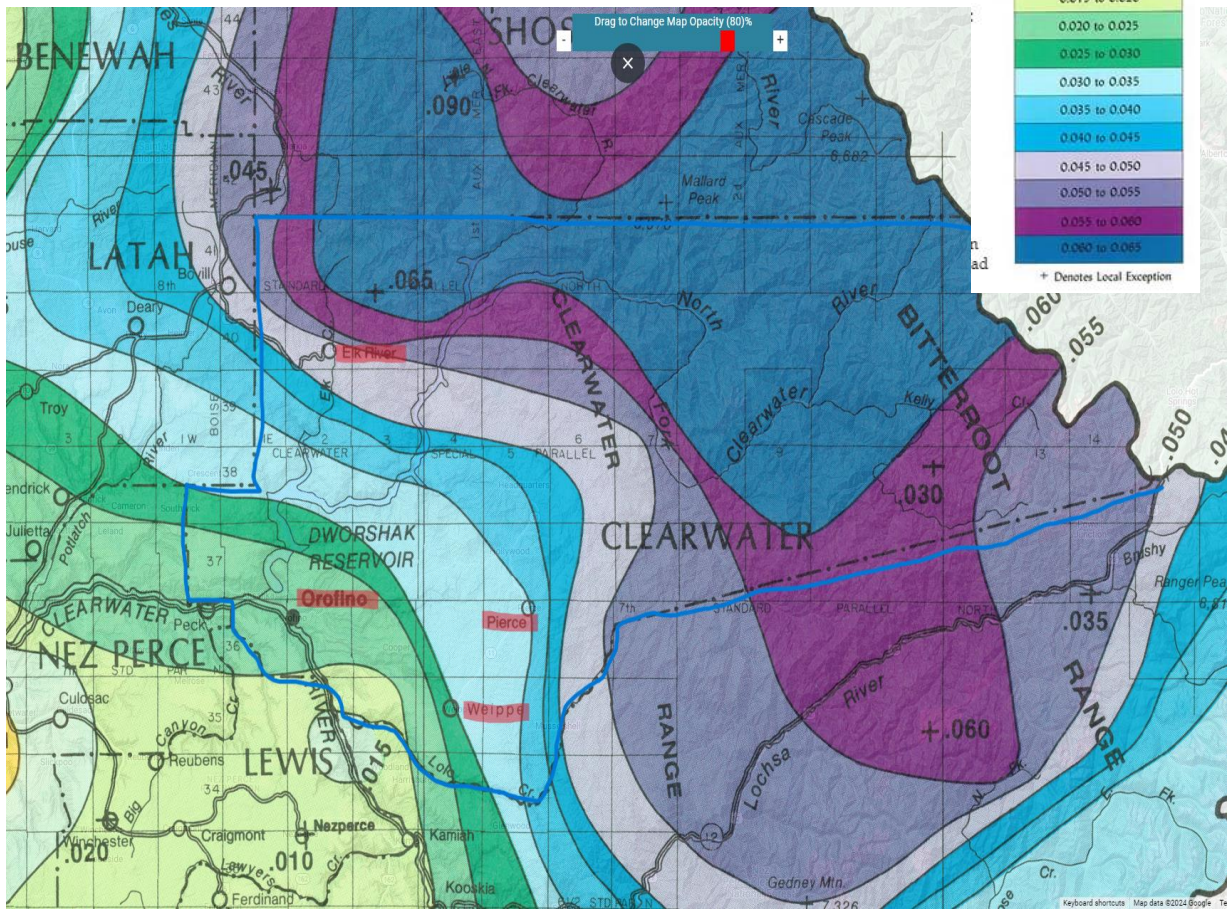
- Clearwater County issues residential, commercial, and location permits.
- Public Health Idaho North Central District issues septic permits.
- State of Idaho issues electrical, plumbing, and mechanical/HVAC permits.

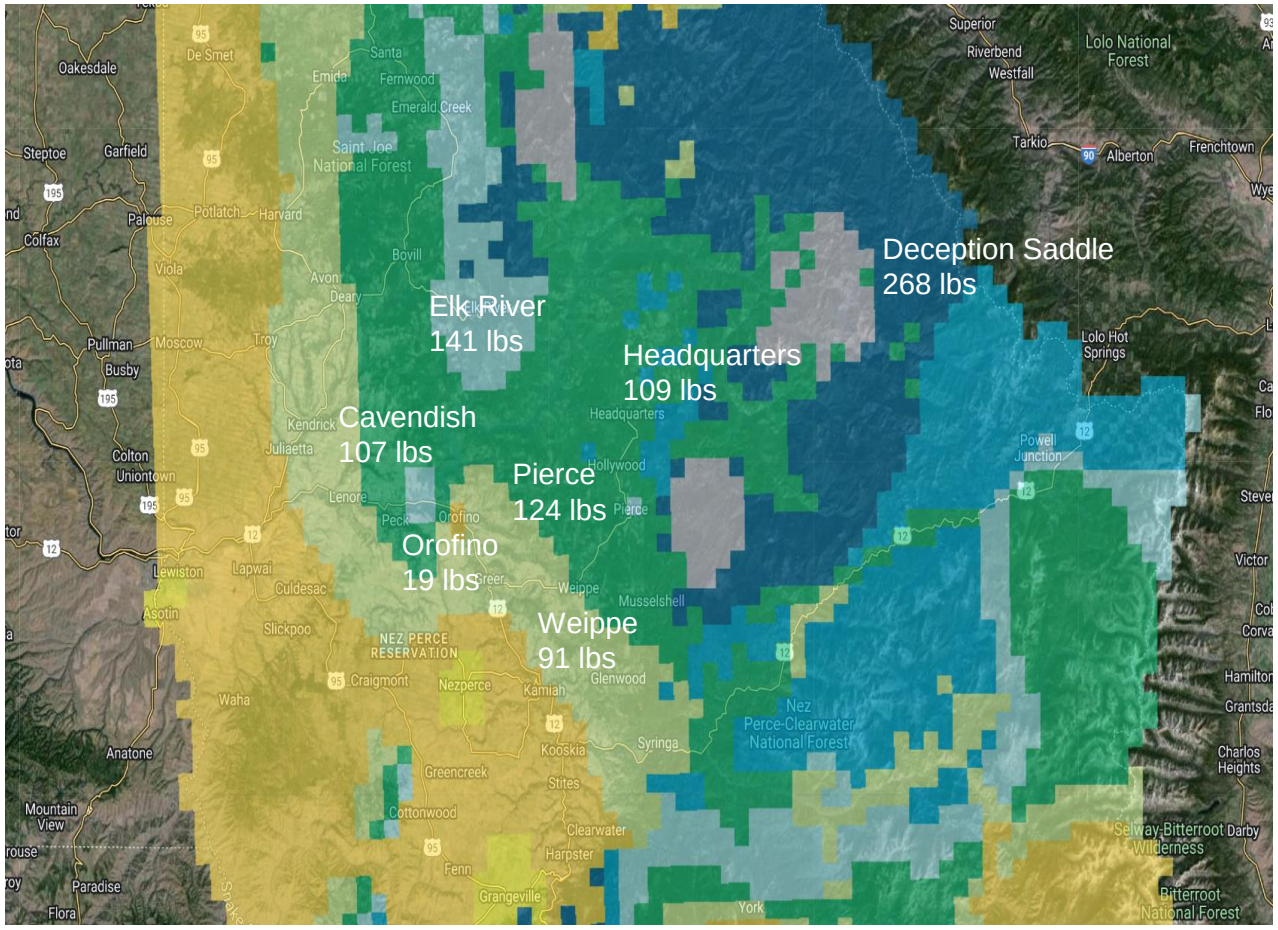
- County oversees energy code; however, because the State issues the mechanical/HVAC permits, communication of each jurisdictions' responsibilities gets very challenging.

- # Geography of Clearwater County
  -Elevation change
  -Surrounding Counties



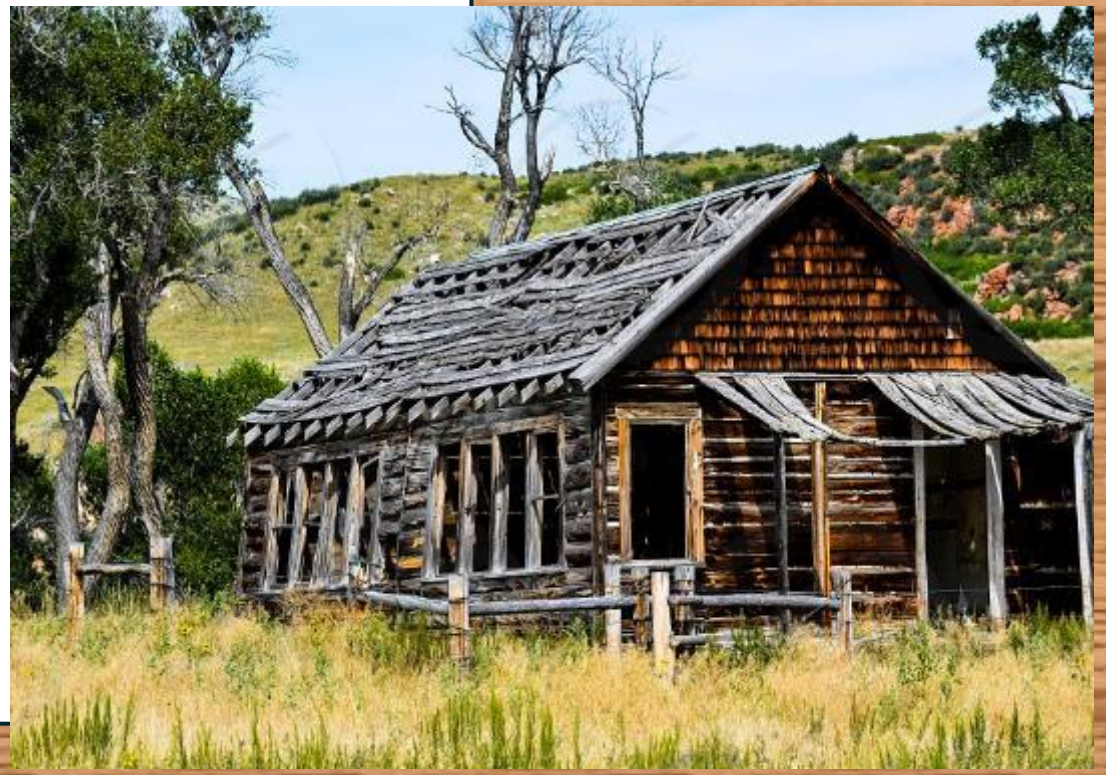
University of Idaho Ground Snow Load Map
-Differences in Snow Load
-Frost depth
-Manual JDS





Challenges

- Supply stores, Contractors and even homeowners
  - Peers are informing
- Jurisdictional turn over
  - Positions given without training
- Knowledge about energy efficiency
- Rural Clearwater County
  - Off Grid homes
  - Not thinking about the future
- No Idaho REScheck exists



Things that would benefit

- Trainings that can be for EVERYONE
- Energy Circuit Rider physically visiting local jurisdictions again
- Create standard check lists
- Idaho-specific REScheck as an option
- Meetings to bring all the different inspectors, contractors and installers together
  - State inspectors are organized by zip codes and by number of inspectors
  - Respecting other inspector jurisdictions
- Understanding where energy code fits, within your jurisdiction
  - State and County plan review for energy code compliance

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Compliance Assessment Best Practices in Rural Communities

BECP WEBINAR

March 2024

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Discussion Topics

1. Differences in permit data availability in urban vs. rural areas
2. Lessons learned about using permit data to study compliance
3. Limitations to DOE's sampling approach, which is focused more on urban areas

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Differences in Permit Availability

- In MT and ID, not all jurisdictions issue building permits.
  - MT: 41 out of 87 permit-issuing localities (per US Census building data) do not issue building permits
  - ID: At least three counties do not issue building permits
- Permit data is typically easier to obtain from larger/urban areas, compared to smaller/rural areas.
  - Larger/urban areas more frequently have online portals (easy to access permit data)
  - Staffing: Refusals were higher in rural areas with fewer staff to compile permit data and/or respond to requests
  - Some smaller/rural jurisdictions only have paper records

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Additional Challenges

- Permits often did not include usable energy information:
  - Some permits did not have any energy code information
  - Energy code information was often limited to pass/fail rather than specific values that could be used to conduct analysis
- Some code officials indicated they were unable to fully check aspects of the energy code.
- Permits in larger/urban areas were more likely to contain energy code data than permits in smaller/rural areas.

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Differences in Permit Availability and Additional Challenges – Summary of Outreach

	Idaho	Montana
Jurisdictions Contacted	**40**	**21**
Provided permit data with energy code information	12	1
Provided permit data with no energy code information	0	7
Do not enforce code locally or informed us do not have adequate data	10	5
Refused	2	0
Did not respond/stopped responding	16	8

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Lessons Learned About Using Permit Data to Study Compliance

- Permits are often unavailable or lack energy code data.
- Areas where compliance may be lowest (rural, difficult to enforce) are often the ones with the least permit availability.
  - Available permit data may overestimate compliance
- Permit data are usually limited to issued (final) permits.
  - Since permits are only issued when a home complies, permits with pass/fail data often only show “passing” homes
  - Data for homes that did not initially pass are not available
- In Montana, permit data do not support compliance studies.
- In Idaho, permit data can be used, but need to be supplemented with on-site inspections.

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Lessons Learned About Using Permit Data to Study Compliance

- Energy code information in permits is often limited to building *plans*, rather than verified inspection data.
- Even where "good" data are available, permits still have gaps for several key measures:
  - Rarely had reliable lighting or blower door test information
  - Permit data do not contain installation quality of insulation
    - Cannot assess insulation measures without using assumptions from on-site data collection
  - Only windows and ceiling insulation (found to be consistently grade I) could be pulled entirely from permit data

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Limitations to DOE's Sampling Approach for Assessing Compliance in Rural Areas

- DOE sample is weighted toward building activity.
  - Statistically representative of the state, but emphasizes populated areas with the most building activity
- Number of small/rural communities represented is too low to make statistically significant calculations of compliance rates, or to compare between urban and rural areas.
- Many of the smallest communities are not represented at all.

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Limitations (cont.)

Location	Climate Zone	# of Homes in Sample	Population	Population Rank
County A	5B = Cool Dry	20	497,494	1
County B	5B	12	235,006	2
County C	5B	6	173,396	3
County D	6B = Cold Dry	4	124,490	4
County E	6B	3	11,813	28
County F	5B	3	25,571	14
County G	5B	2	90,592	5
County H	6B	2	11,830	27
County I	6B	2	52,487	7
County J	6B	2	21,626	18
County K	6B	1	87,434	6
County L	6B	1	31,383	12
County M	5B	1	19,250	19
County N	6B	1	47,976	9
County O	6B	1	14,376	22
County P	6B	1	24,859	15
County Q	5B	1	42,200	10
Total Sample, 1-10 largest in state				*49*
Total Sample, 11-20 largest in state				*8*
Total Sample, 21-30 largest in state				*6*
Total Sample, 31-40 largest in state				*0*
Total Sample, 40+ largest in state				*0*

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Conclusions

- Smaller/rural areas do not always issue permits.
  - Reflects differences in enforcement approaches and capacity.
- When they do, the permit data is often hard to access.
  - Barriers include lack of online portals, paper records, and limited staff time to compile permit data.
- Permit data does not consistently address energy code or contain energy values.
- In Montana, permit data is not useable for statewide compliance studies. In Idaho, gaps exist for key measures.
- On-site inspections can fill gaps, but DOE's sampling approach does not provide a full view of small/rural areas.

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Questions?

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Thanks!

Building Energy Code Webinar Series

For more information on today's topic, as well as a range of additional training materials and technical assistance resources, visit:

> energycodes.gov

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What's Next?

The Intersection of Energy Codes and Electrical Codes on the Road to Decarbonization

Thursday, April 18 @ 1:00 pm ET (12 CT / 11 MT / 10 PT)

Learn more about upcoming webinars at:
www.energycodes.gov/becp-energy-code-webinar-series

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