



# Governor's Office of Energy

## GOE Updates

*April 18, 2022*

Robin Yochum, Energy Program Manager

# Updates

## DOE RFI on Cost-effective Implementation of Updated Building Energy Codes

- The U.S. Department of Energy (DOE) [Building Technologies Office](#) (BTO) has issued a [request for information](#) from the public that will inform the program development and execution of Section 40511 of the Infrastructure Investment and Jobs Act. This provision makes \$225 million available to states, local governments, and partnerships through grants to help them drive the cost-effective implementation of building energy codes for improved efficiency and resilience.

## SEDAC - BEE Fundamentals

- [Webinar](#) on the launch of the program – 4/20 10am-12pm
- Interested in attending – email [info@energy.nv.gov](mailto:info@energy.nv.gov) for the link

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# Updates

## DOE funding on electrification of space & water heating

- GOE in collaboration with [New Buildings Institute \(NBI\)](#) to provide resources and education to design and construction professionals and policy makers to understand and implement practices in the design and installation of electrification of space and water heating.
  - Publicly available education resources & training guides
  - Developing learning sequences for
    - Policy Makers
    - Contractors
    - Designers
    - Code Officials
  - Interested in participating – email [ryochum@energy.nv.gov](mailto:ryochum@energy.nv.gov)

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# Updates

## ICC Councils and Committees

- The [Membership Councils](#) offer members a place to come together and be a more powerful force shaping your association, your industry, your career and your future.
- Six discipline-specific Membership Councils
  - Building Membership Council
  - Fire Service Membership Council
  - PMG Membership Council (plumbing, mechanical, fuel gas, pool & spa)
  - Sustainability Membership Council
  - ICC Global Membership Council
  - Emerging Leaders Membership Council
- Encourage everyone who is a member of ICC to participate on the council that best suits your career.

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# CONTACT US

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# Remote Virtual Inspections (RVI): Challenges and Opportunities



Nevada Energy Codes Compliance Collaborative

April 18, 2022

# Presenter

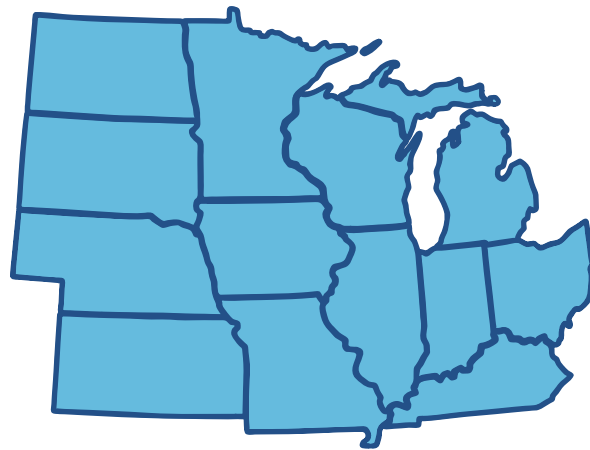


**Alison Lindburg**  
*Midwest Energy Efficiency  
Alliance (MEEA)*

# Midwest Energy Efficiency Alliance

The Midwest Energy Efficiency Alliance (MEEA) is a collaborative network, promoting energy efficiency to optimize energy generation, reduce consumption, create jobs and decrease carbon emissions in all Midwest communities.

MEEA is a non-profit membership organization with 160+ members, including:



Electric &  
gas utilities



State & local  
governments



Academic &  
Research institutions



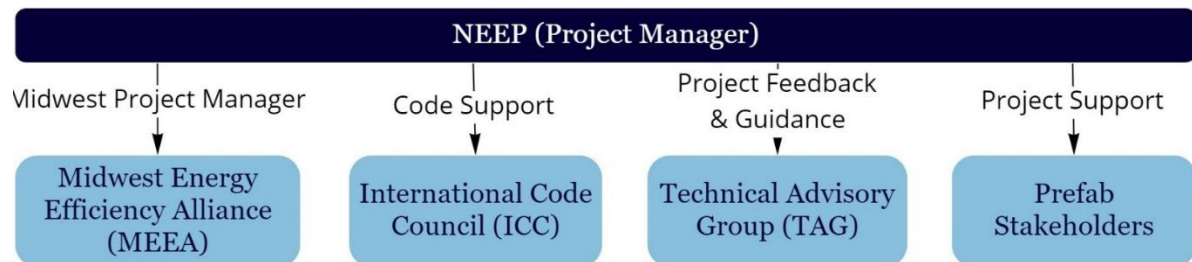
Energy service  
companies &  
contractors



# Project Team

## *Project Collaborators*

- Department of Energy (DOE) funded project
- Project Leads: NEEP & MEEA
  - NEEP Project Lead: Cornelia Wu
  - MEEA Project Lead: Alison Lindburg



## Project Context

Why are we interested in Remote Virtual Inspections?

# Project Introduction

## *Remote Virtual Inspections*

Remote Virtual Inspections (RVI's): inspections which use visual or electronic aids to allow an inspector to observe certain types of construction or materials from a distance.



Project goals:

**Support** the increased market presence of RVI

**Create** technical resources that will inform and support industry growth

**Develop** educational/technical resources for virtual inspection stakeholders



# Remote Inspection & Electronic Plan Review Survey

Overview and Methodology

Supported by ICC, NEEP, MEEA



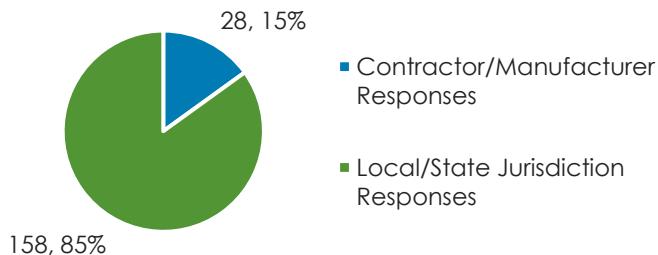
# RVI General Survey Results

## All Datasets

- One survey effort with two sets of questions for:
  - **Contractors/Builders and Product/Component Manufacturers**
  - **Local/State Jurisdictions**
- 319 Responses, 186 usable responses
  - 158 Local/State Jurisdictions
  - 28 Contractor/Manufacturer
- Promulgated March 2021

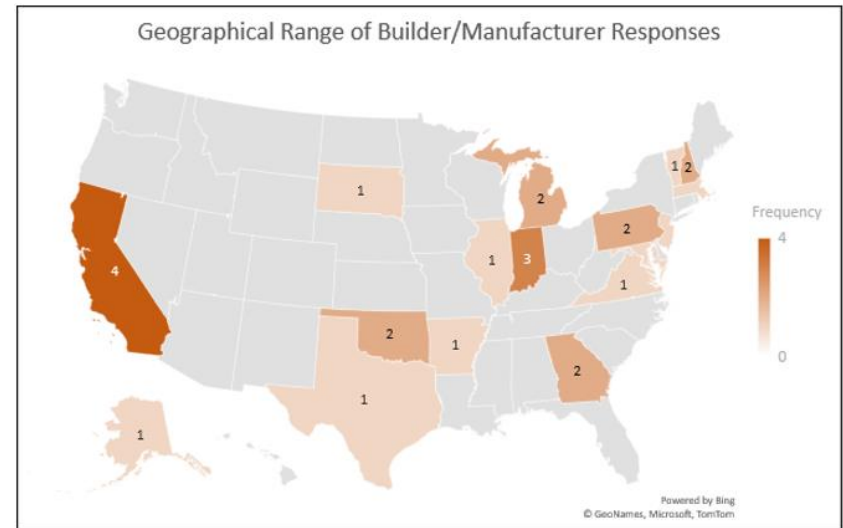
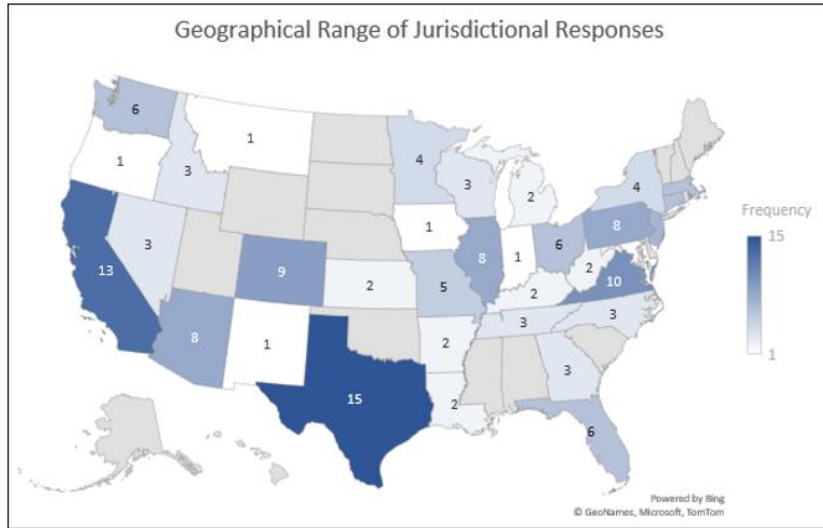
Row Labels	Count	%
Midwest	41	22%
Northeast	41	22%
South	48	26%
West	53	29%
Grand Total	183	

Results by Question Set



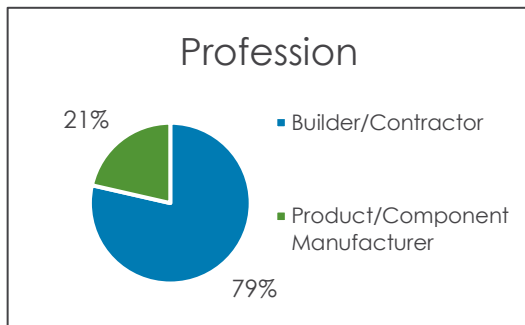
# Geography

- 39 states
- 2 countries
- 7 total national, multi-state, international responses

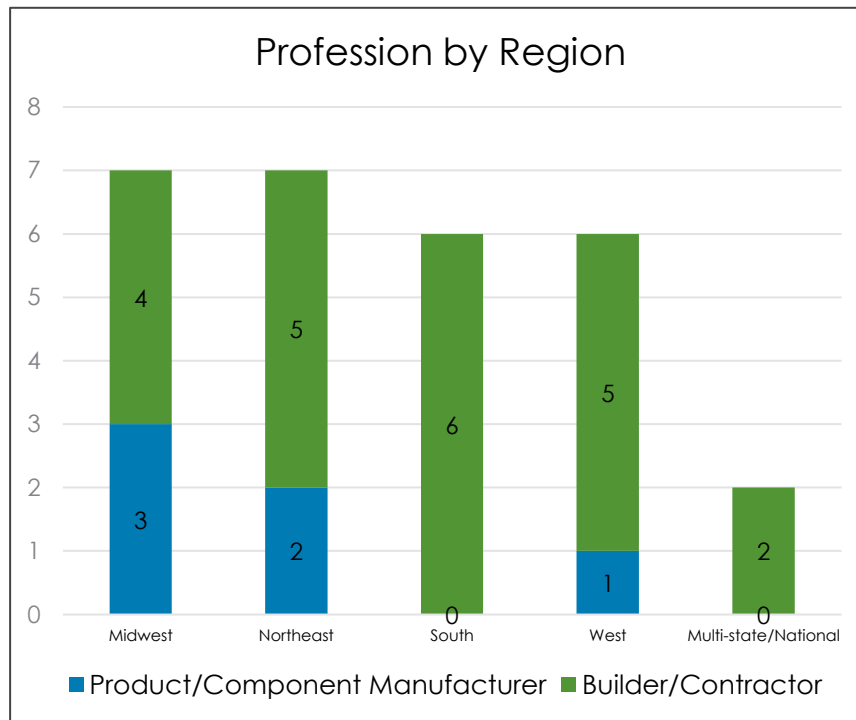




# Builders/Contractors + Product/Component Manufacturers



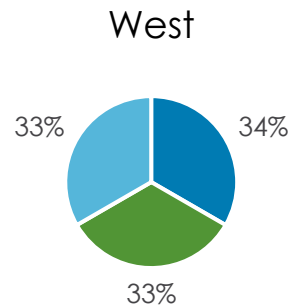
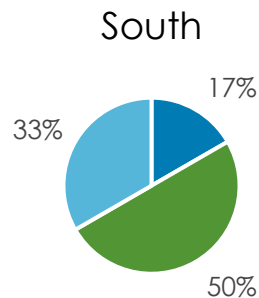
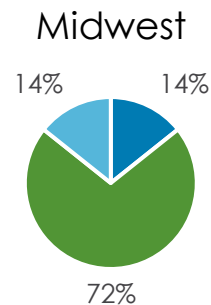
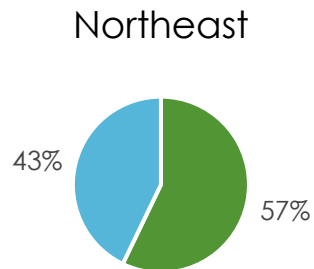
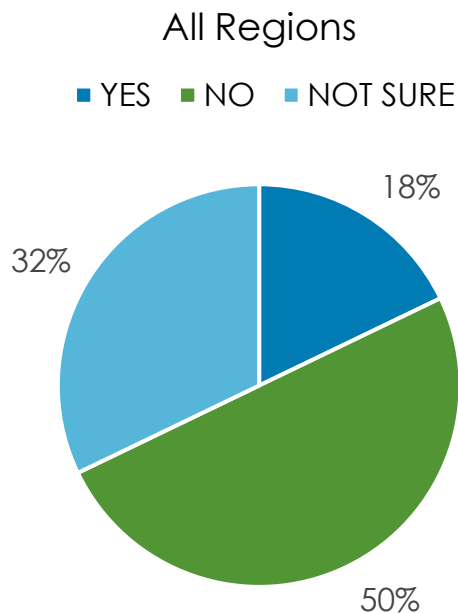
Regions	Count
Midwest	7
Northeast	7
South	6
West	6
Multi-state/National	2
International	0
No Response	0
Total	28



# Current RVI Use in the United States

# Remote Virtual Inspection (RVI) Availability

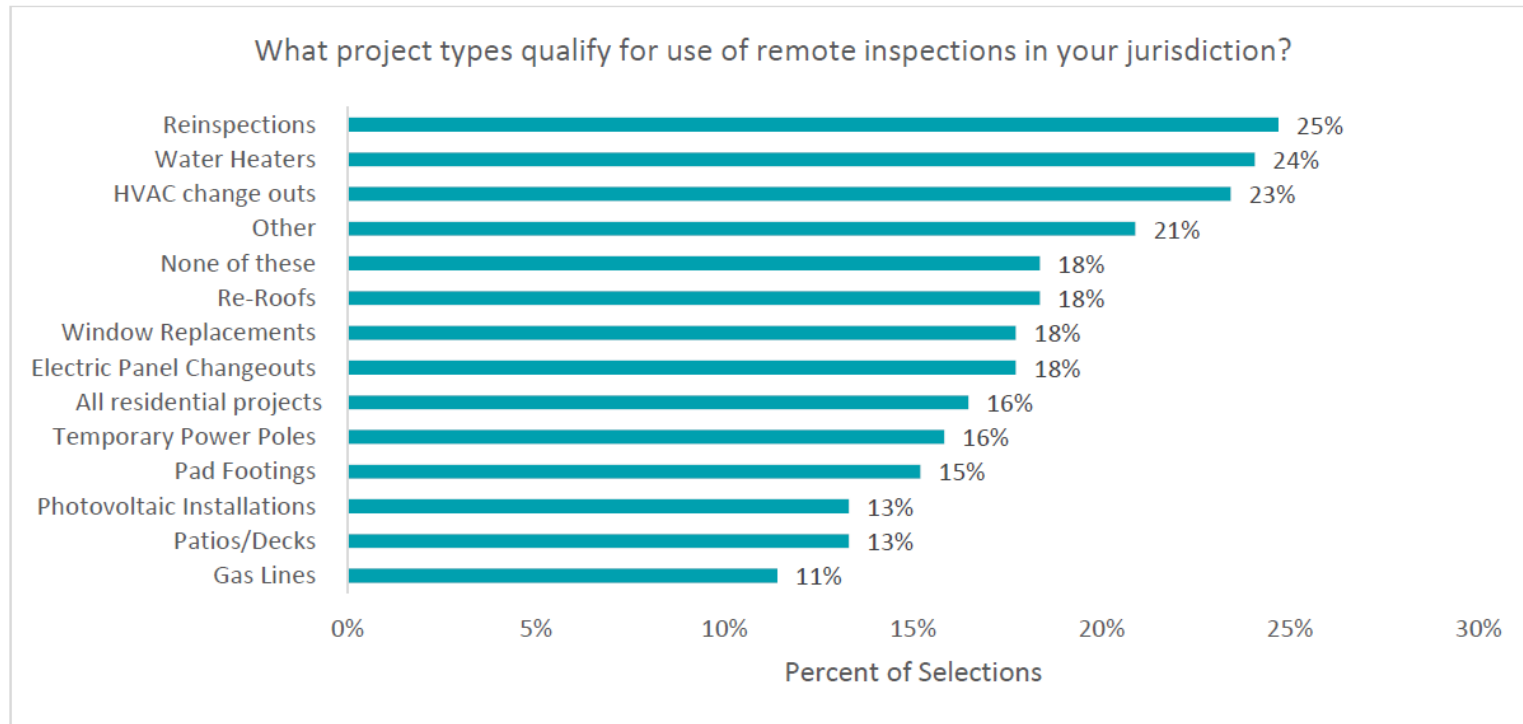
*Builders/Contractors + Product/Component Manufacturers*





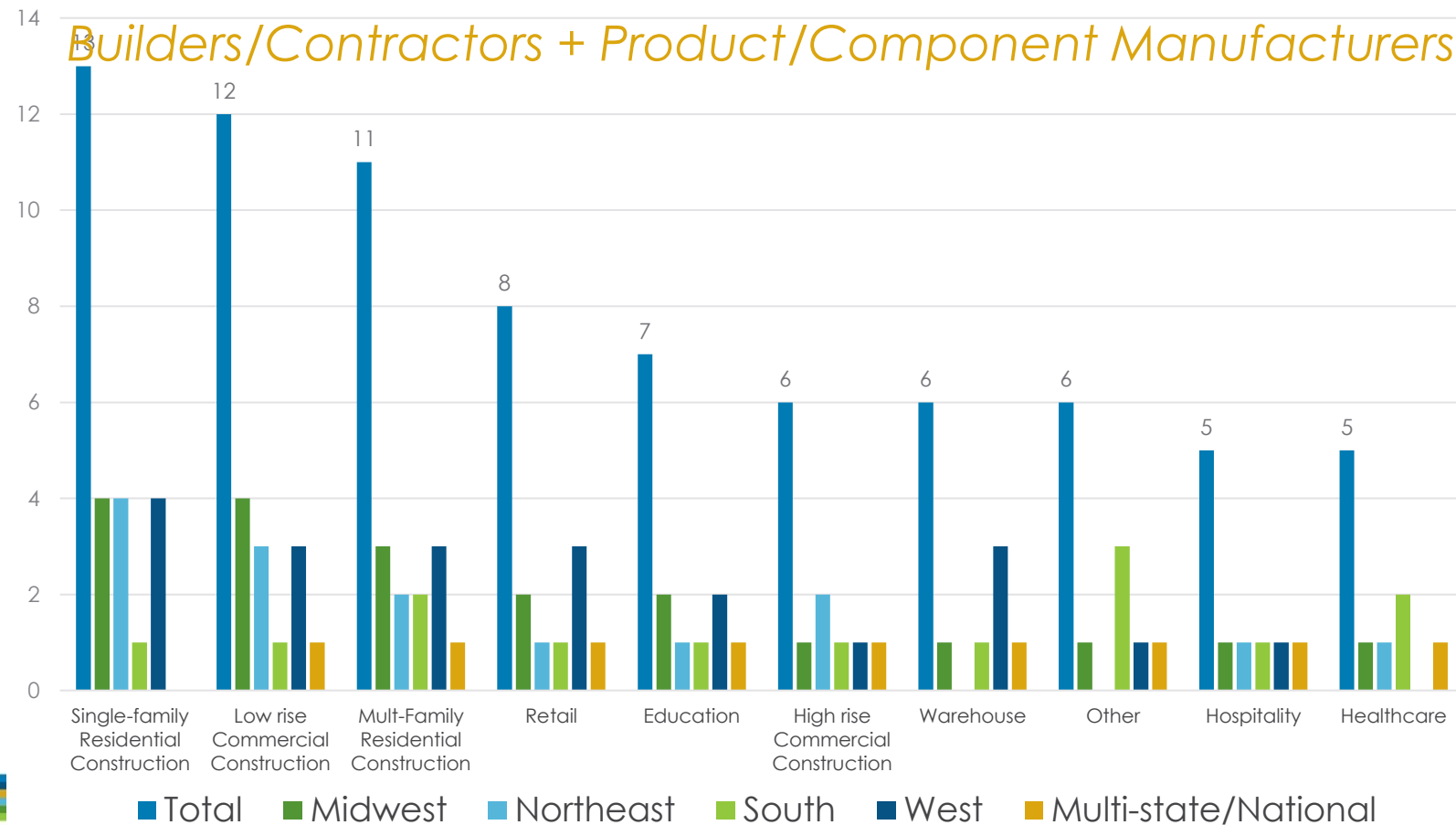
# Q: Remote/Virtual Inspection (RVI) Use

## *Jurisdictional Responses*



# Q: Off-Site Construction by Building Type

*Builders/Contractors + Product/Component Manufacturers Results*

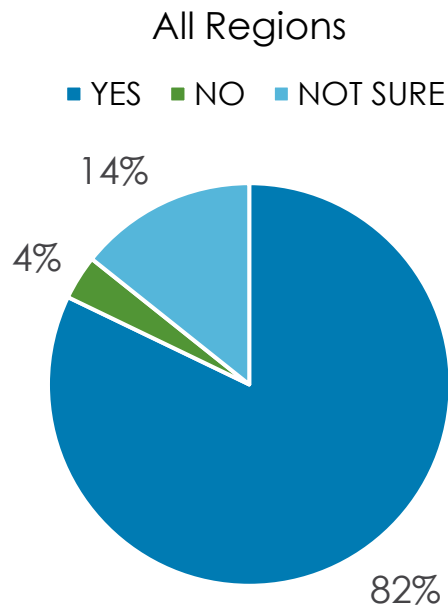


# Electronic Plan Review

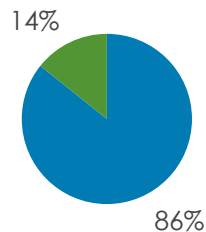


# Q: Electronic Plan Review Availability

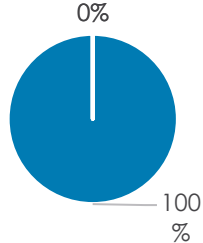
*Builders/Contractors + Product/Component Manufacturers*



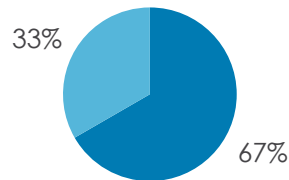
Northeast



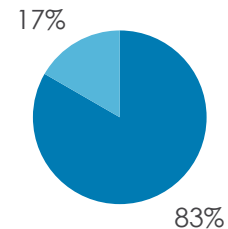
Midwest



South

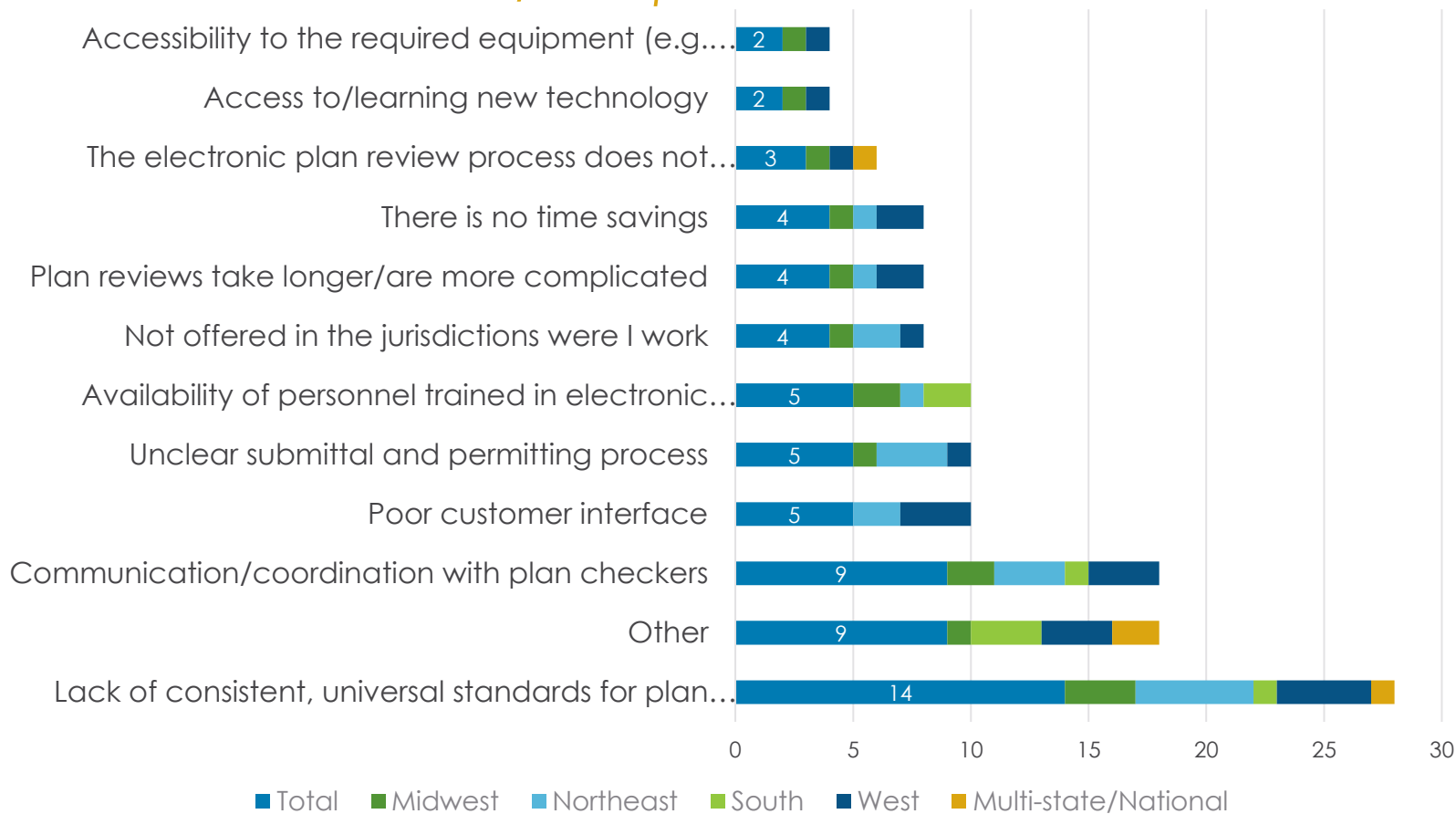


West



# Q: Electronic Plan Review Barriers

## Builders/Contractors + Product/Component Manufacturers Results

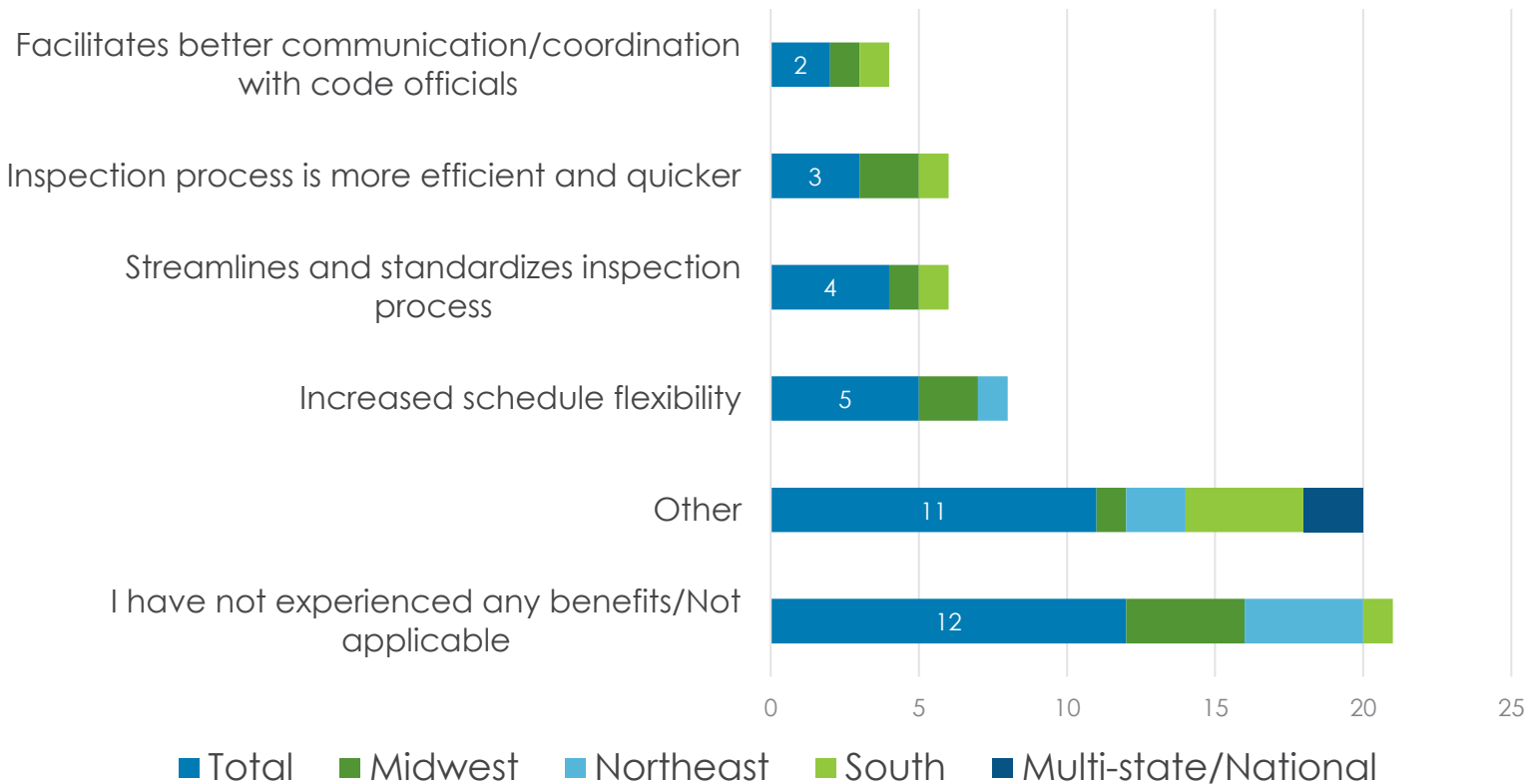




## Benefits of RVI

## Q: Benefits of Remote/Virtual Inspections for Off-site Construction

### *Builders/Contractors + Product/Component Manufacturers Results*



# Benefits of RVI

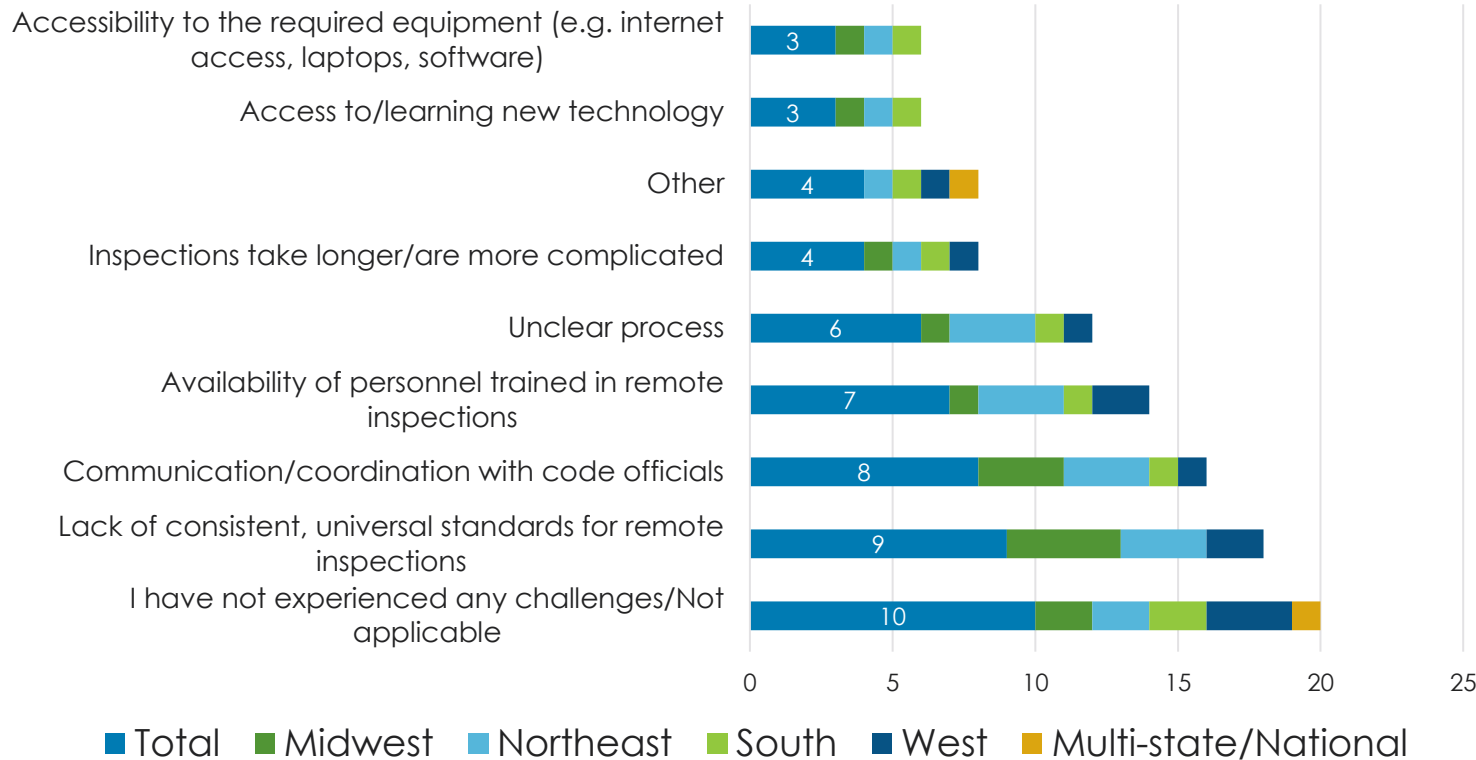
## *RVI Brief*

- Cost and Time Savings
- Improved Health and Safety and Time Savings
- Improved Technology and Record-Keeping
- Expanded Reach

# Challenges to RVI

## Q: Challenges in RVI

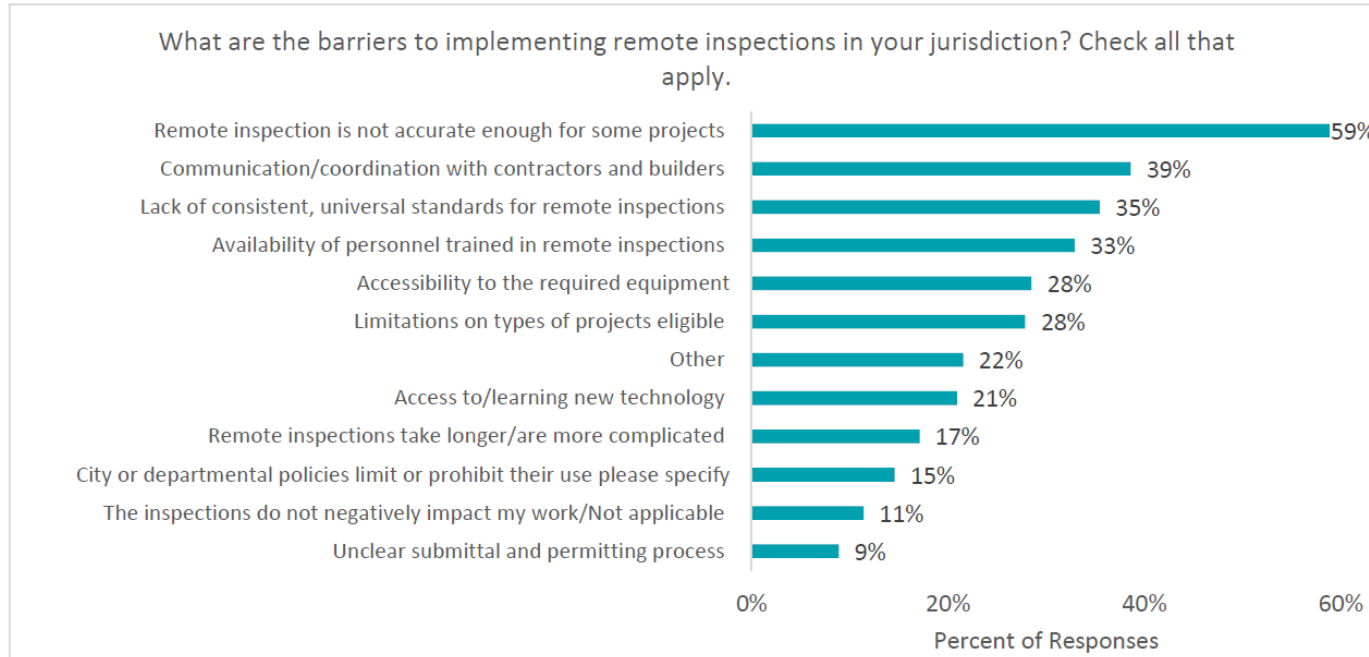
### *Builders/Contractors + Product/Component Manufacturers*





# Q: Challenges in RVI

## *Jurisdictional Responses*



# Challenges to RVI

## *RVI Brief*

- RVI Accuracy and Data Falsification
- Resource Constraints and Lack of Consistency
- Personal Preference and Staffing Challenges
- Technological Issues

# Future Opportunities



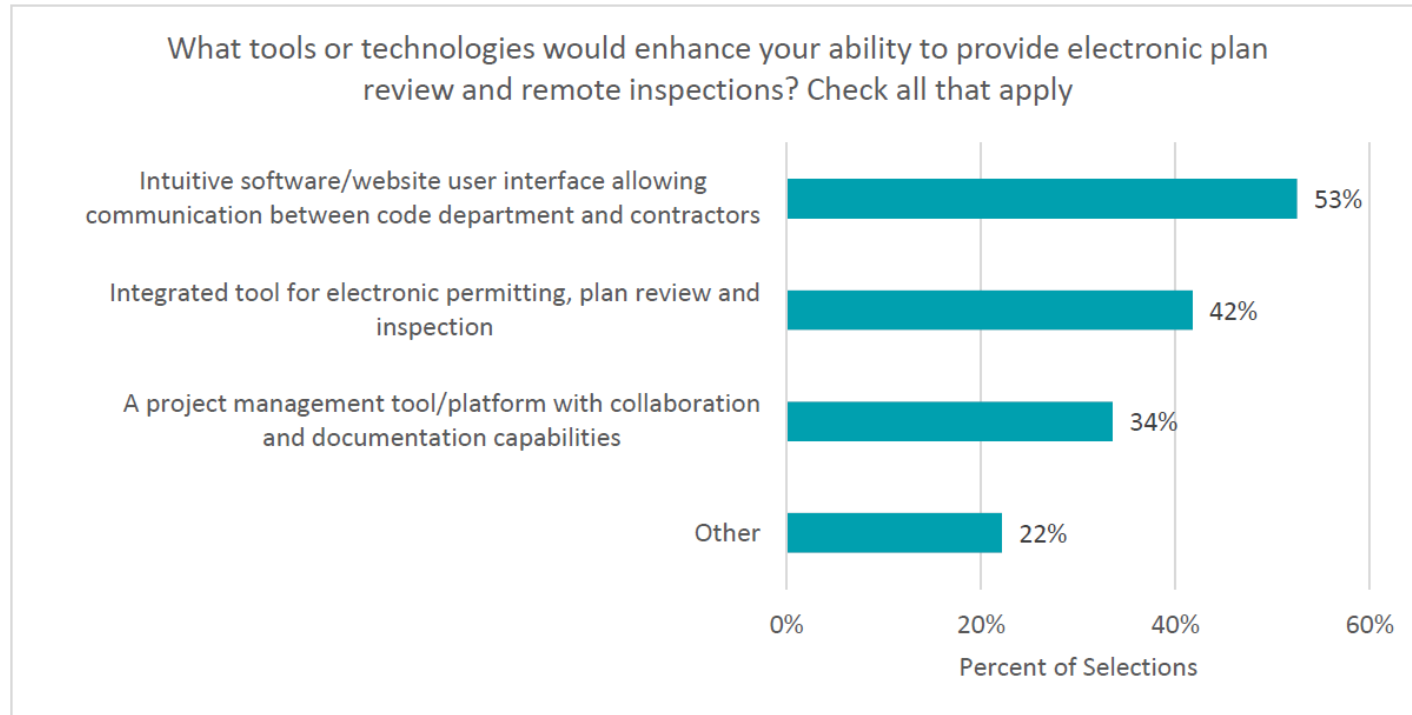
# Future Opportunities for RVI

## *RVI Brief*

- Technology and Tools
- Standardized Process
- Training and Funding
- Workforce Development
- Resource Sharing
- Technological Support for RVI Software and Platforms

# Future Tech Opportunities for RVI

## *Jurisdictional Responses*





# Workforce Development

## *Opportunities*

- A training program that allows code officials to learn from one another, especially from those with decades of experience, would greatly help those coming into the field and help create a more seamless transition to using RVI;
- A program that reaches university and college students might greatly increase interest in this field among younger people, which might expand RVI use (since younger people are typically more comfortable with new technologies);
- A program that teaches recommendations processes and standards for RVI;
- A program that teaches electronic plan review, in addition to its comparisons with as-built inspections; and
- A program that prioritizes building science and energy code inspections (such as the water and energy remote inspection process under development by RESNET and ICC).

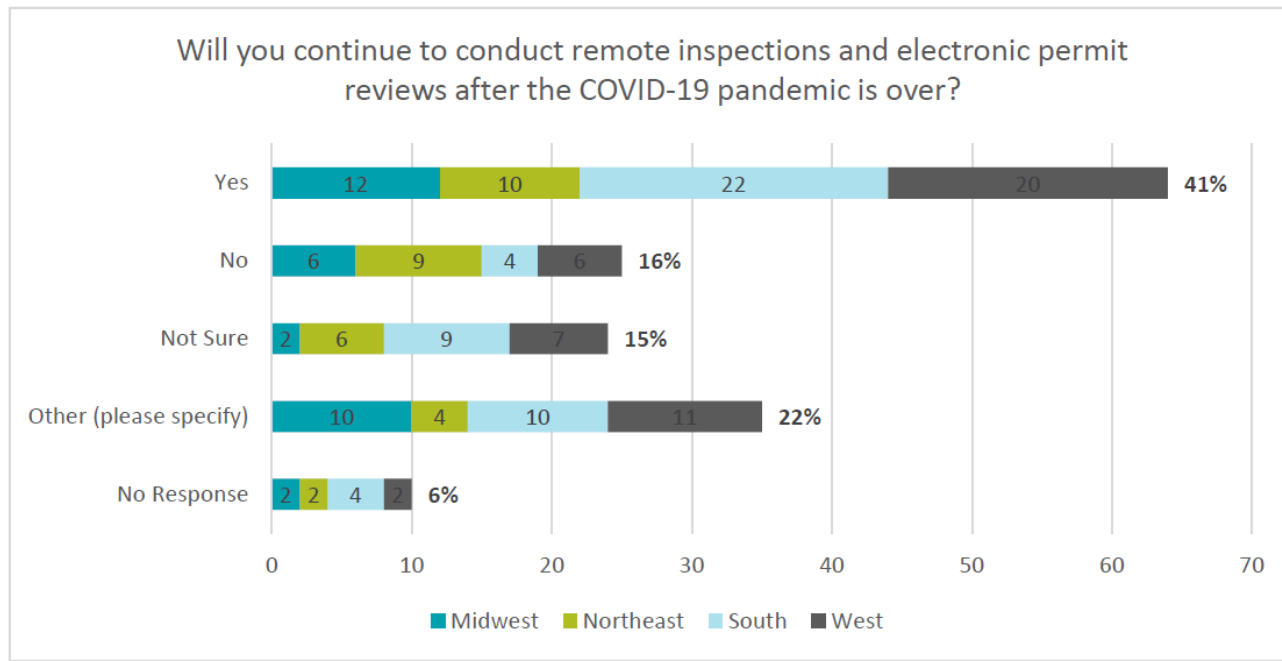
# Next Steps

## *RVI Brief*

- Additional Research
- Drones?
- The Future of Remote Inspections: A Hybrid Approach

# The Future of RVI

## *Jurisdictional Results*



# Remote Virtual Inspections

## *Main Takeaways*

- Education on codes
- Consistent, universal industry standards
- Communication
- Belief in benefits of RVI
- E-Permitting being widely used; RVI less

# Thank you!

*Alison Lindburg*

[alindburg@mwalliance.org](mailto:alindburg@mwalliance.org)

*Link to brief:*

<https://neep.org/remote-virtual-inspections-rvi-challenges-and-opportunities>







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# Trends in Code Adoption

Amendments that support  
municipal environmental goals.



# Meeting Environmental Goals

- Building Electrification
- Solar Requirements
- Electric Vehicle Charging
- Embodied Carbon
- Other goals



# Building Electrification



## Electric Ready

- ✓ Space for appliances
- ✓ Installed Outlets
- ✓ Correct Panel Size and Identification
- ✓ High Efficiency Gas Appliance Options

## All Electric

- Only gas for certain situations or appliances.
- Renewable Requirements
- Outcome based Approach to Panel

<https://www.swenergy.org/buildings/electrification>



# Solar Requirements



## Solar Ready

IECC Appendix Chapters

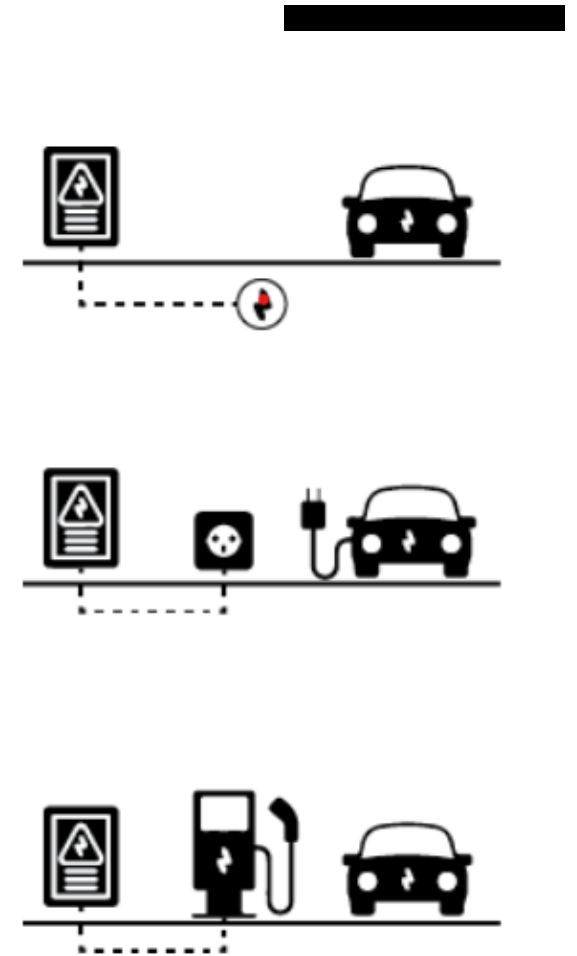
## Solar Required

- Offset a specific amount of energy
- Offset certain types of energy use
- Fee in lieu of or other “options”



# Electric Vehicle Charging

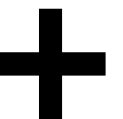
- EV Capable
- EV Ready
- EV Installed
- Accessible EV Spaces
- Residential vs Commercial vs Multi-Family





# Embodied Carbon

- EPDs
- Incentivizing Certain Assemblies



# Other Goals and Amendments

- Water
- Construction Waste
- Residential Commissioning
- Residential Window-to-Wall Ratios
- Additional Efficiency Packages/points

