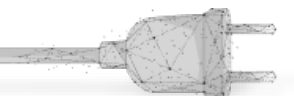


Welcome to the TEINA Advisory Group Meeting #5

September 29, 2022



Welcome to the TEINA Advisory Group Meeting #5

To maximize our time together, please:



Type your name in the chat box to "sign-in" to the meeting.



Note that meetings will be recorded for note taking purposes.



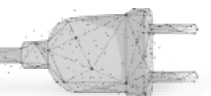
Mute phones when not speaking to help reduce excess background noise.



During conversations, please feel free to use the chat box to ask questions.



Please use the Raise Hand feature to provide verbal comments



Public Attendees



Time is reserved at the end for public comments and questions.

Please feel free to add questions in the chat at anytime.



Agenda

- **Welcome**
- **2021 TEINA Report Highlights**
- **Two Complementary Efforts: TEINA 2022 and Oregon National Electric Vehicle Infrastructure Plan (NEVI)**
- **TEINA 2022 Highlights**
 - E- Micromobility and Hydrogen Pathways Study
 - ZEV Charging Infrastructure Deployment Strategy and Tools
 - TEINA Dashboard (user-friendly modeling tool; annual estimates; interactive mapping tool)
 - Best practices for charging infrastructure design and deployment
 - Cost considerations
- **Public Comment**
- **Next Steps**



Welcome - AG Members

Amanda Pietz, *ODOT*

Suzanne Carlson, *ODOT*

Greg Alderson, *PGE*

Thomas Ashley, *Shell Recharge Solutions*

Philip Barnhart, *Emerald Valley EV Assoc.*

Chris Chandler, *Central Lincoln PUD*

Marie Dodds, *AAA*

Judge Liz Farrar, *Gilliam County*

Ingrid Fish, *City of Portland*

Stu Green, *City of Ashland*

Jamie Hall, *General Motors*

Zach Henkin, *Center for Sustainable Energy*

Joe Hull, *Mid-State Electric Cooperative*

Juan Serpa Muñoz, *Eugene W&E Board*

Vee Paykar, *Climate Solutions*

Cory Scott, *PacifiCorp*

Jairaj Singh, *Unite Oregon*

Charlie Tracy, *Oregon Trail Electric Co-op*

Dexter Turner, *OpConnect*



Welcome - Project Team

Amanda Pietz, ODOT

Suzanne Carlson, ODOT

Mary Brazell, *ODOT*

Jillian DiMedio, *ODOT*

Matt Noble, *ODOT*

Jessica Reichers, *ODOE*

Wayne Kittelson, *Kittelson*

Chris Bame, *Kittelson*

Wende Wilber, *Kittelson*

Ben Shapiro, *RMI*

Aradhana Gahlaut, *RMI*



The Big Picture - ZEV Charging Infrastructure Planning

TEINA 2021

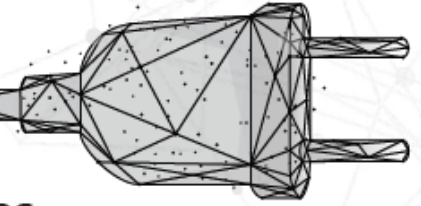
TEINA
2021
Update

NEVI

TEINA 2022

- E-Micromobility
- Hydrogen
- Zero Emission Vehicle (ZEV) Charging Infrastructure Deployment Strategy

Oregon's Transportation Electrification Infrastructure Needs Analysis



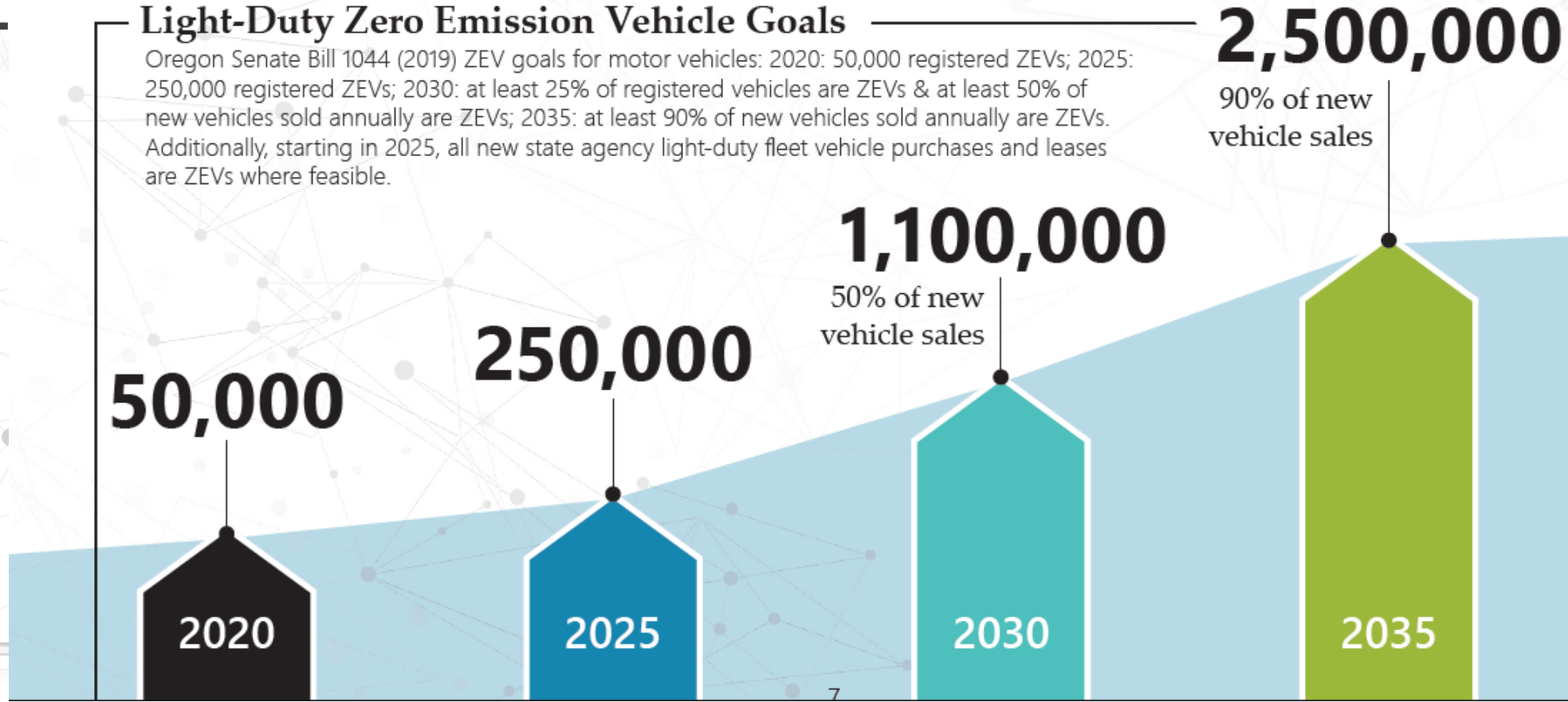
Evaluate future charging infrastructure needs of light-duty vehicles and other modes of electric transportation.

Recommend policies and implementation priorities to accelerate charging infrastructure.

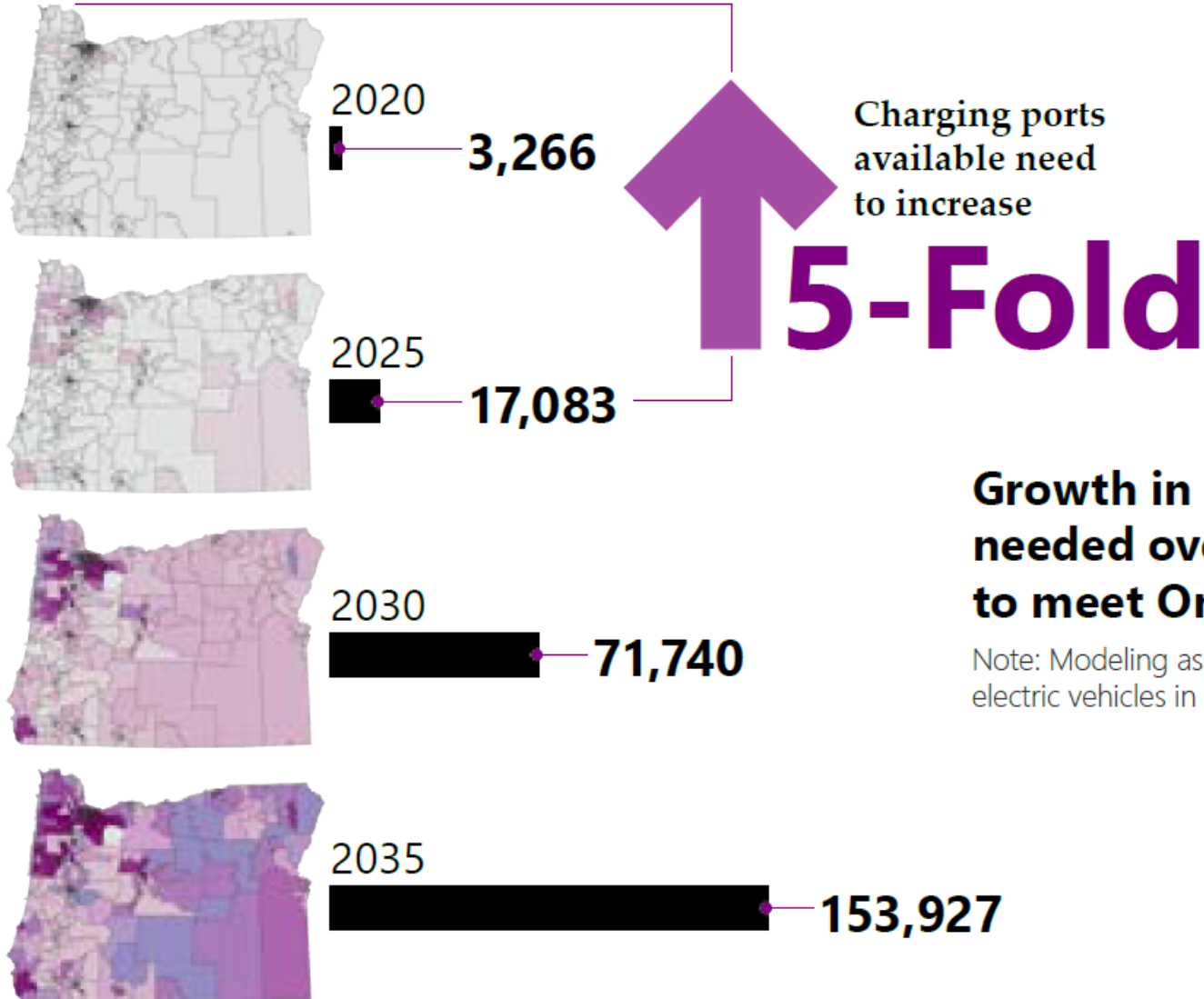
TEINA 2021 Highlights

Light-Duty Zero Emission Vehicle Goals

Oregon Senate Bill 1044 (2019) ZEV goals for motor vehicles: 2020: 50,000 registered ZEVs; 2025: 250,000 registered ZEVs; 2030: at least 25% of registered vehicles are ZEVs & at least 50% of new vehicles sold annually are ZEVs; 2035: at least 90% of new vehicles sold annually are ZEVs. Additionally, starting in 2025, all new state agency light-duty fleet vehicle purchases and leases are ZEVs where feasible.



TEINA 2021 Highlights



Growth in public charging ports needed over the next 15 years to meet Oregon's 2035 goal.

Note: Modeling assumes 50,000 electric vehicles in 2020.



TEINA 2021: What's Been Updated

1. Minor refinements to the geographic distribution and port counts for Light Duty charging in 5 use cases in all 3 scenarios
2. Text updates to reflect changes

End Result:

No change to the conclusions and takeaways!

The updated plan can be found at
<https://www.oregon.gov/odot/Programs/Pages/TEINA.aspx>



Two Complementary Efforts: TEINA and Oregon National Electric Vehicle Infrastructure Plan (NEVI)

The NEVI plan can be found at
<https://www.oregon.gov/odot/climate/pages/nevi.aspx>



National EV Infrastructure Formula Program (NEVI)

How much is coming to Oregon?

\$65 million over 5 years for fast charging

- \$52 million IJA federal funding + \$13 million (20%) non-federal match (expected from private sector)
- Must be used on Alternative Fuel Corridors
- FY 2022 (w/match) \$9.6 million; FY 2023 on \$13 + million

Funds can be used for:



Development phase activities



EV charger purchase and installation



Operating costs/maintenance for the first 5 years



Mapping, Analysis, Modeling



Signage

DEPARTMENT OF TRANSPORTATION

Federal Highway Administration

23 CFR Part 680

[Docket No. FHWA-2022-0008]

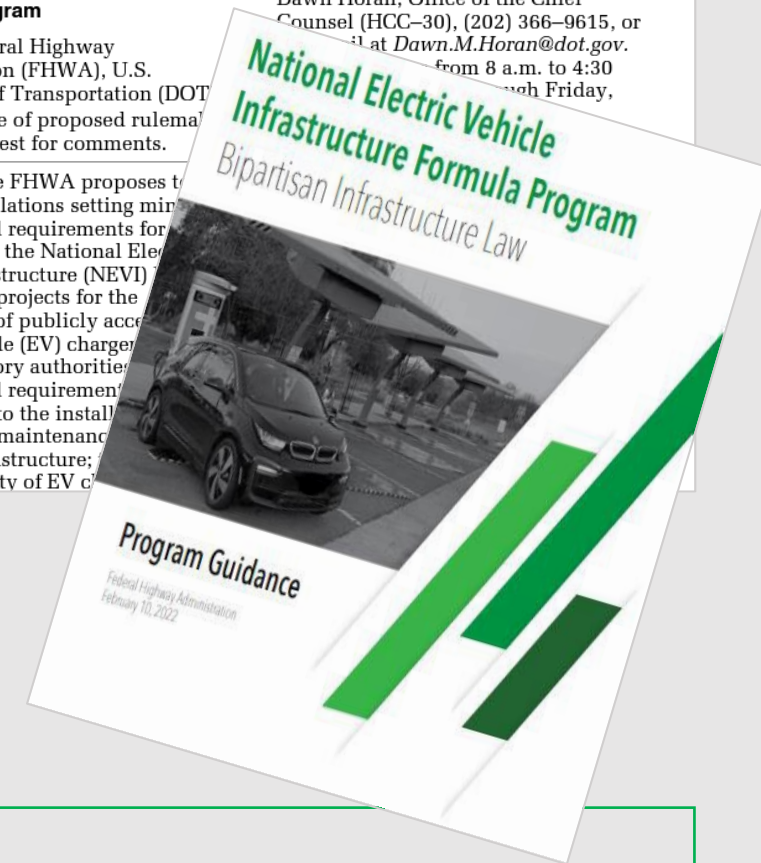
RIN 2125-AG10

National Electric Vehicle Infrastructure Formula Program

AGENCY: Federal Highway Administration (FHWA), U.S. Department of Transportation (DOT)
ACTION: Notice of proposed rulemaking (NPRM); request for comments.

SUMMARY: The FHWA proposes to establish regulations setting minimum standards and requirements for projects funded under the National Electric Vehicle Infrastructure (NEVI) Formula Program and projects for the construction of publicly accessible electric vehicle (EV) charging stations. Certain statutory authorities, standards and requirements would apply to the installation, operation, or maintenance of charging infrastructure; interoperability of EV charging

Number (RIN) for the rulemaking. All comments received will be posted without change to <https://www.regulations.gov>, including any personal information provided.
FOR FURTHER INFORMATION CONTACT: Mr. Gary Jensen, Office of Natural Environment, (202) 366-2048, or via email at Gary.Jensen@dot.gov, or Ms. Dawn Horan, Office of the Chief Counsel (HCC-30), (202) 366-9615, or via email at Dawn.M.Horan@dot.gov, from 8 a.m. to 4:30 p.m. each Friday.



Public Outreach

NEVI engagement to date; More over 5 years

387 Total Survey Respondents

267 EV Drivers

32 Interested in being Site Hosts

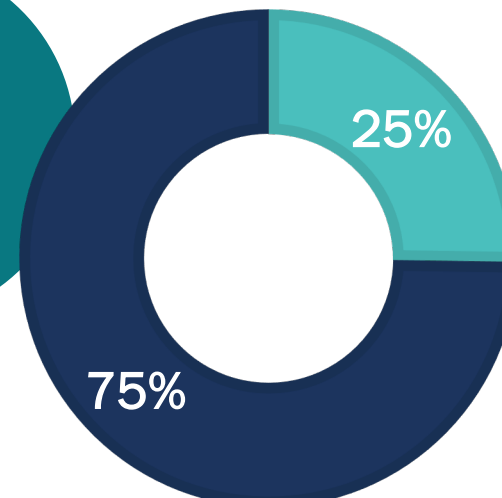
*As of 9/13/2022

Available on the NEVI website

501
Suggested Locations

Types of Chargers Suggested

- Level 2
- Fast Charger



Webinar

APRIL
4th

Webinar

JUNE
27th

Interest Group Presentations



One on One Meetings



5

Targeted Information & Listening Sessions

115+
Participants

Vision

Create a backbone network of high-powered EV charging stations along major corridors, to significantly increase Oregonians' confidence that EV charging will be as ubiquitous and convenient as fueling with gasoline



Five-year Goals

- First 3+ years, fully build out all 11 EV Alternative Fuel Corridors
- Final 2 years
 - Options: Build out more Alt Fuel Corridors
 - Options: Increase coverage, redundancy; upgrade more stations; freight; multi-modal
- Reliability

Focus Area: Engagement with underserved communities (Equity/Justice40)

On-going engagement with public, agencies, utilities, and private sector

NEVI State Plan – Guiding Principles



Partner with
Private Sector



Corridors –
Competitive
Solicitations



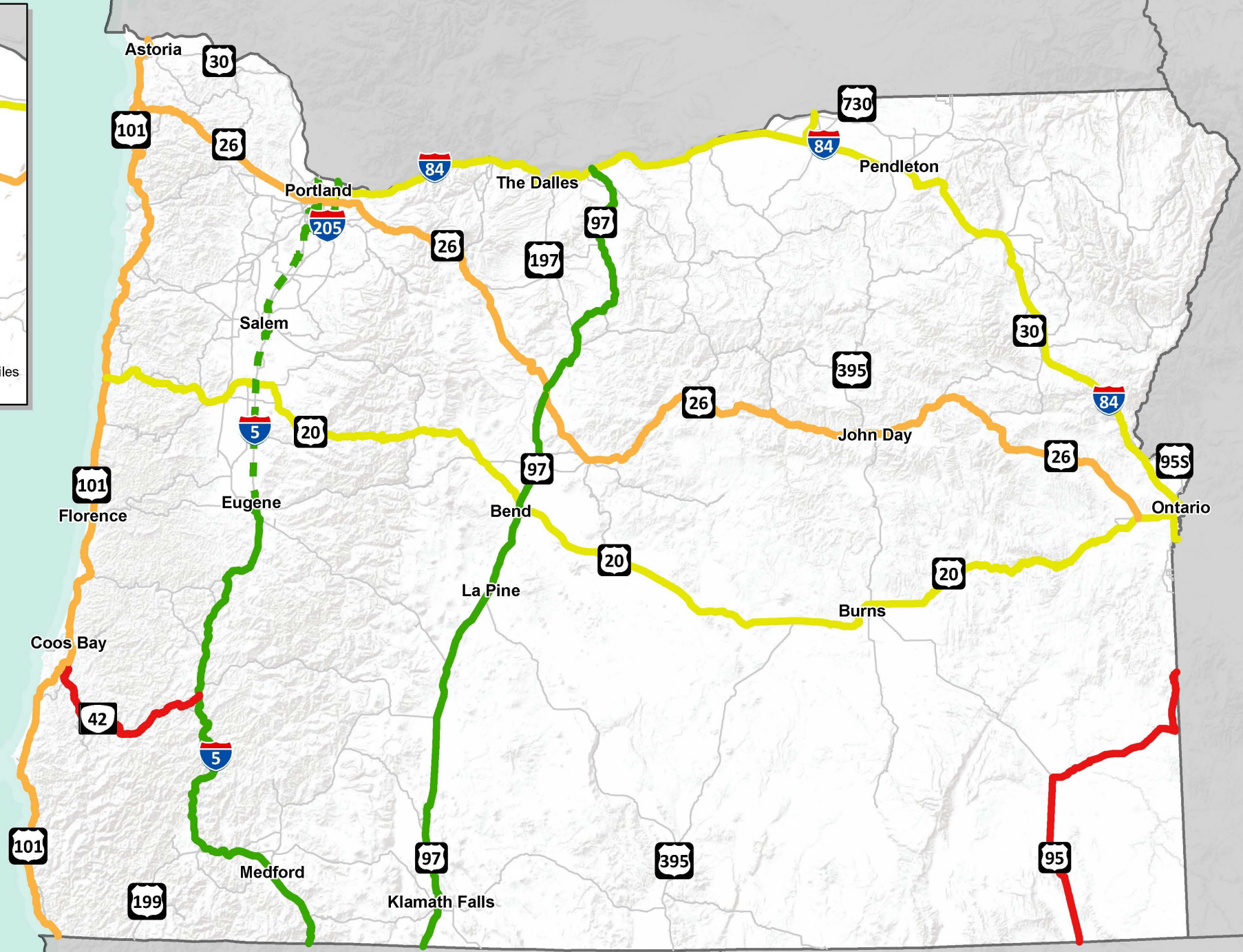
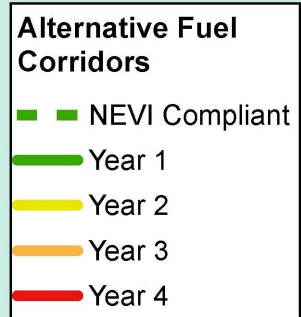
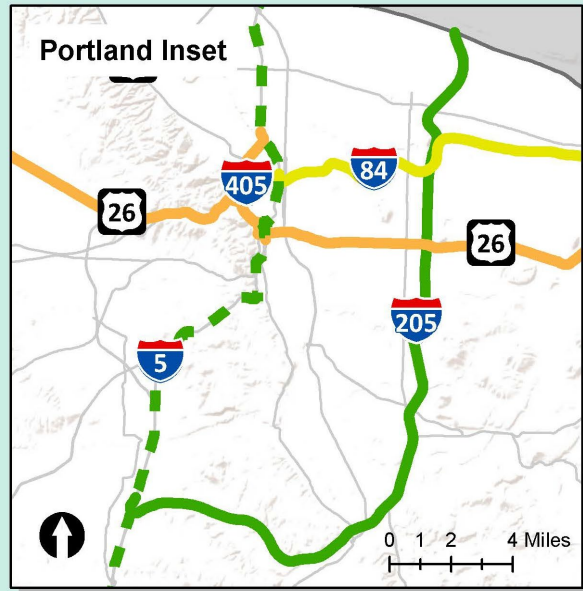
Build New &
Upgrade
Existing



Target
Reliability,
Minimum
Standards



Expand
Coverage



Where will NEVI investments go?

NEVI – What's Next

- **FHWA Response finalizing NEVI Minimum Guidelines**
 - Comments were due to FHWA on August 22nd, 2022
 - FHWA will issue guidelines ????
- **ODOT NEVI Preparatory Actions**
 - Enroll Projects in Statewide Transportation Investment Plan (OTC – September 13th, 2022 for FY 2022 and FY 2023)
 - Collaborate with Office of Innovative Funding on process for public-private partnership RFPs
- **Regional Workshops along first year Corridors**
- **Develop and issue Request for Proposals**



TEINA 2022 Overview

H2

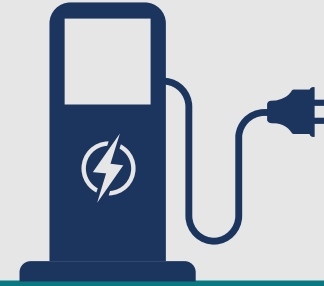
Hydrogen

- Hydrogen landscape
- Infrastructure Needs & Costs
- Recommendations



E-micromobility

- Overview of industry
- Benefits to adoption
- Actionable strategies to promote growth



Zero Emission Vehicle (ZEV) Charging Infrastructure Deployment Strategy

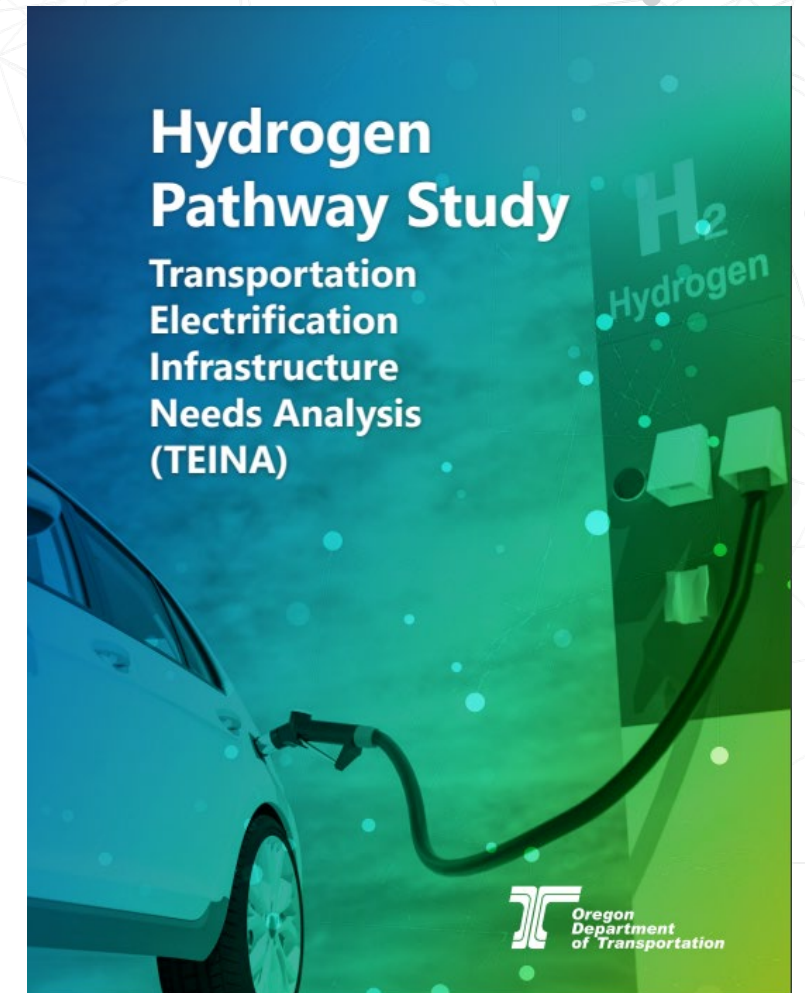
- Best Practices – Design and Deployment
- Annual Deployments & Tools
- Cost Estimates

Tools

- TEINA Dashboard
- Interactive Mapping Tool

TEINA 2022 – Hydrogen Pathway Study

- Published April 2022
- Considered scenario where fuel cell vehicles constitute some portion of ZEVs across TEINA use cases and modeled, through 2035:
 - Hydrogen refueling infrastructure needed
 - Estimated costs
- Hydrogen landscape
- FCEV inventory
- Near, mid- and longer-term recommendations



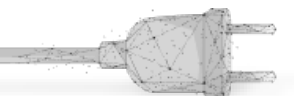
https://www.oregon.gov/odot/climate/Documents/Hydrogen%20Pathway%20Study_Final.pdf

TEINA 2022: E-Micromobility

Objective: to better understand the electric micromobility sector and outline actionable strategies for promoting sector's growth

Study Includes:

- Overview of e-micromobility
- Industry Snapshot – Oregon and beyond
- Promoting Equity in e-micromobility
- Benefits of adoption and major barriers
- Policy recommendations and actionable strategies



TEINA 2022: What's in the Deployment Strategy?

Light-duty ZEV Charging Infrastructure

Annual Infrastructure Needs*

Best Practices in Design & Deployment

Planning Support Tools

Planning Level Cost Estimates

Near-term Priorities 2023-2025

*Medium- and heavy-duty vehicle infrastructure needs from TEINA Phase I will also be available on an annual basis.

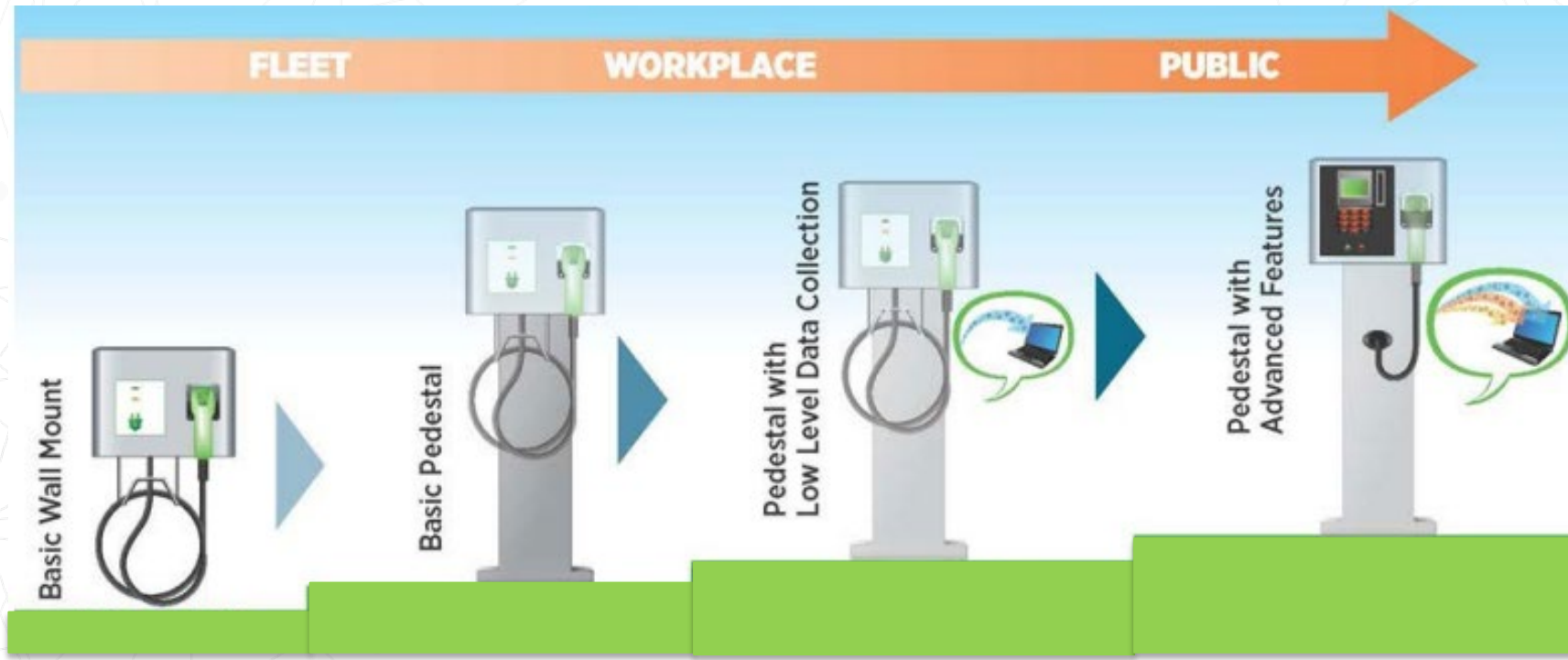


Best Practices: Design & Deployment Options

- Site locations and desired characteristics
- Location-specific considerations
 - Public L2 and DCFC
 - Workplace L2
 - Multi-unit Dwelling L2
- Contracting and Ownership
 - Operations & Maintenance
- Working with electric utilities

Planning Level Cost Estimates

- Typical cost ranges for deployment of different charging infrastructure types and locations



ZEV Charging Infrastructure Deployment Strategy

How to Get Started: Guidance and resources for local deployment of EV charging infrastructure

Key Topical Areas



- Players and their Roles & Responsibilities

- Project Prioritization



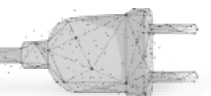
- Building in Equity

- Foundational Land Use and Building Code Policies



- Navigating Site Selection and Development

- State Support Resources



Advisory Group Discussion

How can the guidance be best tailored to support your efforts towards advancing EV infrastructure?



Public Comments



Use the chat box
to ask questions.



Use the Raise
Hand feature to
provide verbal
comments

Next Steps

- Next TEINA Advisory Group Meeting - Early December 2022
- TEINA 2022- ZEV Charging Infrastructure Deployment Strategy - January 2023



Thank you!



Contact: Mary Brazell - Mary.Brazell@odot.oregon.gov