

Western Smart Regional EV Adoption and Infrastructure at Scale – WestSmartEV@Scale

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Organization: PacifiCorp
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Project ID: TI128



Overview

Overall Goal

Identify pathways to accelerated growth in freight, business and consumer use of electric vehicles.

Timeline

- Start: October 1, 2020
- End: December 31, 2024
- 33% Complete

Budget

Total project funding	\$17,066,146
DOE share	\$6,040,647
Cost share	\$11,025,499
Budget period 1	\$735,882
Budget period 2	\$3,220,425
Budget period 3	\$2,084,340

Any proposed future work is subject to change based on funding levels.

Barriers Addressed

- Limited availability of charging infrastructure for destination corridors outside of Interstates
- Limited options of charging infrastructure for multi-modal transport to reduce costs
- Limited access of electric transportation solutions and benefits in underserved areas

Partners

- PacifiCorp
- Utah State University, University of Utah
- National Renewable Energy Laboratory
- Giv Group, Leaders for Clean Air
- Forth Mobility, FlexCharging
- Rocky Mountain Institute, Utah Inland Port
- Breathe Utah, Doglatin
- Utah CCC, Yellowstone-Teton CCC, Treasure Valley CCC, Valley of the Sun CCC

Project Objectives

Objectives

Create an enduring regional ecosystem across the Intermountain West to sustain accelerated growth in freight, business and consumer use of EVs that will reduce petroleum use and greenhouse gas emissions

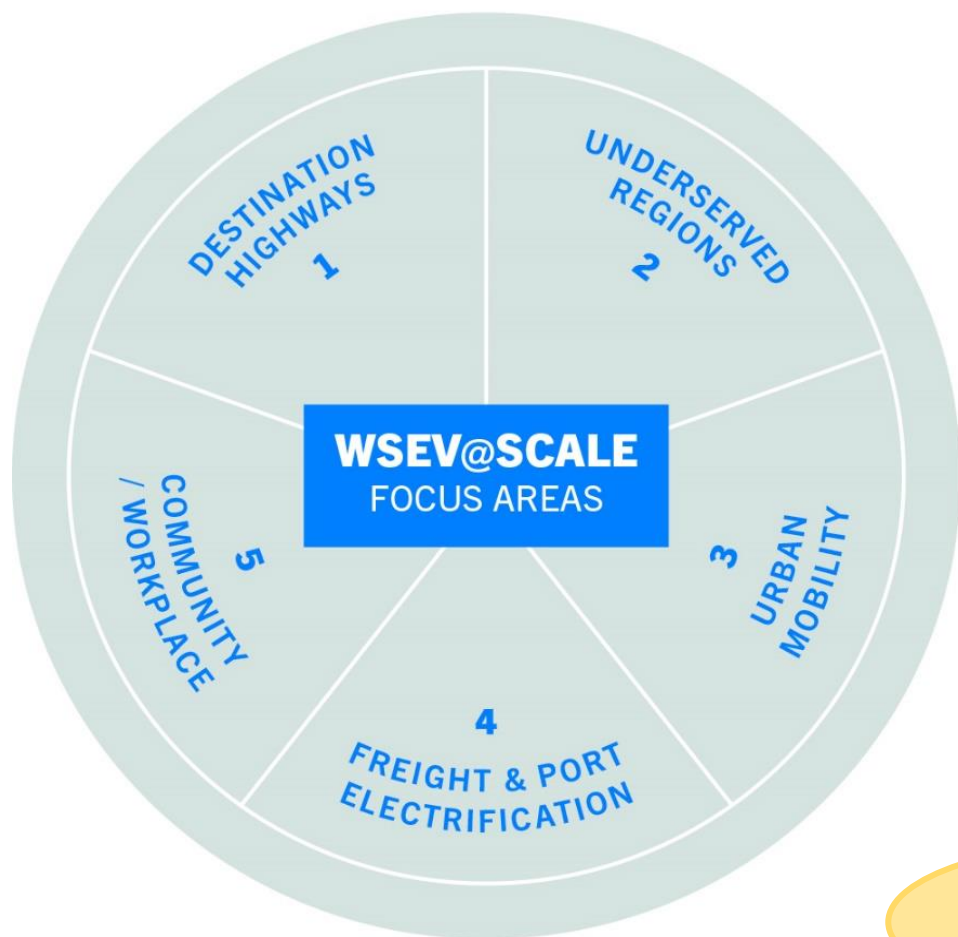
Support of VTO Tech Goals

- Improving Fuel Diversity: reducing use of oil and natural gas
- Increasing Local Resiliency: planning for grid impacts and developing solutions for infrastructure reliability and enhancing transportation options
- Reducing Greenhouse Gas Emissions: increasing alternative fuel use in both consumer and commercial sectors

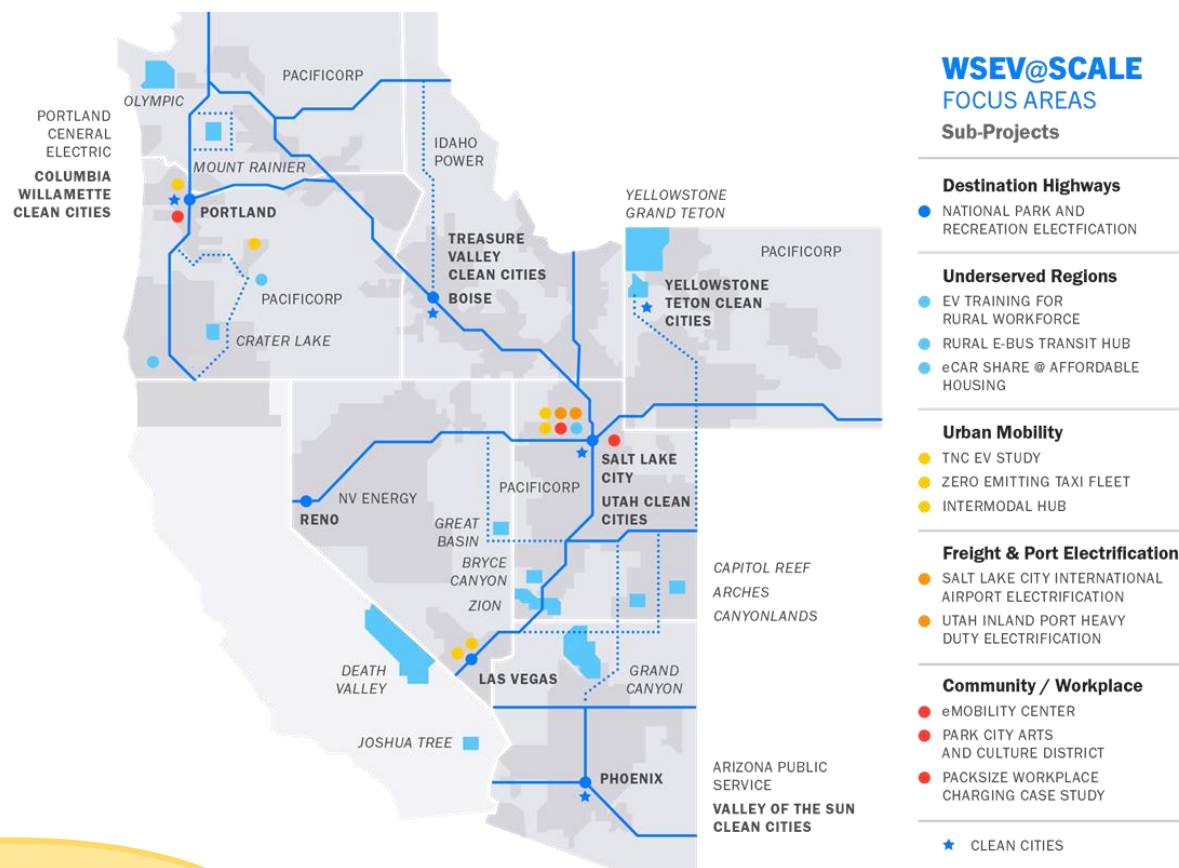
Impact

- Identify EV charging infrastructure to address consumer needs along corridors
- Expand EV options for underserved communities
- Develop solutions for co-location of charging infrastructure to enhance mobility
- Assess potential to integrate freight and port electrification into charging infrastructure electric mobility solutions to connect technologies and communities
- Evaluate smart charging capability at workplaces and emobility hubs in communities

Project Approach



Notable Equity Considerations

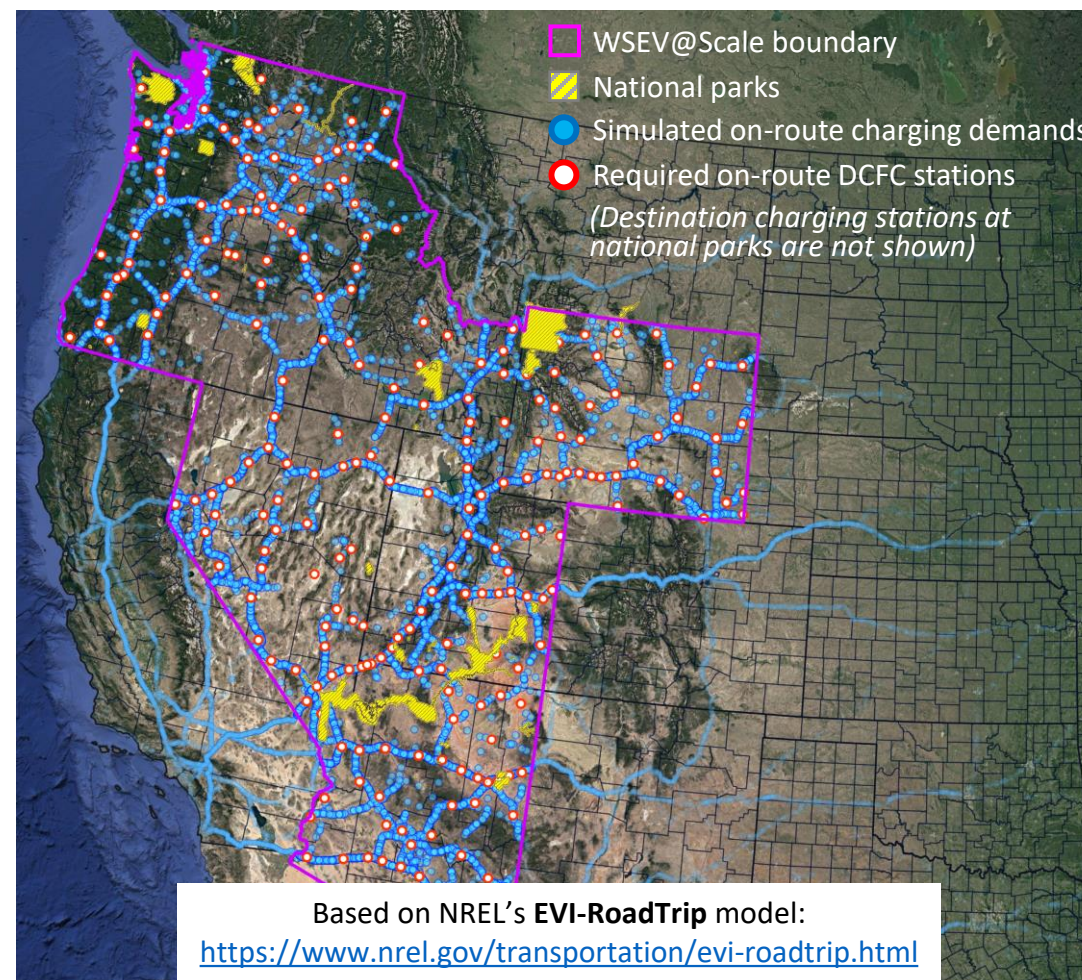


Phase 1: Modeling, Planning, and Design => Phase 2: Implementation and Operation => Phase 3 Outreach and Education

National Parks & Rec Electrification

Estimated charging station network required to enable electrified road trips to/from/between/through national parks

- Identified specific locations to enable EV travel from Salt Lake City to Moab (Arches and Canyonlands NP)
- Delay in installations due to supply chain constraints



EV Training for Rural Underserved Communities

- Working with Crater Lakes Training Center to develop rural focused Electricians Pre-Apprenticeship Program
 - Develop curriculum and program focused on rural high school students to develop electricians' skills
- Design Mobile Education Unit for rural students
 - Utilizing EV technologies for instruction
 - Foster school/community connections

Ongoing Focus

- Working with IBEW Local Chapters
- Planning with rural communities in Oregon and Utah
- Looking for additional funding



Photo PacifiCorp

Notable Equity Considerations

eCarshare @ Affordable Housing

Giv Communities, the nonprofit arm of a leading multifamily development organization, is providing low-income urban mobility solutions with electric carshare for their residents at Citizens West.

Utilize Envoy Scheduling App

Chevy Bolt Premier 2019

Best cost/range/quality combination

Safety + interior specs ideal for shared mobility

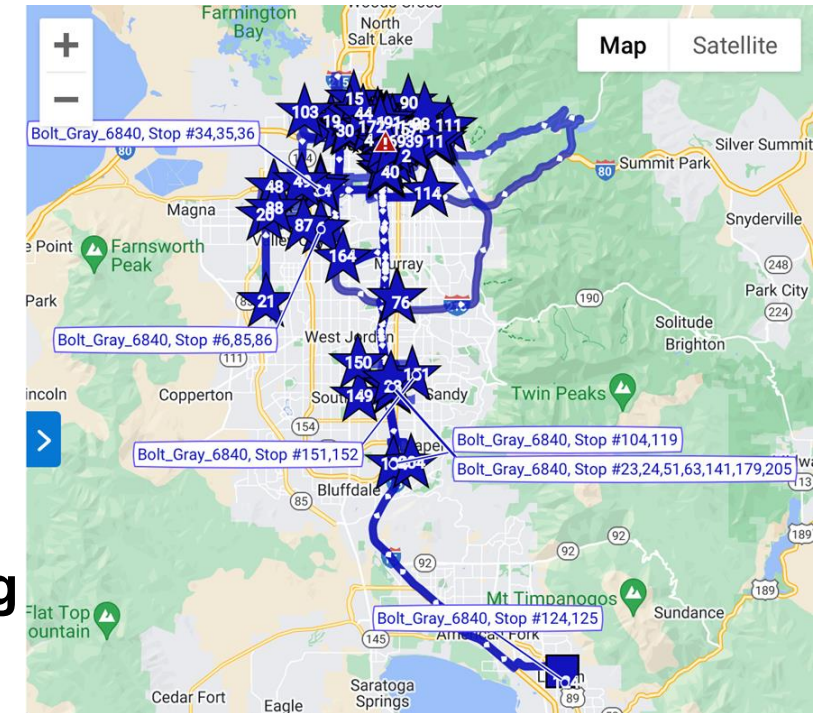
Envoy app does not have sufficient built-in data tracking

Installed GeoTab and FlexCharging for additional data tracking

Usage increased with each month

35 drivers signed up in 2022

Oct 2022 averaged 55 hrs per active driver, Nov 2022 55.88 hrs per driver and Dec 2022 averaged 73.37 hours per driver



Notable Equity Considerations

Accomplishments & Progress

UT Inland Port Heavy Duty Electrification

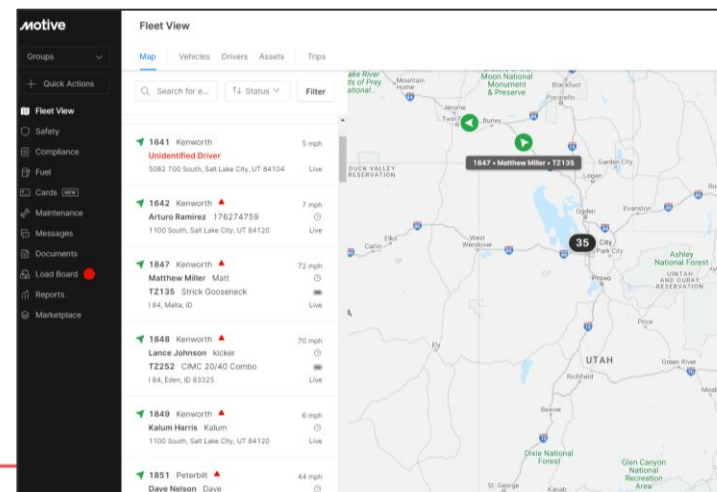
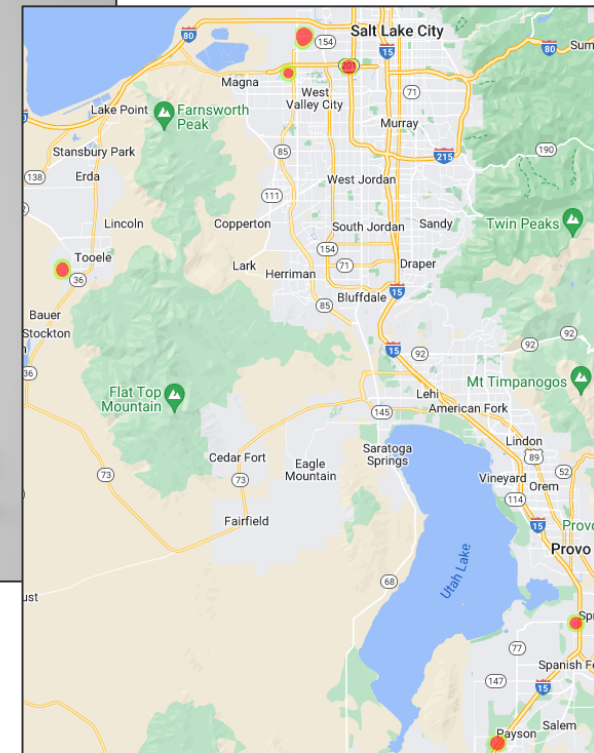
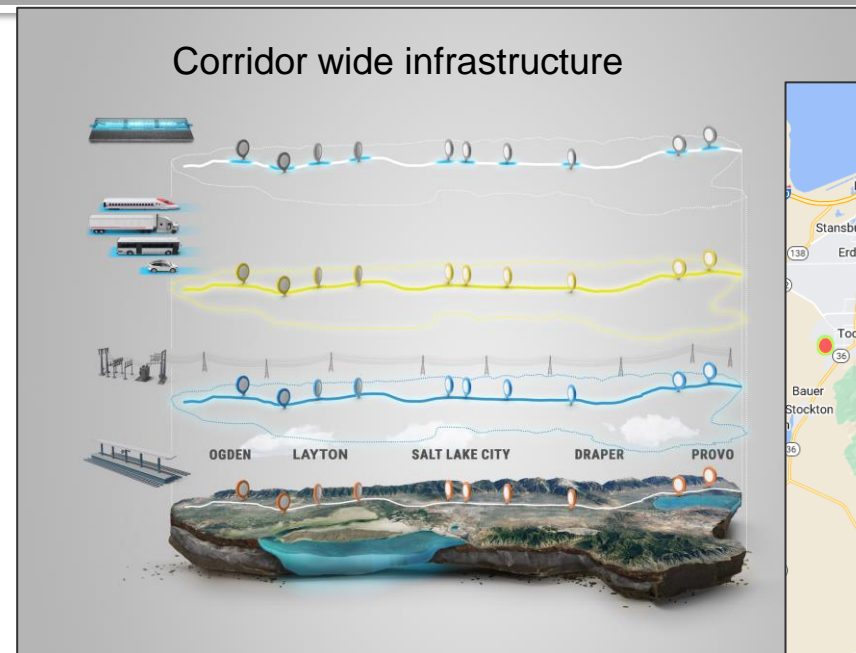
Electrification potential for individual fleet trucks analyzed using telematics data with 1Hz data logger

Next steps

Analyze charging needs including, overnight, opportunity charging and wireless in-motion

Continuity with I-15 corridor “high utilization high power-hub” locations (expansion of Intermodal Hub

- Commuter Train
- Light rail
- HD trucking
- LDVs and park n rides
- In motion charging



POWERING YOUR GREATNESS

eMobility Hub-Community

- Working with Ogden City to develop eMobility Hub
 - The Community hub will have ebuses, fast charging for public, TNC, ebikes
 - The hub will be located at historic Union Station. Strategically located museum and part of redevelopment area
- Benchmarked Austin City
 - Met with Austin Energy and CapMetro

Next Steps

- Upgrading electric utility service to support needs
- Finalizing contracts for location of public fast charging



Photo Ogden City



Photo PacifiCorp

Notable Equity Considerations

POWERING YOUR GREATNESS

Collaboration & Coordination Among Project Team

Lead Organization

PacifiCorp, a Berkshire Hathaway Energy Company

Partner Organizations (subrecipients)

Utilities: NV Energy, Idaho Power, Arizona Public Service

Clean Cities: Utah, Yellowstone (ID and WY), Treasure Valley (Boise), Valley of the Sun (Phoenix), Columbia-Willamette (Portland)

Additional Partners: Utah State University, University of Utah, National Renewable Energy Lab, Rocky Mountain Institute, Doglatin, Flexcharging, Forth Mobility, GIV, Park City, Leaders for Clean Air

Community Partners

Utah Transit Authority, Utah Inland Port Authority, Salt Lake City International Airport, Utah Department of Transportation, Packsize

- PacifiCorp/USU led Bi-weekly program management calls
 - Bi-weekly calls with each task area team
- Quarterly entire team meetings with presentations from sub-project teams



POWERING YOUR GREATNESS

Contribution to Energy Equity and Environmental Justice

WestSmartEV@Scale is having a direct benefit to underserved and overburdened communities thru the subprojects including:

EV Training: Developing Pre-Apprenticeship programs to benefit tribal and coal communities

eCarshare@Affordable Housing: expanding EV options in underserved communities-particularly beneficial for refugee communities

Intermodal Hub: is located within an underserved community. Expanding zero emissions mobility solutions directly benefits the community

TNC EV Study: is helping TNC drivers transition to EVs, since many of the drivers reside in underserved communities this subproject is beneficial

eMobility Hub: Located in underserved and overburdened community to enhance options for residents and revitalize neighborhood



EV car show in underserved communities Photo: PacifiCorp

Summary

Main takeaways

- The project's overall goal to create an enduring ecosystem to accelerate growth in freight, business and consumer use of EVs in the Intermountain West is **being achieved**.
- The **primary methods** of achieving this goal include
 - Identify charging infrastructure needs
 - Expand EV options in underserved communities
 - Co-locate charging infrastructure to enhance mobility and lower costs
 - Integrate freight and port charging infrastructure into infrastructure solutions
 - Expand smart charging and community mobility solutions
- Approach transportation electrification by integrating infrastructure needs and usage with consumer perspectives and think of the future!
- Challenges include supply chain constraints for infrastructure and finding qualified staff