

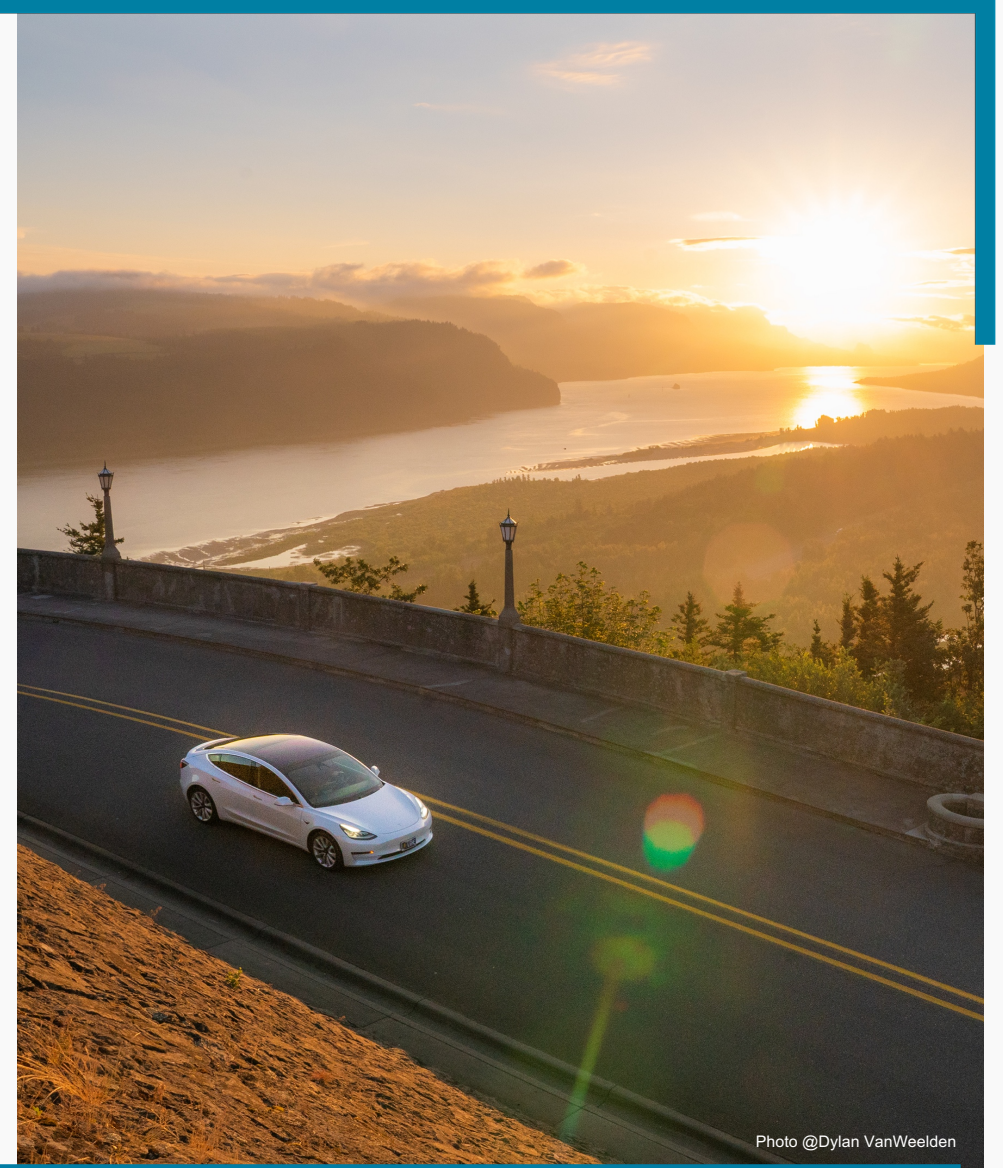
Clean Rural Shared Electric Mobility (CRuSE)

Principal Investigator & Presenter: Kelly Yearick

Organization: Forth

June 23, 2021

Project ID: TI112



This presentation does not contain any proprietary, confidential, or otherwise restricted information. All information contained in this presentation is current as of May 2021, unless otherwise noted.

Project Overview

Timeline

- Project Start Date: October 1, 2019
- Project End Date: June 30, 2023
- Percent Complete: roughly 45%

Barriers

- Lack of awareness and exposure to electric vehicles (EVs) in rural communities
- Limited access to affordable mobility choices
- Unproven financial sustainability of carsharing in rural communities

Budget

- Total Project Funding: \$1,158,663
 - DOE Share: \$548,540
 - Cost Share: \$610,123
- Budget Period 1: October 1, 2019-June 30, 2021: \$424,034
 - Expended: \$304,572
- Budget Period 2: July 1, 2021-June 30, 2022 (expected): \$267,809

Partners

- Forth, project lead
- Columbia Willamette Clean Cities Coalition
- City of Hood River
- Pacific Power
- Envoy Technologies
- American Honda
- OpConnect
- Columbia Cascade Housing Corporation
- Pacific Northwest National Laboratory
- Additional community partners

Project Objectives

Objectives

Develop and launch an EV carshare program at 5 distinct sites in Hood River to serve three distinct user groups

Collect and analyze data to refine program and measure impact

Determine model for financial sustainability and replicability

Disseminate learnings and share best practices through conferences, workshops, and publications

Impact

Increased awareness for and access to EVs and carsharing

Financial sustainability for carsharing in rural areas with diverse user groups

Reduced affordability, technological, and language barriers associated with traditional carsharing

VTO TI Goals

National Security
(domestic fuel sources)

Economic Growth
(business opportunities)

Affordability for Business and Consumers
(cost savings, alternative fuels)

Reliability/Resiliency
(transportation options)

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

Project Approach

Budget Period 1 (October 2019-June 2021): *Project Initiation and Launch*

- Initiation and Operations Planning
- Survey Design and Implementation
- Establish Site Locations
- Secure Vehicles
- Install Charging Stations
- Site Preparation
- Plan Outreach and Promotion
- EV Carshare Data Analysis
- Introduce Spanish Language Version of App
- Present on Project Findings
- Host Regional Workshop
- Project Refinement

Budget Period 2 (July 2021-June 2022): *Project Refinement*

- Present on Project Findings
- Host Regional Workshop
- Project Refinement
- Implementation of Alternate Payment Methods on App
- Identify Clean Cities Coalitions for Technical Assistance

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Project Approach

Budget Period 3 (July 2022-June 2023): *Project Wrap-up and Results Dissemination*

- Present on Project Findings
- Host Regional Workshops
- Project Refinement
- Introduce Tiered Pricing Structure on App
- Provide Technical Assistance to Three Clean Cities Coalitions
- Wrap up Project and Data Collection
- Produce Final Case Study

Key Milestones

- BP1 Go/No-Go Milestone: Assets Procured
 - *Secure 5 site locations*
 - *Secure 5 vehicles*
 - *Secure and install 5 charging stations*
- BP2 Go/No-Go Milestone: Data review and analysis
- Technology Upgrades
 - *Spanish Language Version of App*
 - *Alternate Payment Mechanisms*
 - *Tiered Pricing Structure*
- Online Tool Development for Data and Results Dissemination
- Technical Assistance for Clean Cities Coalitions

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Milestones: Budget Period 1

Budget Period 1: October 1, 2019 1-June 30, 2021					
Milestone #	Go/No Go #	SOPO#	Milestone Description	Status	Estimated/Actual Completion
1		0.1	Kick-off Meeting with USDOE	Complete	12/5/2019
2			Design and Complete Project Management Plan	Complete	11/15/2019
3			First Meeting of Project Team and Community Partners	Complete	2/4/2020
4			Finalize Contracts	In Progress	May 2021
5			Finalize Project Schedule	Complete	2/4/2020
6			Design and conduct transportation survey	Complete	12/31/2020
7		1.4	Establish Site Locations	Complete	9/15/2020
8		1.5	Secure vehicles	Complete	6/30/2020
9		1.6	Install charging stations	In Progress	May 2021
10	1	1.7	Site preparation	In Progress	June 2021
11			Project kick-off event/ribbon cutting	In Progress	June 2021
12		1.9	EV Car Share Data Analysis	In Progress	June 2021
13		1.10	Implementation of Spanish language version of Envoy App	In Progress	May 2021
14			Leverage high impact EV conference	Complete	11/12/2020

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Milestones: Budget Period 2 and 3

Budget Period 2: July 1, 2021-June 30, 2022					
Milestone #	Go/No Go #	SOPO#	Milestone Description	Estimated Start	Estimated Completion
15			Initiate and develop online toolkit	July 2021	June 2023
16		2.4	Implementation of alternate payment mechanisms on Envoy platform	August 2021	December 2021
17		2.5	Identify three Clean Cities Coalitions to provide technical assistance to	August 2021	June 2022
18	2		Data Review and Analysis	January 2022	June 2022
19		3.1	Present project findings a minimum of 5 conferences and workshops to encourage replication in other rural communities	July 2021	June 2022
20		3.2	Deliver at least three regional workshops to encourage and inform replication	July 2021	June 2023

Budget Period 3: July 1, 2022-June 30, 2023					
Milestone #	Go/No Go #	SOPO#	Milestone Description	Estimated Start	Estimated Completion
21		3.4	Introduce Tiered Pricing Structure on Envoy Platform	July 2022	December 2022
22		3.5	Provide hands-on technical assistance to three other Clean Cities Coalitions to implement similar car sharing pilots	July 2022	June 2023
23		3.6	Wrap up pilot project and data collection	January 2023	March 2023
24		3.7	Produce Final Case Study	January 2023	June 2023

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Project Accomplishments and Progress

Establish Site Locations



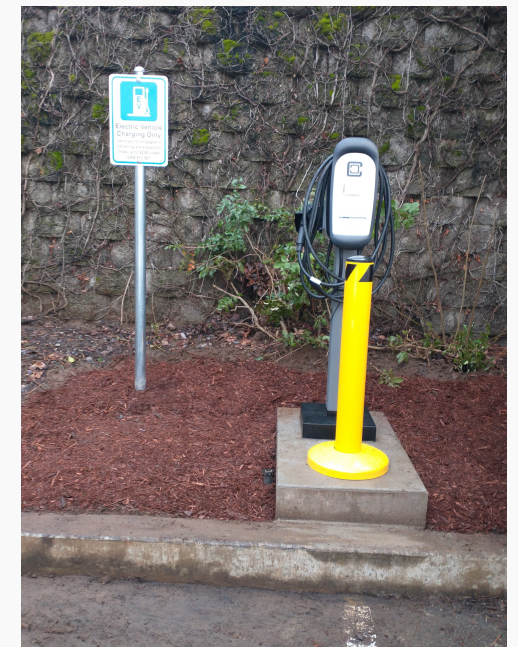
- Columbia Parking Lot
- Hood River Fire Department
- Waterfront/Columbia Gorge Express Bus Dropoff
- Upper Rio Bella Apartments
- Wyeast Vista Apartments

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

Project Accomplishments and Progress

Charging Station Installation

- Request for Proposals Issued May 2020
- Charging stations acquired May 2020
- Construction began Summer 2020
- Three sites complete as of May 2021
 - Columbia Parking Lot
 - Hood River Fire Department
 - Waterfront/Columbia Gorge Express Bus Dropoff



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

Project Accomplishments and Progress

Site Preparation

- Signage added to each site to indicate carshare
- Three vehicles delivered to Hood River to undergo on-the-ground testing of the platform
- EV Ambassador volunteers recruited and trained



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

Project Accomplishments and Progress

Data Collection: Transportation Survey + Analysis Setup

Transportation Survey

- Goal: to understand community awareness and readiness around EVs and carsharing
- Designed with community partners
- Translated in Spanish
- Distributed digitally September/October 2020
- Responses Received: 9
- Identified community based organization to lead in-person outreach/surveying in July 2021

Data Analysis

- Forth and Pacific Northwest National Laboratory established goals and mechanisms to meet data collection and analysis objectives in June 2020
- Pacific Northwest National Laboratory using sample data sets from Envoy Technologies, OpConnect, and Pacific Power to build modeling structures needed to begin accepting actual project data in June 2021
- Forth and Pacific Northwest National Laboratory to design survey questions to implement within carshare user experience to collect additional data

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

Collaboration and Coordination among Project Team

Forth

Kelly Yearick –
Principle Investigator

Prime

**Columbia Willamette
Clean Cities Coalition**

Sub

Envoy Technologies

Sub

**Pacific Northwest
National Laboratory**

The City of Hood River
Port of Hood River
Columbia Cascade Housing Corporation
Columbia Area Transit
Mid Columbia Economic Development District

Community Partners

American Honda
OpConnect
Ride Connection
Pacific Power

Industry Partners

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

Collaboration and Coordination among Project Team

Forth

Nonprofit (501c3 and 501c6)
Project Manager

Forth has vast experience leading projects and engaging the transportation industry while grounding work within communities.

Examples include: St. Louis Vehicle Electrification Rides for Seniors (SiLVERS), Vehicle Charging Innovations for Multi-Unit Dwellings American Cities Climate Challenge, Electric Vehicle Infrastructure Partnership Program (EVIPP), Electric Tractor Pilot

Forth conducts:

- Monthly partner calls + e-mails to provide status updates and allow for best practices sharing + program design guidance
- Monthly check-ins with Envoy and Pacific Northwest National Laboratory to ensure technical milestones remain on track
- Solicits feedback and suggestions for program design and improvements from community and industry partners to inform project refinement
- Communications with VTO as required
- Coordinated effort to ensure media releases and project marketing are consistent and amplified across all partner organizations



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

Collaboration and Coordination among Project Team

Columbia Willamette Clean Cities Coalition

Columbia Willamette Clean Cities Coalition bring their expertise in stakeholder engagement and a vast network of community connections. They will assist in identifying and providing technical assistance to three additional Clean Cities Coalitions.

Envoy Technologies

Envoy provides a wealth of experience in providing a turnkey carshare platform which this project will leverage to implement a variety of technological upgrades. Envoy will be a critical link between the project management from Forth and those experiencing it on the ground.

Pacific Northwest National Laboratory

Pacific Northwest National Laboratory brings its expertise in survey design, data collection, and data analytics to this project. PNNL will receive and analyze data from various project partners to track greenhouse gas emissions reductions, fuel cost savings, and inform pricing scenarios in a financially sustainable model.

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

Overall Market Impact

Achievements to date:

- Site preparation: **5 sites** secured, **5 vehicles** secured and delivered, **5 charging stations** secured and delivered, 3 of 5 charging station installations complete
- A community **Transportation Survey** has been conducted to glean first glimpse into community's awareness of EVs and carsharing
- Project learnings to date have been shared through multiple channels including **2 industry webinars/conferences** and Forth has supported the design of two additional carshare programs serving similar populations

Upcoming:

- **Public launch** of the project in June 2021 followed by outreach + promotion:
 - Community-based organization led outreach to non-English speaking residents
 - Amplifying success stories from early riders including public/elected officials and EV Ambassadors
 - **Two technology upgrades to reduce barriers:** Spanish version of Envoy app and alternate payment mechanisms
- **Data collection** begins
- **Dissemination of results** and initiation of online toolkit of best practices

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

Summary

Goal + Approach

- Launch and demonstrate a financially sustainable, replicable model for EV carsharing in a rural community
- Provide access to three distinct user groups and incorporate technological upgrades to remove barriers for low-income and non-English speaking community members
- Use data collection and community input to refine pricing and outreach strategies to maximize utilization

Collaborations

- Project Team: Forth, Columbia Willamette Clean Cities Coalition, Envoy Technologies, Pacific Northwest National Laboratory, various industry and community organizations
- Community partnerships are proving key to engage with potential users and leverage existing networks and organizations that might benefit from these technologies

Project Accomplishments

- Despite major setbacks due to COVID-19, carshare is on track to launch by the end of June 2021/BP1
- Forth has documented lessons learned to date and incorporates these learnings in presentations to external audiences with the intent of inspiring and informing replication