

Transportation Electrification Plan Stakeholder Meeting #2



August 11, 2022

Ground Rules

We strive to create a respectful, inclusive environment that embraces diverse perspectives

1. Be present
2. Keep an open mind
3. Share your insights
4. Work with us toward a shared solution

Please hold any program-specific questions until toward the end

Recommendations & Requests to Meeting Participants

- Use "Gallery View" (icon in top right) when in group discussion
- For technical support, click on "Chat" (icon in tool bar at bottom), toggle to "Tag Galvin-Darnieder / E Source" as recipient, and send your message
- Please use the chat at any time to engage in the conversation or ask questions
- To raise your virtual hand to speak, click on "Reactions" in your tool bar, select "Raise Hand."
- Please keep your camera on during the meeting (icon in bottom left) though remain muted unless speaking
- Please change your participant name in Zoom to be First Name, Last Initial, Affiliation

Stakeholder Engagement Overview



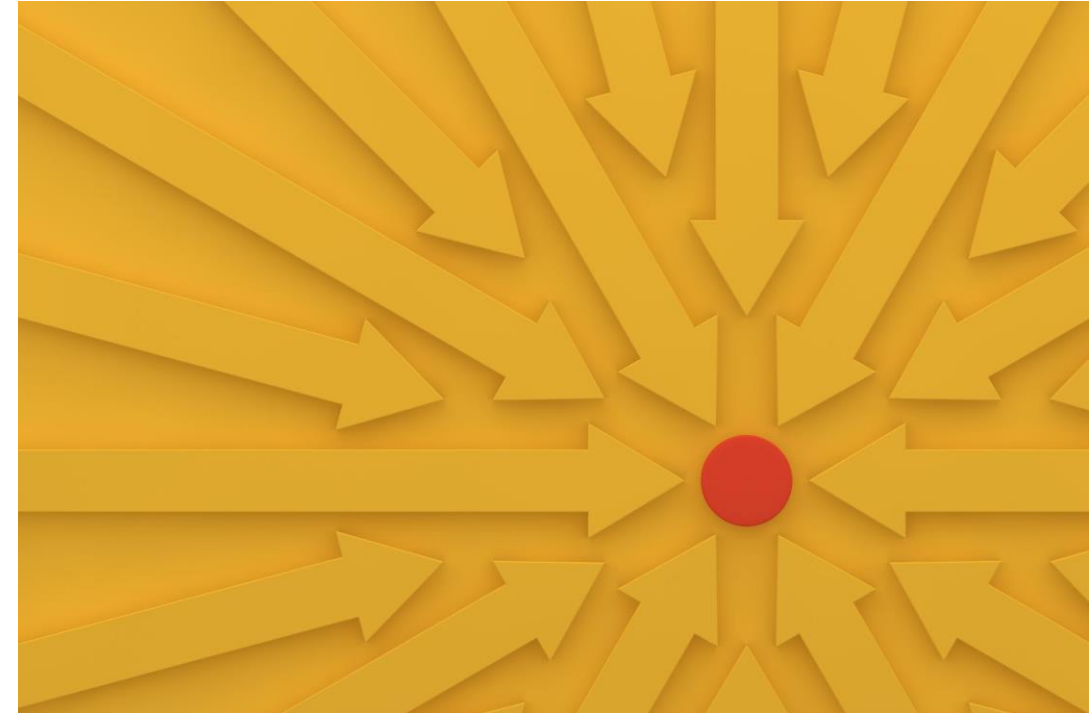
To develop a **robust, equitable, innovative, iterative, and customer-centric transportation electrification plan** (TEP)

Objectives

- Engage underserved communities throughout our service area to support the development of an equitable TEP
- Identify localized market barriers and strategies related to advancing TE within our service area
- Identify and prioritize TE program initiatives that are supported by our stakeholders and will be integrated into the TEP

Today's Objectives

- Reflect on the stakeholder feedback themes and PacifiCorp's actions from the last meeting
- Understand the portfolio guardrails in place that inform PacifiCorp's transportation electrification strategy
- Introduce PacifiCorp's goal, objectives and strategies for transportation electrification in Oregon
- Discuss the Transportation Electrification Customer Road Map and obtain feedback on it from stakeholders



Agenda

TIMING	TOPIC	PRESENTER
9:35–9:45	Key Feedback Themes & Actions	Kate Hawley
9:45–10:30	Guardrails & Constraints Discussion	Peter Schaffer and Alex Osteen
10:30–11:10	Draft Goal, Objectives & Strategies, plus Draft Roadmap Discussion	Kate Hawley
11:10–11:20	Q&A	Kate Hawley
11:20–11:30	Wrap Up & Next Steps	Kate Hawley

PacifiCorp Presenters



Kate Hawley,
EV Senior Product Manager,
Customer Solutions



Peter Schaffer
Senior Planning Manager,
Customer Solutions



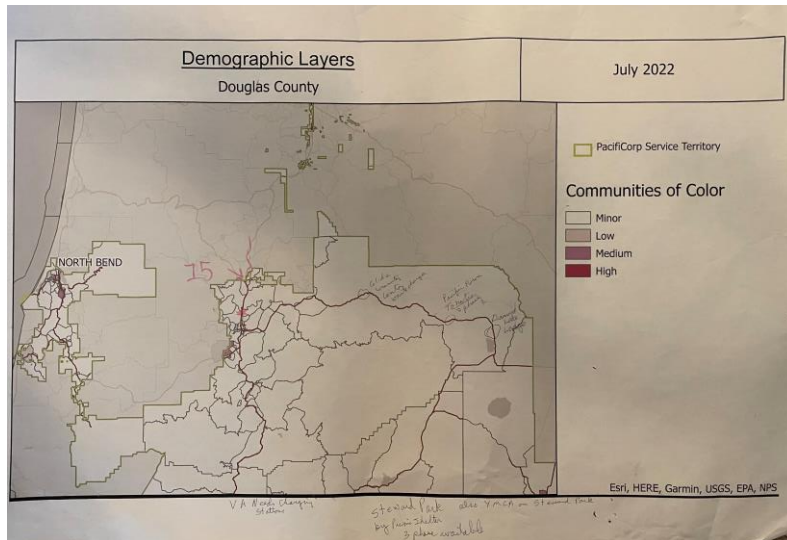
Alex Osteen
Senior Manager,
Demand Response

A man and a woman are in a workshop, looking at a tablet together. The man is wearing a blue t-shirt and the woman is wearing a red and black plaid shirt and brown overalls. They are both smiling. In the background, there are shelves with tools and other people working. The text "Stakeholder Themes & Actions" is overlaid on the right side of the image.

Stakeholder Themes & Actions

Key Feedback Themes & Actions

38 attendees at the July 7 Stakeholder Engagement session offered 34 comments and questions,* including ...



*All questions (and answers) and comments are included in the July 7 Meeting Notes, posted at [Oregon Transportation Electrification Planning \(pacificpower.net\)](https://oregontransportationelectrificationplanning.pacificpower.net).



Charging Station
Access & Availability



Underserved
Community
Identification Process



Rebates

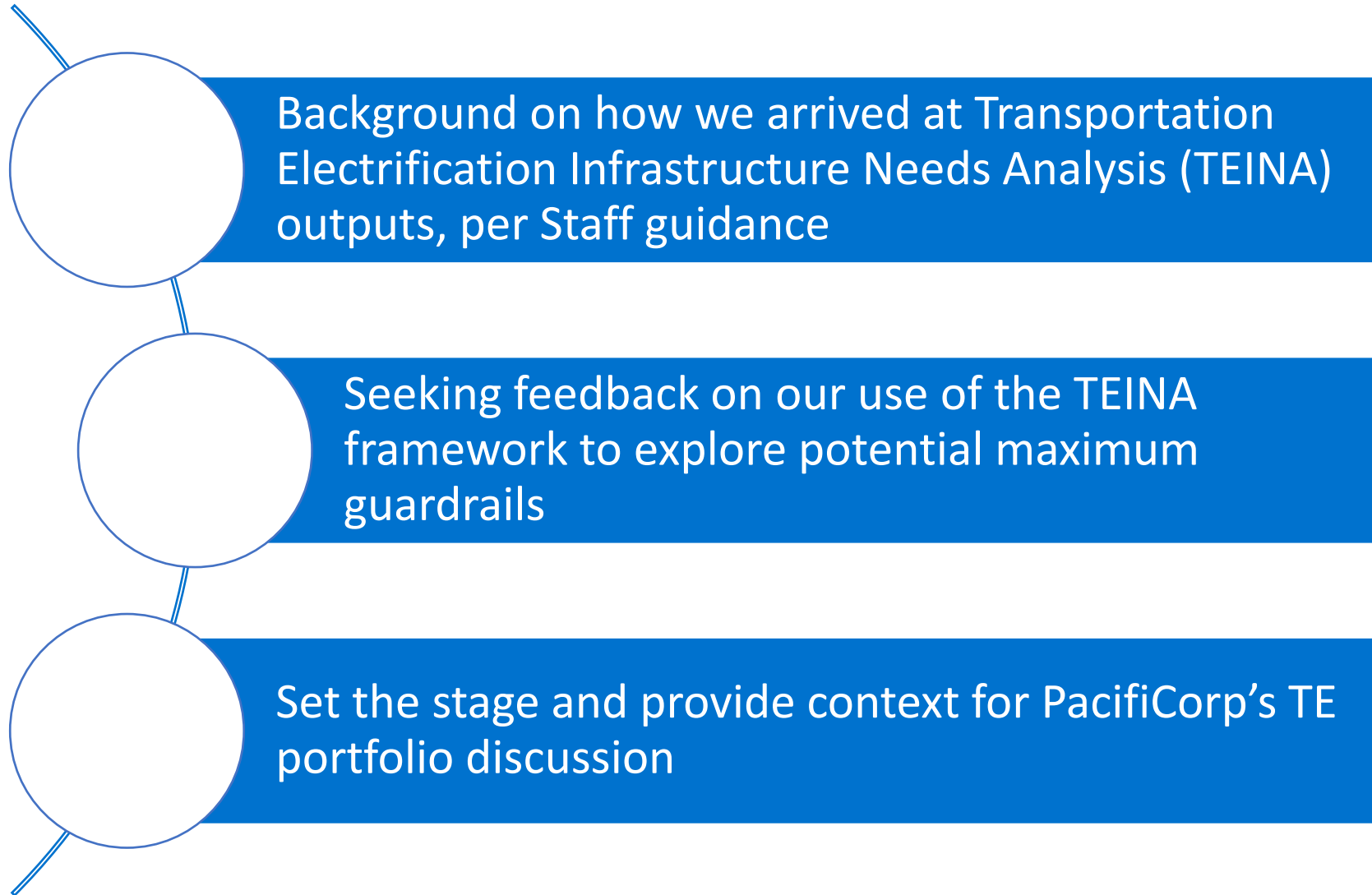


Multi-dwelling
Residences

Guardrails & Constraints



What we will discuss

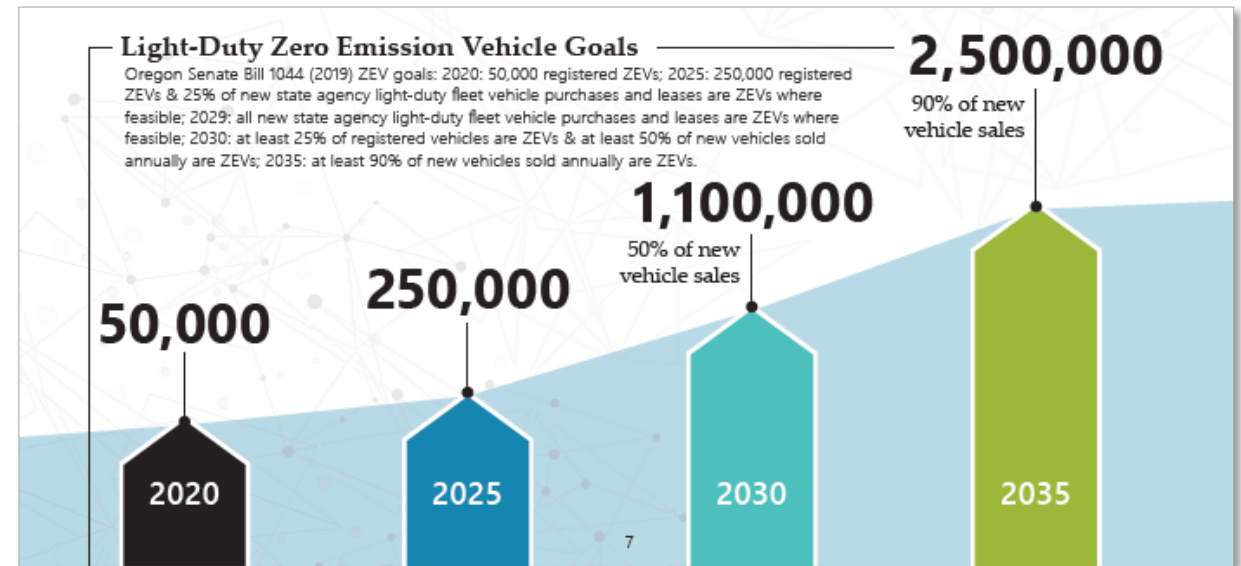


Transportation Electrification Infrastructure Needs Analysis (TEINA) Study

Infrastructure Budget “Guardrail”

- **Section 20 (3)(a)(F)**
- Requires use of Commission-approved tool to forecast maximum public charging infrastructure need
- General reference with Staff Guidance document to specify ODOT’s TEINA methodology as current best practice

Source: OPUC Staff Workshop: Transportation Electrification Investment Framework and Division 87 Rulemaking. Docket Nos. UM2165 and AR654 July 6, 2022



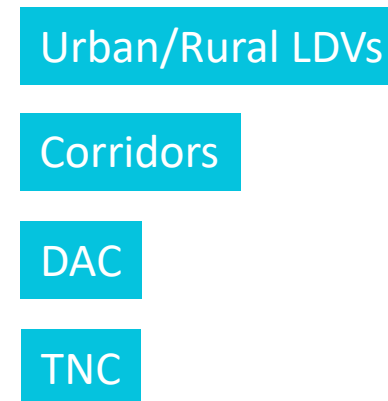
Source: Oregon Department of Transportation (ODOT)
www.oregon.gov/odot/Programs/Pages/TEINA.aspx

Exploring the potential TEINA Maximum Guardrail

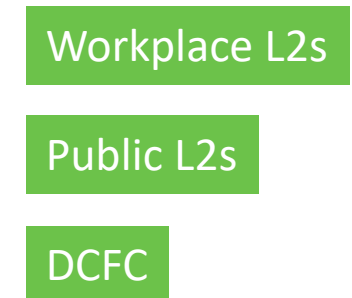
Potential Holistic TE Portfolio



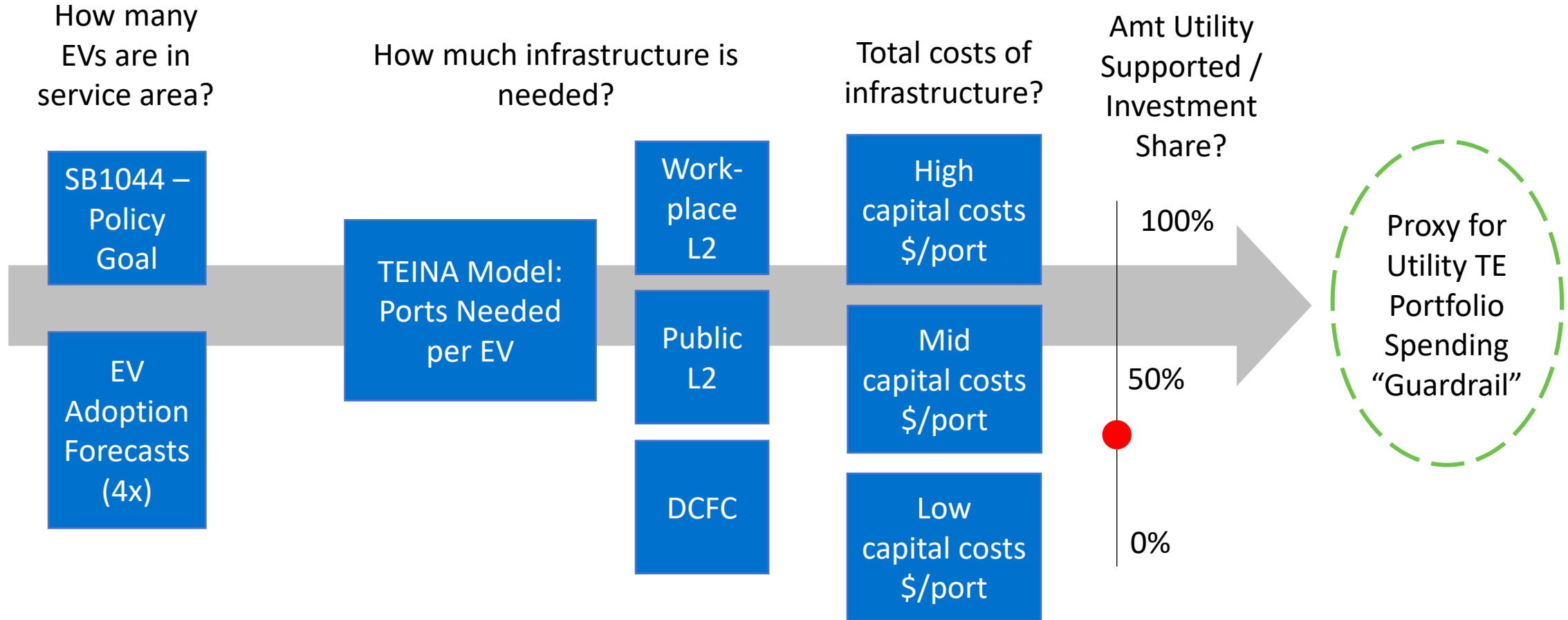
TEINA “Use Cases”



TEINA Outputs



Analysis Process Flow

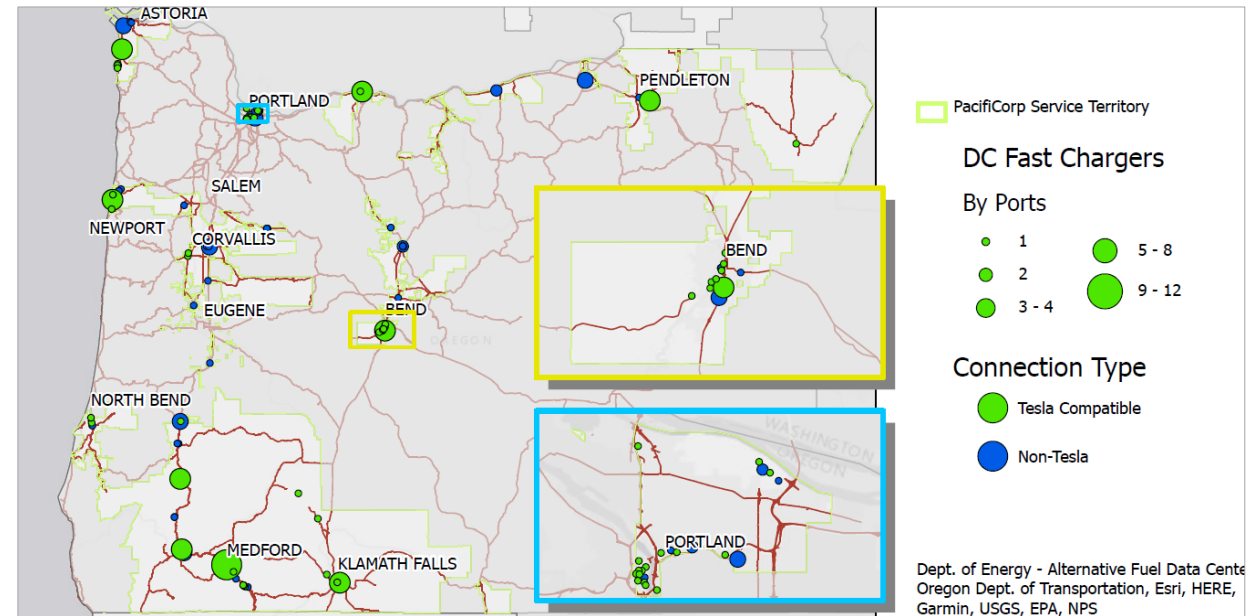


<--- Steps involved in the analysis requiring decision points & assumptions --->

Estimated Public/Workplace Ports

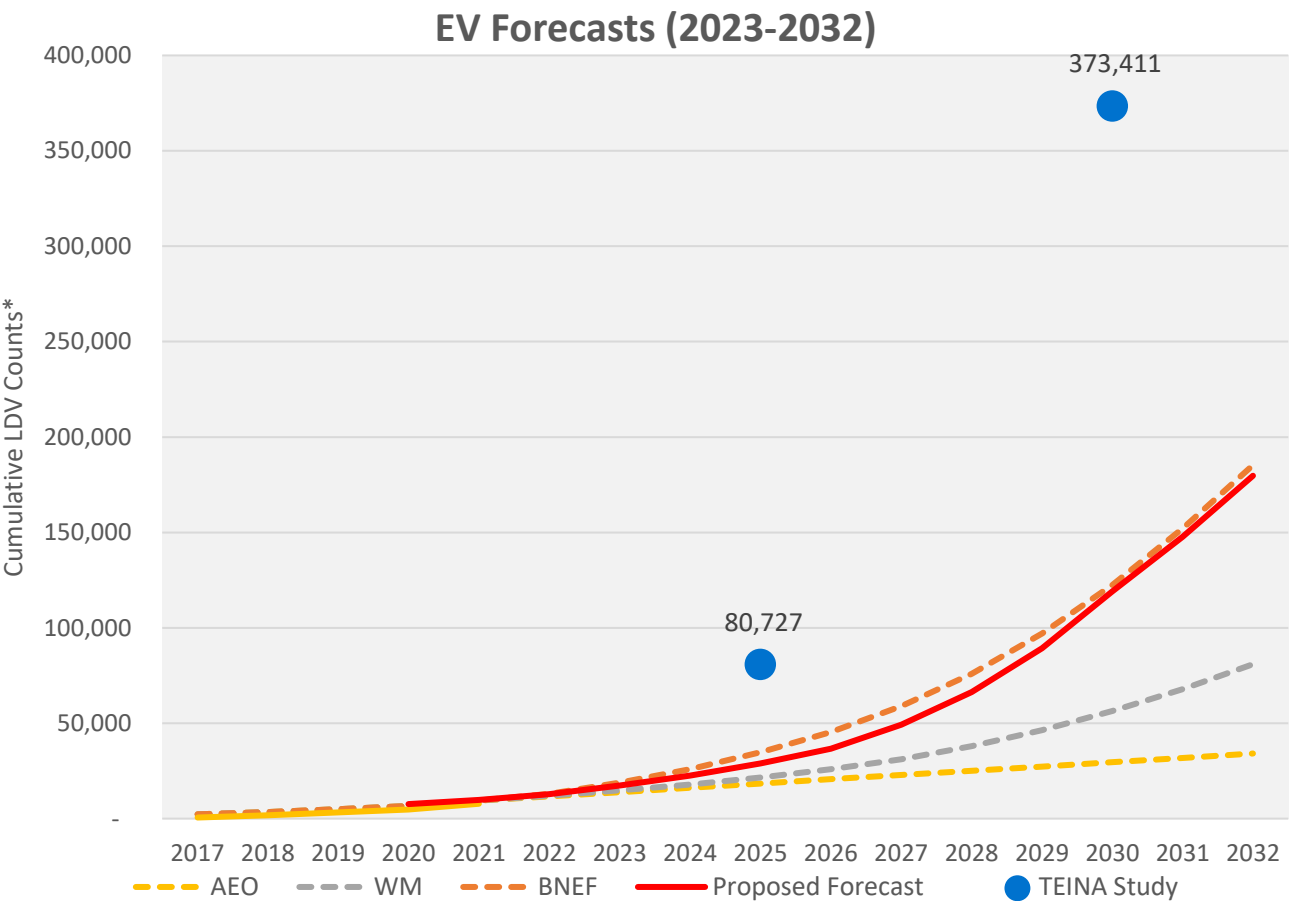
2025 Cumulative EVSE Needs – TEINA Study (SB1044)

Port Type	2025 Cumulative Port Needs	Existing EVSE	Remaining EVSE
Workplace L2	2,435	663	2,103
Public L2	1,374		1,042
DCFC	1,291	173	1,118
Total	5,099	836	4,263



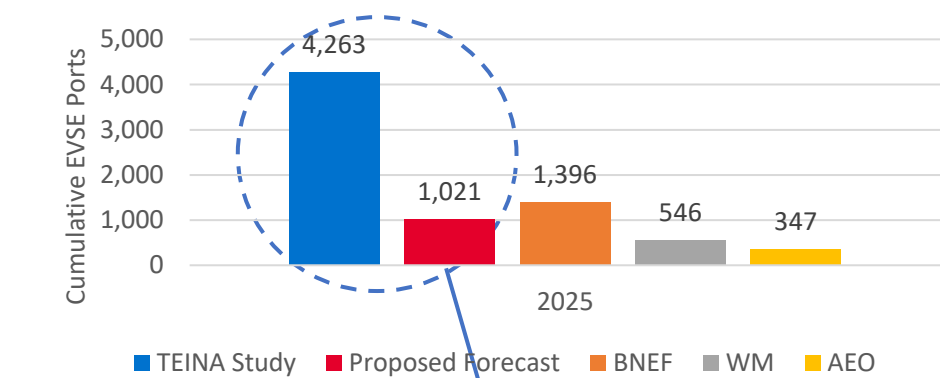
Map of existing EVSE in PacifiCorp's Oregon service area, as presented in Stakeholder Meeting #1 on July 7, 2022.

Estimated Cumulative EVSE Needs in PacifiCorp Service Area by 2025

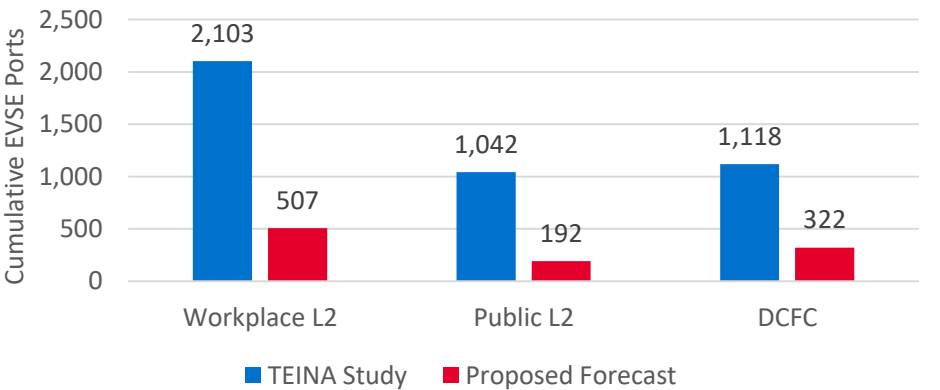


*Currently, only considering the light-duty vehicle forecast

Cumulative EVSE Needs** in PacifiCorp's Oregon Service Area by 2025, by Forecast



EVSE by Type



**Estimated EVSE count based on consistent TEINA model assumptions EVSE to LDV ratios.

What is a reasonable range of cost estimates per port?

Type of EVSE Equipment	Behind-the-Meter		To-the-Meter		Soft Costs	Estimated Range
	Low	High	Low	High		
Level 2: 120/208 V, 3-Phase System	\$10,000	\$12,000	\$5,000	\$7,000	\$5,000	\$20,000–\$24,000
Level 2: 120/240 V, Single-Phase System	\$11,000	\$13,000	\$5,000	\$6,000	\$5,000	\$21,000–\$24,000
DCFC: 277/480 V, 3-Phase System	\$118,000	\$127,000	\$10,000	\$18,000	\$15,000	\$143,000–\$160,000

Source: PacifiCorp Commercial Oregon Site Assessments 2021 and 2022, includes charger costs

Note: Recent industry reports share similar Level 2 port costs

- SCE Charge Ready Pilot Program, June 2021, Actual Port Value: \$14,000–\$15,000/port
- PG&E EV Charge Ready Network, December 2021, Actual Port Value: \$17,000/port
- SDG&E Power Your Drive, April 2021, Actual Port Value: \$22,000/port

Potential TEINA Maximum Guardrails

- Potential maximum guardrail based on only three use cases:
 - **\$23.9 million to \$66.2 million**
 - Includes only workplace L2, public L2 and DCFC
- PacifiCorp estimates 2023–2025 Clean Fuels and Monthly Meter Charge Revenue at around **\$25-30 million**
- 5 forecasts x 3 cost ranges x 3 example market shares = 45 scenarios
- We are highlighting 15 of those here

Portfolio Budget Guardrail (\$ millions) 2025

Forecast	Lower Bound Cost, Lower Investment Share	Mid-Range Cost, Mid-Range Investment Share	Higher Bound Cost, Higher Investment Share
TEINA Study	\$93.1	\$122.3	\$254.3
Proposed Forecast	\$23.9	\$33.1	\$66.2
BNEF	\$32.1	\$43.9	\$87.9
WM	\$13.4	\$19.3	\$38.6
AEO	\$9.0	\$13.5	\$27.1

Goals, Objectives & Strategies



Building the Potential TE Portfolio

TEINA Outputs

Workplace L2s

Public L2s

DCFC



Potential Holistic TE Portfolio

Residential

Multifamily

Reliability

Fleet Depot Charging

EV Codes

Micro-mobility

Data Management

Non-Corridor Public Charging

Public Corridor Charging

Administration

Commercial

Outreach & Education

Medium & Heavy-Duty Charging

Our TE Strategic Framework

GOST Strategy



Draft Goal & Objectives

Goal: To be a trusted advisor and support equitable acceleration of transportation electrification across all our communities in the West

**Objective 1:
Elevate
Awareness of
Transportation
Electrification**

**Objective 2:
Electrify
Equitably,
Enabling Access
Throughout Our
Service Area**

**Objective 3:
Manage Grid
Impacts
Effectively**

**Objective 4:
Reduce Costs to
Customers**

Objective 1 Draft Strategies

Elevate Awareness of Transportation Electrification



- 1 Build internal workforce knowledge and strategy
- 2 Support outreach and educational programs
- 3 Cultivate key partnerships
- 4 Build comprehensive marketing strategy
- 5 Provide technical support services to customers

Objective 2 Draft Strategies

**Electrify
Equitably,
Enabling
Access In Our
Service Area**



- 1** Develop incentive programs focused on underserved customers
- 2** Support EV Code ready advancement
- 3** Build a public infrastructure program for underserved communities
- 4** Build programs that support advancement of medium and heavy-duty electric vehicle adoption in underserved areas
- 5** Create a micro-mobility program for communities to access

Objective 3 Draft Strategies

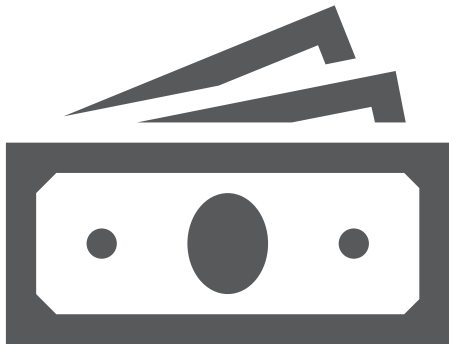
Manage Grid Impacts Effectively



- 1 Conduct ongoing planning studies to understand future of grid impacts
- 2 Develop customer tools to support customers in understanding grid impacts
- 3 Deploy innovative pilots that support management of future load
- 4 Develop resiliency strategy to support EVSE infrastructure and future grid impacts
- 5 Create data management strategies and build reliability programs

Objective 4 Draft Strategies

**Reduce Costs
to Customers**



1

Develop customer incentive programs

2

Identify supporting tariff strategies for customers

3

Leverage federal and state funding opportunities

4

Utilize economies of scale by leveraging BHE wide-companies procurement processes

Draft Objectives Roadmap 2022–2025



Objective 1: Elevate Awareness of Transportation Electrification



Objective 2: Electrify Equitably, Enabling Access Throughout Our Service Area



Objective 3: Manage Grid Impacts Effectively



Objective 4: Reduce Costs to Customers

2023	2024	2025
	Build comprehensive marketing strategy	
	Provide technical support services to customers	
	Cultivate key partnerships	
	Develop and support outreach and education programs	
	Build internal workforce knowledge and development	
	Develop incentive programs focused on underserved communities	
	Support EV Code Ready advancement	
	Build a public infrastructure program for underserved communities	
	Build programs to support MD/HD vehicles in underserved areas	
	Create a micro-mobility program for communities to access	
	Conduct ongoing planning studies to understand future of grid impacts	
	Deploy innovative pilots that support management of future load	
	Develop data management and build reliability strategies	
	Develop customer tools to support customers in understanding grid impacts	
	Develop resiliency strategy to support EVSE infrastructure and future grid impacts	
	Develop customer incentive programs	
	Identify supporting tariff strategies for customers	
	Leverage federal and state funding	
	Utilize economies of scale by leveraging BHE-wide procurement process	

Estimated TE Portfolio Size

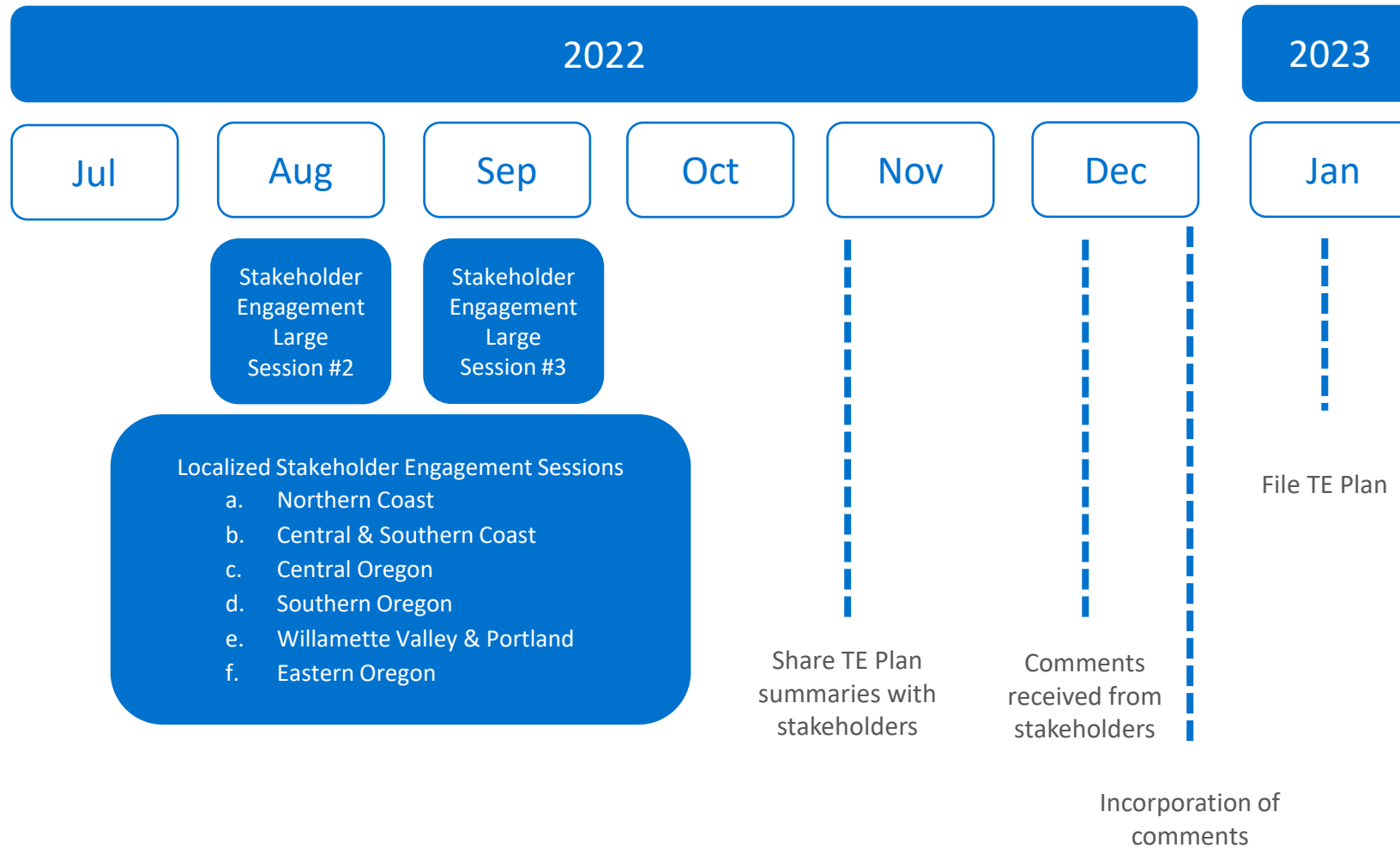
Programmatic Type	Estimated Total Value (\$) 2023–2025	Potential Proposed Forecast Guardrails	Estimated Percentage of Portfolio	Clean Fuels	Sector Support			
					Residential	Commercial	Fleet	Medium & Heavy Duty
Rebates	\$25-\$41 million	\$23-\$66 million	13%		✓	✓		
Make Ready			10%			✓	✓	
Planning, Grid Integration & Load Management			7%	✓	✓	✓	✓	
Public Infrastructure Utility-Owned			10%		✓	✓		✓
EVSE Code Support			3%	✓		✓		
Outreach and Education			5%	✓	✓	✓	✓	✓
Grant Programs			31%	✓	✓	✓		✓
Reliability			5%		✓	✓	✓	✓
IT Management			2%	✓	✓	✓	✓	✓
Admin			15%	✓	✓	✓	✓	✓
Total			100%					

* The estimated range includes a certain level of clean fuels revenue. With market volatility, PacifiCorp has identified programs that can be ramped up and down.

Wrap Up & Next Steps



Draft Milestone Schedule



Next Forum Discussion

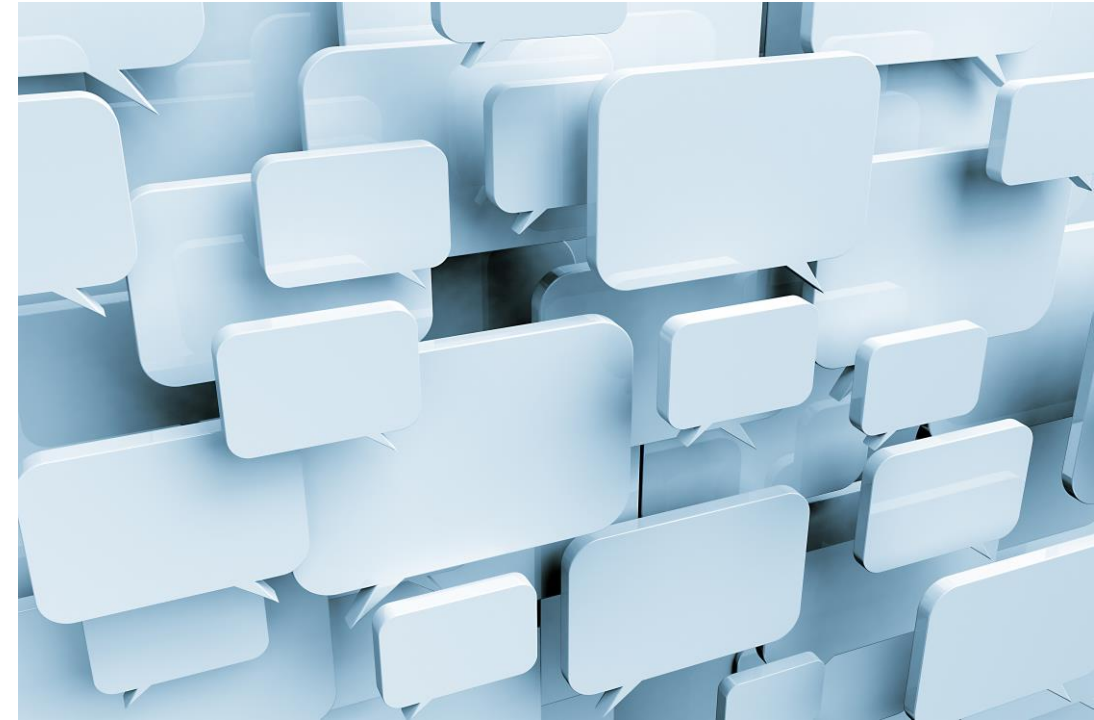
September 23

10:30 a.m.–12:30 p.m.

- Program Portfolio
- Budget Forecasts
- Future Revenue Projections
- Timelines

PacifiCorp Requests Your Feedback

- PacifiCorp actively solicits your feedback on what has been presented and discussed today
- PacifiCorp is particularly interested in feedback regarding the Transportation Electrification Portfolio Guardrails:
 - Do you have thoughts or comments with PacifiCorp's current plan for EV forecast within the territory?
 - Do you have thoughts and comments regarding the draft goal and objectives?
 - Can you provide thoughts and comments on the reasonableness of the TE portfolio value?



**If you have feedback, recommendations for who we should reach out to, or additional resources,
Email us at kate.hawley@pacificorp.com**

QUESTIONS?



Contact Information:
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kate.hawley@pacificorp.com