



NW Seaport Alliance Puget Sound
Zero-Emission Truck Collaborative

Puget Sound Zero-Emission Truck Collaborative

Collaborative 2.0 Meeting
July 9, 2026

Meeting Agenda



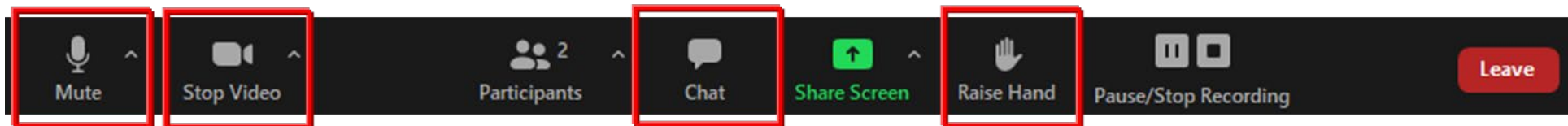
Objectives:

- Affirm Collaborative 2.0 Charter and membership
- Identify and prioritize Collaborative work
- Hear updates on regional ZE drayage topics

1:00 PM	Welcome and Meeting Overview
1:20 PM	Transition to Collaborative 2.0
1:30 PM	Zero Emission Drayage Updates 1 • PSE Planning; Regional EVSE Plan
2:10 PM	Work Planning Exercise 1
2:40 PM	<i>Break (15 min)</i>
2:55 PM	Zero Emission Drayage Updates 2 • Vehicle Models & Costs; Hydrogen Truck Deployment; Policy Updates
3:30 PM	Work Planning Exercise 2
3:50 PM	Public Comment
3:55 PM	Wrap Up and Adjourn
4:00 PM	Adjourn

Participating Effectively via Zoom

- Collaborative members please show your video
- If you're using your telephone for audio, remember to enter your participant ID
- To reduce background noise, please mute yourself when you are not speaking
- During discussions, please let us know you'd like to jump in by "raising your hand"



Public Participation



- For those observing the meeting, please be muted, off video, and off chat until the public comment time
- There will be an opportunity for 2-minute public comments at the end of the meeting. At that time, members of the public who would like to comment should raise their hands if they would like time to speak

Project Website

URL:

<https://www.rossstrategic.net/Zero-Emission-Truck-Collaborative/>

PUGET SOUND ZERO-EMISSION TRUCK COLLABORATIVE

Collaborative 2.0

Decarbonizing Drayage Roadmap

The transition to zero-emission drayage vehicles serving ports in the Puget Sound region is a key step to improve air quality, reduce greenhouse gas emissions, and reduce environmental health disparities in communities living near port terminals and along major freight corridors. The Puget Sound Zero-Emission Truck Collaborative developed the *Decarbonizing Drayage Roadmap* to help chart a just and equitable path through the many opportunities and challenges created by the transition to zero-emission drayage.

The Decarbonizing Drayage Roadmap was developed during the first phase of the Collaborative (Collaborative 1.0). [Materials from this phase are available here.](#)

[Roadmap](#)

[Executive Summary](#)

[Press Release](#)

About Collaborative 2.0

The Puget Sound Zero-Emission Truck Collaborative brings together public agencies, ports, utilities, industry, and community organizations to support the transition to zero-emission drayage trucks in the Puget Sound region. During its first phase, the Collaborative developed the Decarbonizing Drayage Roadmap, which outlines shared priorities and recommended actions. The current phase of work (Collaborative 2.0) is focused on implementation, supporting partners in advancing priority actions, coordinating across efforts, and accelerating progress toward the deployment of zero-emission drayage trucks and supporting infrastructure in the region.

Collaborative 2.0 Meeting Materials

Materials will be posted here as they become available.

Ice Breaker – Polling

- We are using PollEverywhere today to elicit insights from Collaborative members
- Please use a phone or browser screen to access the polls using the QR code or website address:
PollEv.com/idealtruck938

Here's today's icebreaker question!

What's your favorite summer activity?

Join by Web
PollEv.com/idealtruck938

Join by scanning the QR code





**NW Seaport Alliance Puget Sound
Zero-Emission Truck Collaborative**

Transition to Collaborative 2.0

Membership



- Welcome to new members joining today!
 - Pat Swiger, Stryder
 - Ryan Lucido, Husky Terminal
- Holding some membership placeholders open pending ongoing outreach
 - Logistics
 - Labor

Charter: Collaborative Purpose



- Contribute to effective implementation of Roadmap
- Identify implementation gaps and develop new strategies where needed
- Provide a “hub” of information about the status and trajectory for Puget Sound drayage decarbonization
- Share lessons and inform best practices
- Connect with related regional efforts
- Facilitate public communication and stakeholder engagement
- Inform complementary policy and program development
- Help attract state, federal, and private sector funding and investment

Charter: Operating Guidelines



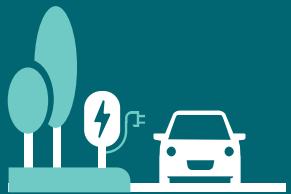
- Aim for convergence, not consensus
- $\frac{3}{4}$ vote in favor to add members. Members can replace themselves without a vote.
- Alternates OK; can observe if primary member attending
- Community-based organizations and driver representatives eligible for stipend compensation
- All full Collaborative meetings open to the public with time for comment
- Member observations presumed to represent their personal, not organizational, perspectives
- Members encouraged to reach out to constituencies to gather input and ideas
- Please frame observations in terms of needs and interests, not positions
- Refrain from characterizing the views of other members in public statements



**NW Seaport Alliance Puget Sound
Zero-Emission Truck Collaborative**

Zero Emission Drayage Updates

- Puget Sound Energy programs and planning
- Puget Sound Clean Air Agency Regional EVSE Plan



PSE Up & Go Electric

Agenda

- Up & Go Electric Products
- Transportation Emission Reduction Grants
- 2027 Transportation Electrification Plan

PSE Up & Go Electric Current Opportunities



EDUCATION & OUTREACH

- Awareness of EVs & charging
- Costs and benefits of switching
- Hands-on EV experiences & virtual education



MULTIFAMILY CHARGING

- Expand access to charging for multifamily property tenants
- Reduce upfront costs for building owners and management



FLEET CHARGING

- For school districts, municipalities, small businesses & community orgs with fleet operations
- Participants automatically enrolled in optional load management program



WORKPLACE CHARGING

- Making EVs an option for commuters who drive longer and/or don't have charging at home yet
- Reduce upfront costs for employers and workplace facilities



PUBLIC CHARGING

- Increase charging availability to EV drivers who don't have access to home or workplace charging
- Traditional ground-mounted installations and pole-charging



HOME CHARGING

- Rebate program for eligible Level 2 Chargers
- Enhanced incentives available for income-eligible customers
- Participants automatically pre-enrolled in Flex EV



TECHNOLOGY DEMONSTRATIONS

- Test technologies or services different from those already served under other programs
- Evaluate impacts and assess viability for full scale deployment



COMMERCIAL CHARGING RATES

- For fleets and public charging operators
- Offers three pricing structures that can be more cost effective
- Limited participation in 2026 with open enrollment in 2027

PSE Up & Go Electric Charging Program Ownership Options



An easy way for building owners and managers to install EV charging for tenants, employees, their fleets, and the public



Two installation and ownership options:

- PSE-owned turnkey service: PSE covers 100% of installation and charger costs up to set caps per port, and cover ongoing maintenance
 - ❑ Chargers must be installed on a customer's meter (except for public charging)
- Customer-owned: Customers install their own chargers and receive an incentive from PSE covering up to 50% of costs
 - ❑ Empower Mobility customers may receive up to 100% of installation costs

PSE Up & Go Electric Charging Program Eligibility

- ◆ Must be a PSE electric account holder
 - Transmission-only customers are not eligible
- ◆ Must agree to a service agreement
 - May also need to agree to an easement for transformers and wiring (project-dependent)
- ◆ Operate the chargers for the entire 10-year term
- ◆ Pay for the electricity used by the chargers
 - This requirement does not apply to properties hosting PSE-owned public chargers
- ◆ **Empower Mobility:** PSE customers who *primarily* serve and/or benefit **historically underrepresented communities** may be eligible for enhanced incentives
 - Includes higher charger and infrastructure incentives and vehicle incentives

Up & Go Electric Commercial Charging Rates Eligibility



Eligible Rate types: 24E, 25E, 26E, 31E

- Tariff Schedule 558 - Electrical Vehicle Fleet Charging General Service
- This schedule is specifically designed for non-residential customers who have **permanently installed** AMI electric meters serving Electric Vehicle Supply Equipment (“EVSE”) at charging site(s).



Pricing Options

PSE Up & Go Electric Commercial Charging Rates offers three pricing structures that can be more cost effective and efficient for non-residential customers who charge during off-peak hours

What are peak and off-peak hours?

Peak hours are times when demand on the electrical grid is highest. Off-peak hours are times when electrical demand is lowest.

- Peak hours: 4 p.m. – 9 p.m., except on holidays
- Off-peak hours: all other hours, including holidays

What are Demand Charges?

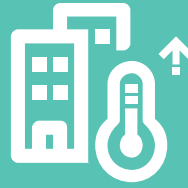
Demand charge is based on the highest rate at which electricity is used at any given moment (kW) during a billing period



Energy Only

>> You pay for the electricity you use, with a higher rate for electricity used during peak hours and a lower rate for electricity used during off-peak hours.

- **Good for:** customers who want simple bills and full control of what they pay based on when they charge.



Demand Only

>> You pay a rate based on your moment of highest electricity demand during peak hours and non-peak hours.

- **Good for:** customers with predictable electricity needs who can stagger vehicle charging throughout the day, flattening their demand during off-peak hours, and use energy management and smart charging systems.



Energy + Demand

>> You pay for the electricity you use with your rate based on your highest 15-minute period of electricity demand during a billing month and whether that occurred during peak or off-peak hours.

- **Good for:** customers with large charging and fleet operations who can manage their peak electricity usage but aren't as flexible on when charging can occur.

Transportation Emission Reduction (TER) Grants

1. **TER Project Grant:** PSE can fund your transportation electrification (TE) projects
2. **TER Matching Grant:** PSE can be your funding match for other non-PSE TE grants
3. **TER Writing Grant:** PSE can provide funding to help you hire a grant writer for non-PSE TE grants

Eligibility:

- Any non-residential PSE electric account holder or applicant formally partnered with a PSE non-residential electric customer
- Projects must advance transportation electrification in PSE electric service area **and**;
- Primarily benefit residential customers and designated communities

Projects should:

- Advance electric mobility in communities
- Create inclusive projects that directly serve communities and fill market gaps
- Pursue TE projects that provide environmental and other benefits to your community



WUTC EV Policy Statement

WUTC is releasing a new EV policy statement in 2026.

Key areas of focus so far:

Market Transition and Customer Expectations

EV market growth drivers new baseline requirements for charging access, affordability and reliability.

Policy Shift to Proactive Investment

2026 policy mandates utilities to build infrastructure ahead of EV load growth for reliability.

Financial and Regulatory Incentives

PDI adoption ties to incentive, avoiding stranded assets and reducing long-term customer needs

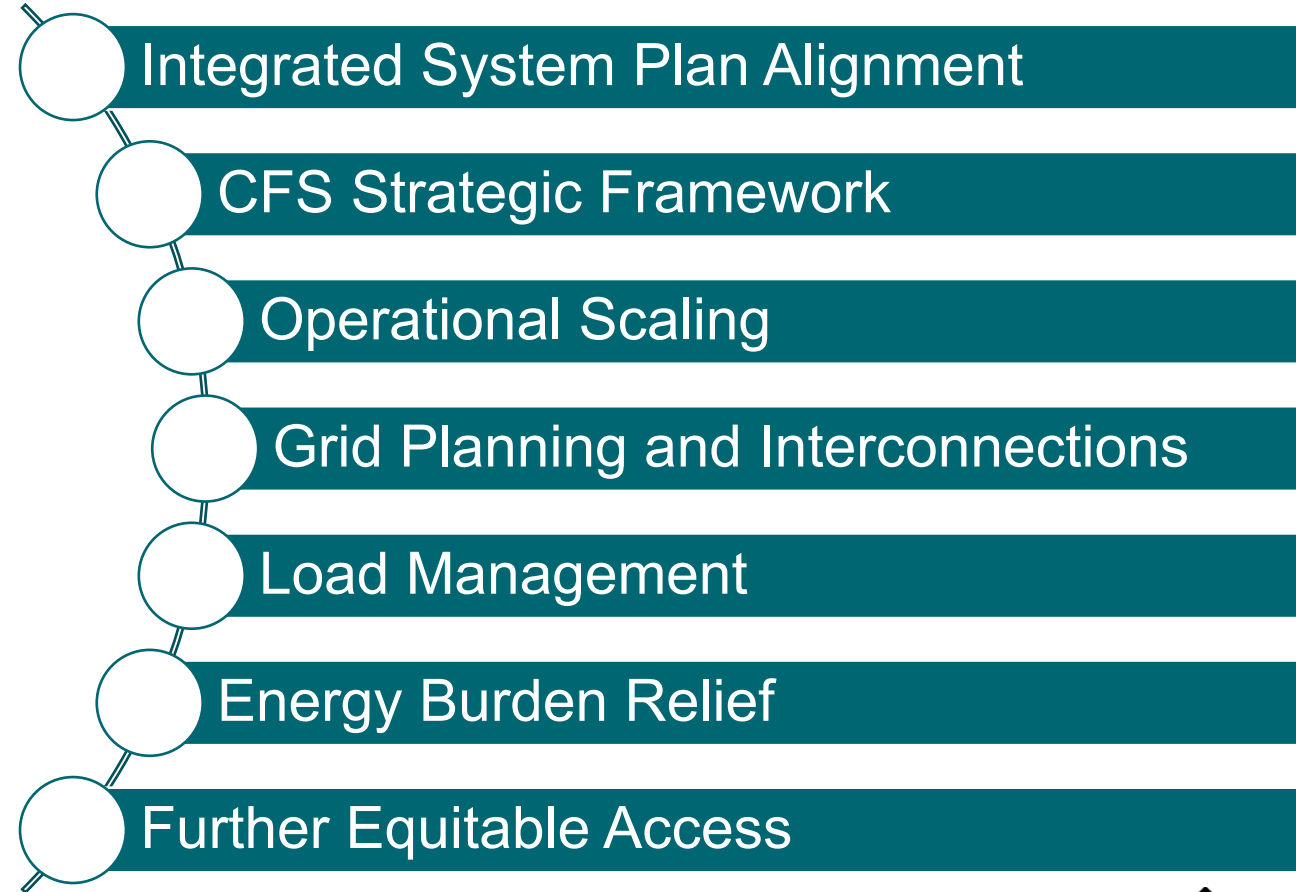
Technical Triggers and Data-Driven Decisions

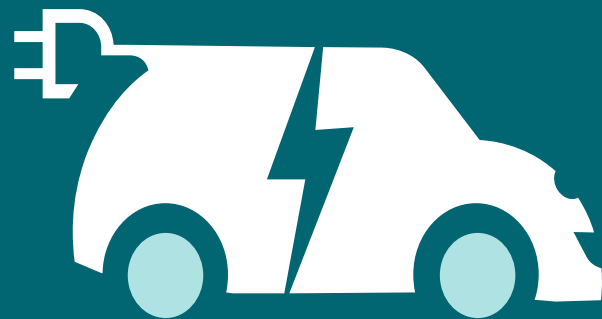
Clear upgrade thresholds and high-resolution forecasting replace discretionary upgrades with data signals.

PSE's 2027 Transportation Electrification Plan

PSE is filing a revised Transportation Electrification Plan in 2027.

The plan will have several objectives:





UP & GO
ELECTRIC



Puget Sound Region EV Charging Infrastructure Plan

Puget Sound Zero-Emission Truck Collaborative 2.0 Meeting

July 9th, 2026



PUGET SOUND
Clean Air Agency





Agenda

Background

Plan Benefits, Design, & Key Components

Project Partners & Engagement

Timeline & Plan Implementation

Q & A

Why Create a Regional Plan?



- 
- Support jurisdictions of all sizes and ensure regional consistency
 - Achieve economies of scale and funding competitiveness
 - Clarify public sector roles and potential partnerships
 - Identify priority areas and use cases for charging
 - Support equity in charging build-out
 - Create strategies to reduce frequent barriers

How Will the Plan Be Designed?



- Shared roadmap for expanding charging for light-, medium-, and heavy-duty on-road vehicles
- Coordinated recommendations for where and how charging should be installed
- Build on existing resources like plans, data, & best practices
- Focus on supporting local governments
- Actionable resource!!

Key Plan Components

8 charging use cases for light-, medium-, and heavy-duty vehicles



Data analysis → Census tract-level charging needs



Site evaluation criteria → Selecting specific parcels

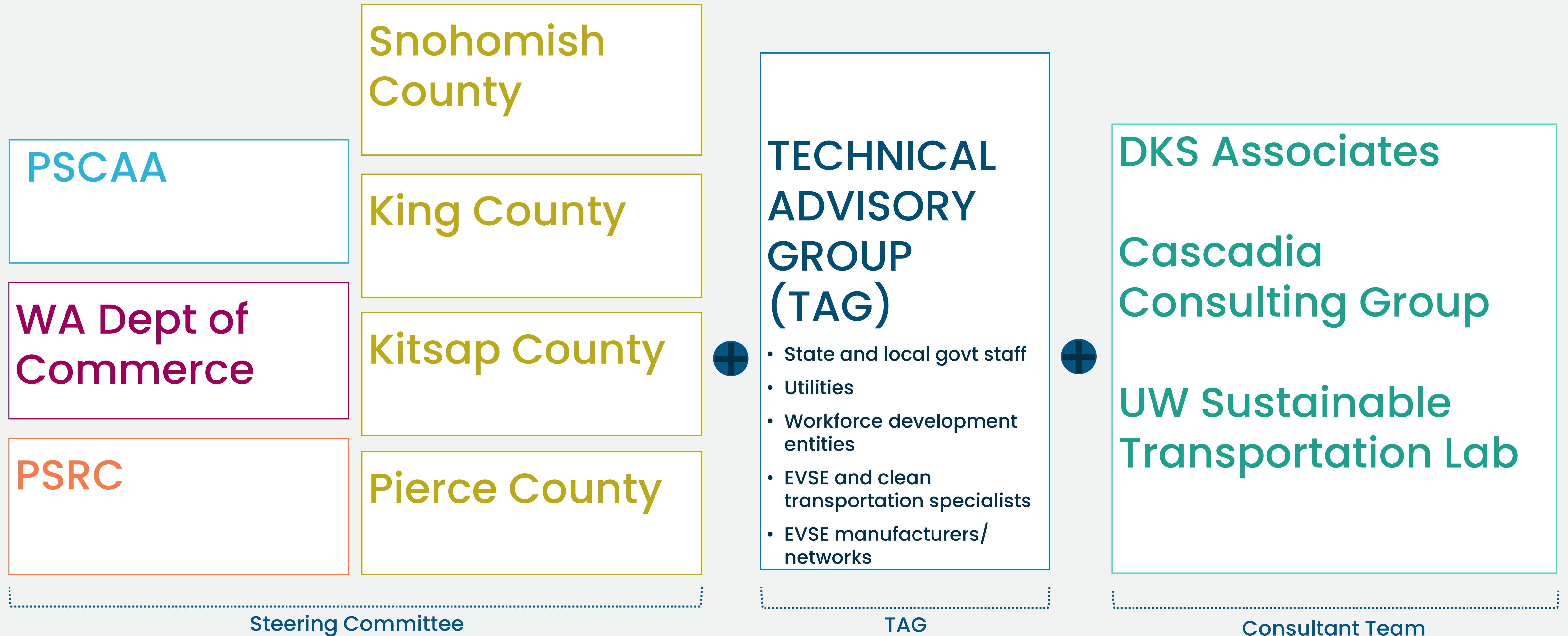


Roles, coordination, & partnerships



Regional action framework → Specific and actionable steps

Project Team Structure



Who Is Giving Input?

- Local government staff
- Tribes
- Utilities
- Transit agencies
- Ports
- Community-based organizations
- Workforce entities
- Rideshare drivers
- Potential charging site hosts
- School districts
- Equipment manufacturers & vendors
- Workforce organizations
- Fleets

How Is Input Being Collected?



Survey: City and county staff, utilities, transit agencies, potential site hosts, ports



Focus groups: Transit agencies, potential site hosts, ports, community-based organizations, workforce development entities



Interviews: Tribes, utilities, rideshare and gig drivers



Virtual workshop: City and county staff

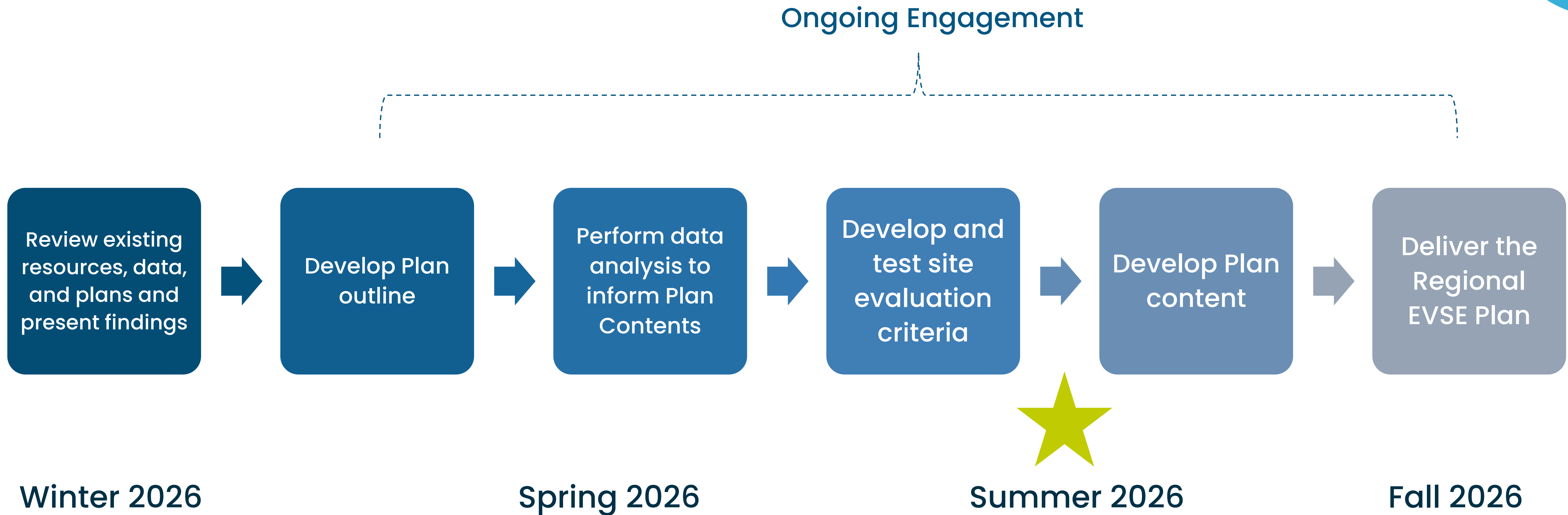


Online engagement hub for draft Plan: All audiences

May & June

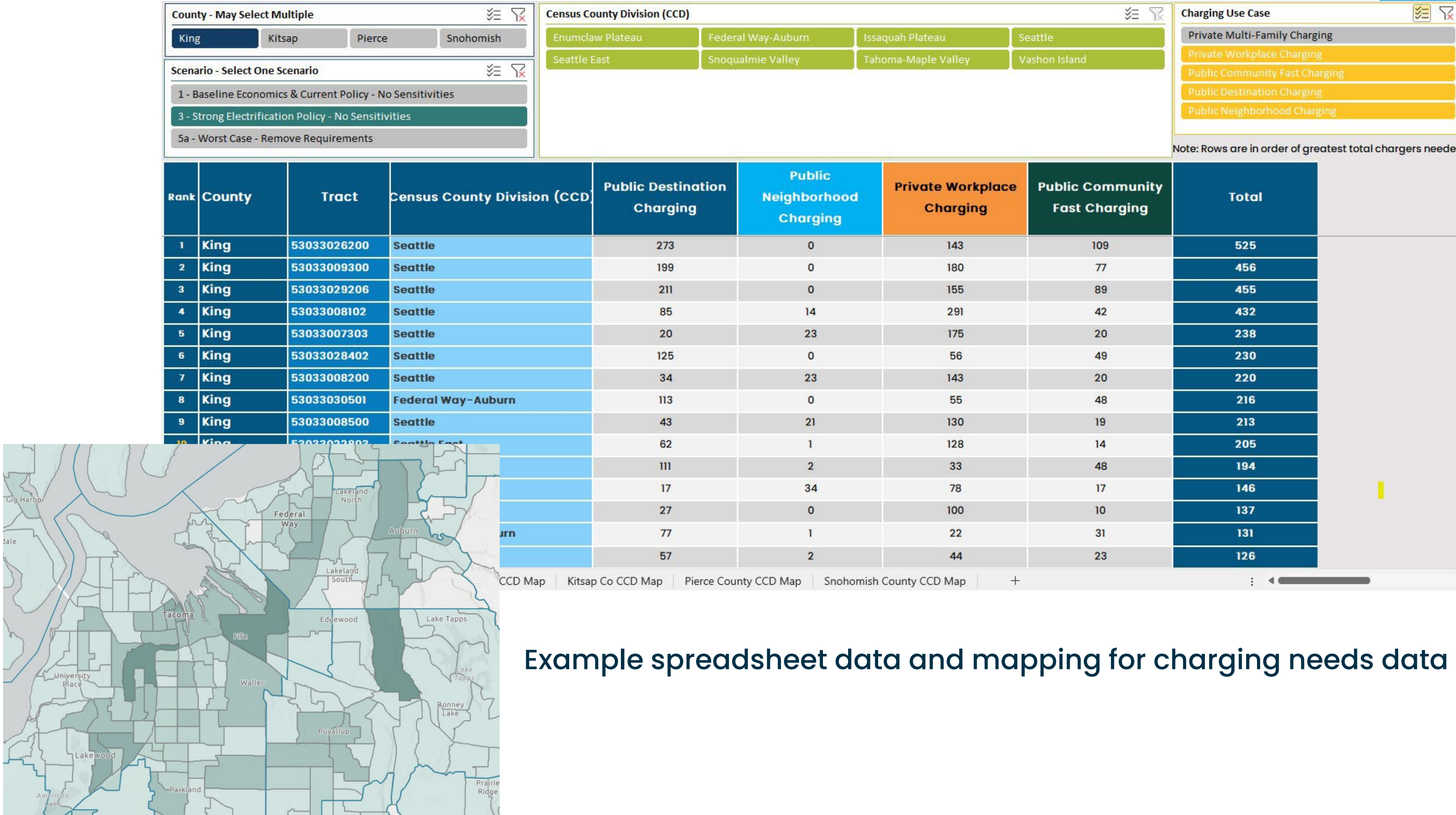
Fall

Plan Timeline



Implementing the Plan

- The final Plan will likely include:
 - PDF document
 - Interactive maps
 - Data spreadsheets
 - Decision-making tools



Example spreadsheet data and mapping for charging needs data

Thank You!

- Email
EricaW@pscleanair.gov
with additional thoughts
or questions



<https://pugetsoundrev.org/contact/>



**NW Seaport Alliance Puget Sound
Zero-Emission Truck Collaborative**

Work Planning Exercise 1

Individual and Small Group Brainstorming



- *Using our ability to collaborate, align, and problem solve, where can the Collaborative add significant value to implementing drayage decarbonization in the next 2-3 years?*
1. Individual ideas (3 min)
 2. Pairs of 2 (5 min)
 3. Groups of 4 (7 min)
 4. Report out via chat + discussion



**NW Seaport Alliance Puget Sound
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Break (return at 2:45)



**NW Seaport Alliance Puget Sound
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Zero Emission Drayage Updates

- Vehicle Models & Costs
- Hydrogen Truck Deployment
- Policy Updates



CLASS 8 ZERO-EMISSION SEMI-TRACTORS

U.S. Market Summary — Battery-Electric & Hydrogen Fuel Cell Availability, Pricing, and Energy Capacity, with Washington State Incentives

Prepared July 2026

Market Snapshot: New ZEV Options and Cost Improvements

10+

zero-emission models available or imminent in the U.S. — battery-electric and hydrogen fuel cell

\$260K–\$450K+

purchase price spread — Tesla & Windrose undercut legacy OEMs by ~\$100–150K

~40%

of purchase price covered by Washington's new WAZIP point-of-sale vouchers

- Tesla began mass production of the Semi in early 2026 in Nevada, targeting 5,000–15,000 deliveries this year at prices that undercut the ~\$435K average for zero-emission Class 8 trucks by roughly \$145K.
- Legacy OEM regional tractors (eCascadia, VNR Electric, T680E, 579EV) are proven — 750+ Volvo VNR Electrics in service — but carry shorter ranges of 150–275 miles at premium prices.
- The field is broadening: Windrose (April 2026) and Tern (Hino/Hexagon Purus) are delivering; hydrogen fuel cell tractors from Hyundai and Cenntro extend zero-emission range past 450 miles without depot charging.
- Washington launched WAZIP on April 29, 2026 — \$112M in first-come, first-served point-of-sale vouchers covering both battery-electric and hydrogen trucks.

Tesla Semi

AVAILABLE NOW — RAMPING

TWO VARIANTS

Standard Range — ~\$260K

325 mi at 82,000 lb GCW; battery 548 kWh

Long Range — ~\$290–300K

500 mi range; 1.2 MW peak charging; battery 822 kWh

Prices per CARB filings and Tesla quotes; both variants use 1.7 kWh/mi efficiency, 800 kW tri-motor



Timing

Mass production began early 2026 near Gigafactory Nevada; 5,000–15,000 deliveries projected in 2026, scaling toward 50,000/yr capacity.



Charging

First Class 8 tractor supporting megawatt charging — ~28 cents/mile energy cost in real-world tests vs ~64 cents for diesel.



Traction

370-truck WattEV order (>\$100M); PepsiCo, DHL pilots reported strong satisfaction with range and efficiency.

Legacy Leaders: Freightliner & Volvo

Freightliner eCascadia

SINCE 2022



Battery: 291 kWh (2-pack) or 438 kWh (3-pack) usable



Range: 155–230 mi; day cab, single or tandem drive



Price: Not published; est. ~\$400–450K before incentives

270 kW charging, 80% in ~90 min. WAZIP-eligible; Schneider fleet has passed 1M electric miles.

Volvo VNR Electric

SINCE 2020



Battery: 4 to 6 packs; up to ~565 kWh (six-battery config)



Range: Up to 275 mi; 4x2, 6x2, 6x4 tractor configs



Price: Not published; est. ~\$400–450K before incentives

750+ trucks in U.S./Canada service, 30M+ zero-emission miles. WAZIP-eligible; 84 certified EV dealers.

PACCAR: Kenworth T680E & Peterbilt 579EV

Next-generation tractors on a shared, ground-up PACCAR ePowertrain — unveiled ACT Expo 2025, deliveries began late 2025



Battery capacity

Three battery-string configurations, up to 500 kWh in the largest pack; modular design allows flexible wheelbase and weight distribution.



Range & duty cycle

200+ miles; designed for short/regional haul, LTL, and drayage. Day cab tractor, 6x4, up to 82,000 lb GVWR.



Charging

CCS1 DC fast charging at an industry-leading 350 kW peak — up to 90% charge in roughly two hours.



Price & timing

Not published; prior-gen units listed at \$400K+. Orders open now at U.S. and Canadian dealers, including Washington; both are listed in the WAZIP-eligible catalog family (Kenworth trucks confirmed).

New Entrants: Windrose R700 & Tern RC8

WINDROSE R700

~\$270K / ~\$290K

436 kWh (200–250 mi) or 730 kWh (400–450 mi) — sleeper cab for long haul

800 V platform, 1,400 hp, CALB LFP cells, megawatt-charging capable

U.S. deliveries began April 2026 via importer Xos Trucks; 100+ committed orders, “several hundred” targeted this year

Built in China; tariffs factored into pricing

TERN RC8 (HINO × HEXAGON PURUS)

538 kWh

Dual 269 kWh Gen3 packs at 750 V; ~200-mile regional duty cycles; 240 kW charging (0–80% in <2 hrs)

Lightest Class 8 ZEV tractor (~18,000 lb curb); 4x2, 68,000 lb GVWR; built in Dallas on U.S.-assembled Hino XL chassis

In serial production now via Hino dealer network; new 6x2 80,000 lb GVWR variant delivers early 2027

Price not published; positioned for metro-regional fleets

Hydrogen Fuel Cell Tractors: Hyundai & Cenntro

Fuel cell electric tractors refuel in minutes and extend zero-emission range beyond battery-electric limits — both qualify as ZEVs under WAZIP

Hyundai XCIENT Fuel Cell



Powertrain: Twin 90 kW fuel cells (180 kW) + battery buffer; 350 kW e-motor



Range: ~450 mi fully loaded; 10 tanks, 700-bar fast refueling



Availability: Now, via fleet programs — 6x4 day cab; 4M+ global miles since 2020

Price not published; sold/leased through fleet deployments (e.g., California drayage projects).

Cenntro BM860H (Bison Motors)



Powertrain: 210 kW hydrogen fuel cell system, 2nd-generation design



Range: Up to 528 mi with full payload; rapid refueling



Availability: EPA-certified July 2025; CARB review pending; U.S. final assembly — commercial timing TBD

Price not published; succeeds the LMH864 first shown at CES 2023.

Near-Term Pipeline (2026–2027)



Volvo VNL Electric *Expected ~2027*

Next-gen long-haul flagship previewed at ACT Expo 2026 on Volvo's new multi-energy platform with Proterra Onyx batteries. Targets regional haul, drayage, and distribution; order timeline has slipped from an original late-2025 window.



Tern RC8 6x2 80k *Deliveries early 2027*

Higher-capacity 80,000 lb GVWR variant of the RC8 with the same 538 kWh dual-pack system and 680 hp peak; production starts Q3 2026, pre-orders open now.



Horizon Motor (startup) *Timing & price TBD*

Debuted at ACT Expo 2026 as a direct Tesla Semi challenger: two-seat half-sleeper cab, 29,000 lb curb weight, claimed 350-mile range, dual-plug CCS1 charging.

Washington State Incentives

WAZIP

*Washington Zero-Emission Incentive Program —
launched April 29, 2026*

- \$112M in point-of-sale vouchers funded by the Climate Commitment Act
- Designed to cover ~40% of purchase price; larger vouchers for small businesses (<\$10M annual receipts)
- Covers battery-electric AND hydrogen fuel cell Class 8 tractors, plus charging/fueling infrastructure add-ons
- First-come, first-served through pre-approved dealers



Port & drayage programs

The Northwest Seaport Alliance funded a Zeem Solutions charging depot in SeaTac (250 vehicles/day) with ZEV drayage trucks deploying in 2026.



Illustrative math

A ~\$290K Tesla Semi Long Range or Windrose R700 with a ~40% WAZIP voucher nets to roughly \$175K — near the ~\$160–170K price of a new diesel Class 8 tractor.

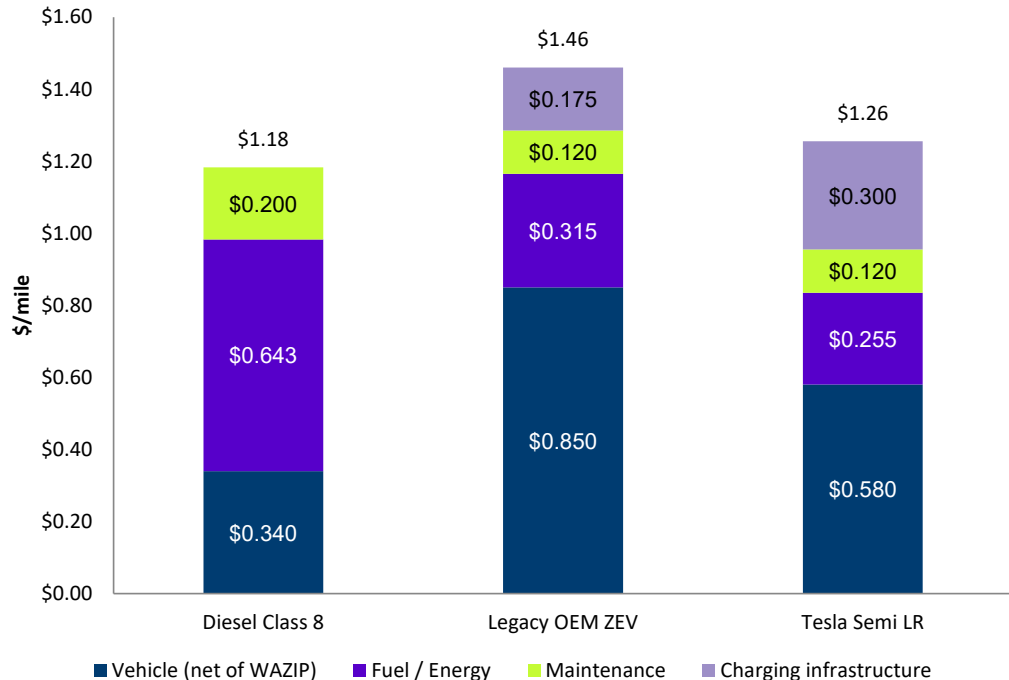


Act early

Vouchers are first-come, first-served and demand is expected to be high; the federal purchase credit ended Sept 2025, making state programs the primary funding source.

Cost per Mile: HD Drayage in Washington

Illustrative total cost per mile incl. depot charger installation — diesel vs. legacy OEM ZEV vs. Tesla Semi LR. 2025 diesel pricing



\$1.18/mi

Diesel Class 8

Fuel dominates diesel truck CPM. CY2025 ~\$4.50/gal diesel (~\$0.64/mi at 7.0 mpg)

\$1.46/mi

Legacy OEM ZEV

WA electricity price (~\$0.15/kWh) cuts energy to ~\$0.32/mi; vehicle price and charger install keep capital costs high

\$1.26/mi

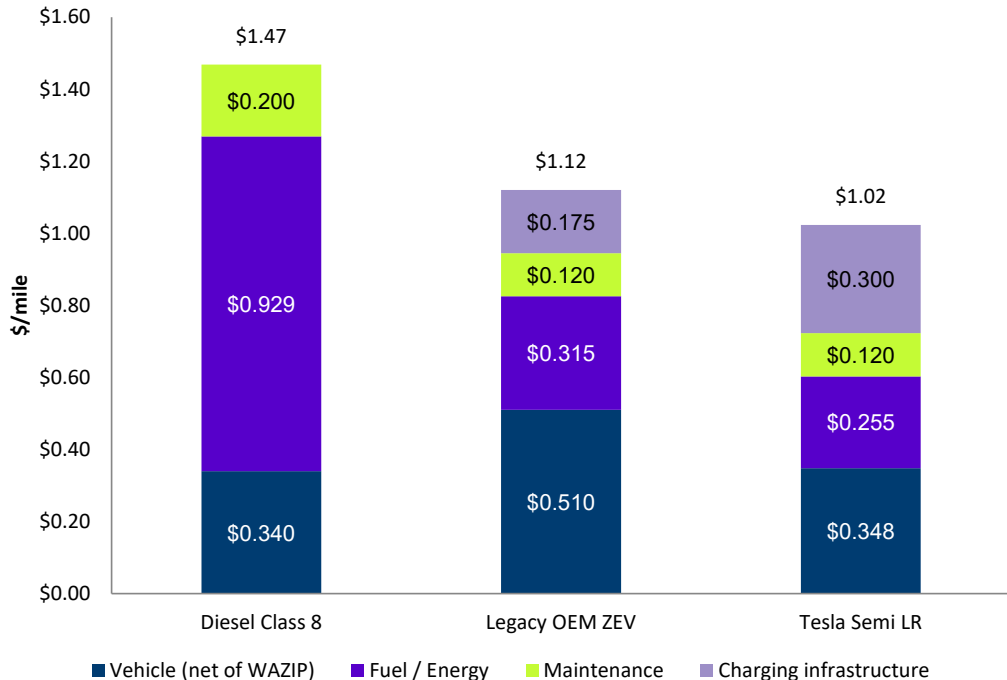
Tesla Semi Long Range

~10% above diesel after charger capex — lowest sticker price and best efficiency (1.7 kWh/mi) compound vs other EVs

Assumptions: 500,000-mile service life, straight-line amortization, no residual value or financing. Diesel \$170K @ 7.0 mpg, \$4.50/gal (WA avg, CY2025); legacy ZEV \$425K @ ~2.1 kWh/mi; Tesla LR \$290K @ 1.7 kWh/mi; depot power ~\$0.15/kWh (Approx avg WA PSE cost; excludes demand charges & charger capex); maintenance per industry TCO studies; charger install \$250/kW × 350-600 kW per truck excl. hardware (shared/managed charging and utility make-ready offsets reduce this); No WAZIP voucher.

Cost per Mile: HD Drayage in Washington

Illustrative total cost per mile incl. depot charger installation — diesel vs. legacy OEM ZEV vs. Tesla Semi LR, current diesel prices, net of WAZIP



\$1.47/mi

Diesel Class 8

Fuel dominates at WA's record ~\$6.50/gal diesel (~\$0.93/mi at 7.0 mpg)

\$1.12/mi

Legacy OEM ZEV

WA electricity price (~\$0.15/kWh) cuts energy to ~\$0.32/mi; vehicle price and charger install keep capital costs high

\$1.02/mi

Tesla Semi Long Range

~31% below diesel after charger capex — lowest sticker price and best efficiency (1.7 kWh/mi) compound

Assumptions: 500,000-mile service life, straight-line amortization, no residual value or financing. Diesel \$170K @ 7.0 mpg, \$6.50/gal (WA avg, Mar 2026); legacy ZEV \$425K @ ~2.1 kWh/mi; Tesla LR \$290K @ 1.7 kWh/mi; depot power ~\$0.15/kWh (Approx avg WA PSE cost; excludes demand charges & charger capex); maintenance per industry TCO studies; charger install \$250/kW × 350 kW-600kW per truck excl. hardware (shared/managed charging and utility make-ready offsets reduce this); WAZIP ~40% voucher illustrative.

At a Glance: Model Comparison

Model	Purchase Price	Energy Capacity	Range	U.S. Availability
Tesla Semi (BEV)	~\$260K (Std) / ~\$290–300K (LR)	548 / 822 kWh	325 / 500 mi	Now — mass production ramping 2026
Windrose R700 (BEV)	~\$270K / ~\$290K	436 / 730 kWh	200–250 / 400–450 mi	Now — first deliveries Apr 2026
Freightliner eCascadia (BEV)	Not published; est. \$400K+	291 / 438 kWh usable	155–230 mi	Now — in production since 2022
Volvo VNR Electric (BEV)	Not published; est. \$400K+	Up to ~565 kWh (6 packs)	Up to 275 mi	Now — 750+ in service
Kenworth T680E (BEV)	Not published; est. \$400K+	Up to 500 kWh	200+ mi	Now — deliveries from late 2025
Peterbilt 579EV (BEV)	Not published; est. \$400K+	Up to 500 kWh	Up to 200 mi	Now — deliveries from late 2025
Tern RC8 (BEV)	Not published	538 kWh (2× 269 kWh)	~200 mi duty cycle	Now — 6x2 80k variant early 2027
Hyundai XCIENT (FCEV)	Not published; fleet programs	180 kW fuel cell + battery; 700-bar H ₂	~450 mi loaded	Now — via fleet deployments
Cenntro BM860H (FCEV)	Not published	210 kW fuel cell system	Up to 528 mi	EPA-certified 2025; timing TBD
Volvo VNL Electric (BEV)	TBD	TBD (Proterra Onyx platform)	TBD	Expected ~2027
Horizon Motor (BEV)	TBD	TBD	~350 mi claimed	Debuted May 2026; timing TBD

Prices before incentives (e.g., ~40% WAZIP vouchers in Washington). CARB reports a ~\$435K average for zero-emission Class 8 trucks in 2024; a new diesel tractor runs ~\$160–170K.

Questions

Backup: Data Sources & References

All figures as reported through July 2026. Prices and availability are subject to change; confirm current WAZIP voucher amounts and eligible-vehicle catalog with WSDOT/CALSTART before purchase.

OEM SPECIFICATIONS

- Tesla Semi specs & CARB price filings — tesla.com; electrive.com (Feb 2026); Electrek (Feb 2026)
- Freightliner eCascadia — freightliner.com specifications; dealer spec sheets
- Volvo VNR Electric & VNL Electric preview — volvotrucks.us; Volvo Group press (May 2026); ACT News (May 2026)
- Kenworth T680E / Peterbilt 579EV — kenworth.com & peterbilt.com; ACT Expo 2025 releases
- Hyundai XCIENT Fuel Cell — ecv.hyundai.com; Hyundai Motor press (ACT Expo)

NEW ENTRANTS & MARKET DATA

- Windrose R700 — Transport Topics (Apr 2026); Charged EVs (Apr 2026)
- Tern RC8 — Hexagon Purus / Hino press (May 2024); Clean Trucking (Dec 2025)
- Cenntro BM860H — Cenntro/Bison Motors release; Truck News (Jul 2025)
- Horizon Motor — Charged EVs, ACT Expo 2026 (May 2026)
- Pricing benchmarks — ICCT truck electrification analysis (Apr 2026); CARB ZE Class 8 pricing report (2024); MIT Technology Review (May 2026)
- Charger installation \$/kW — ICCT charging cost working paper (Nicholas, 2019); NREL project data (electrical infrastructure 40–60% of DCFC project cost)

WASHINGTON INCENTIVES

- WAZIP program — WSDOT launch announcement (Apr 29, 2026); WAZIP implementation manual, wsdot.wa.gov
- Program design & voucher levels — Washington State Standard (Jan 2026); electrive.com (Apr 2026)
- Seattle & port programs — Washington State Standard; Northwest Seaport Alliance / Zeem Solutions release (2025)
- Diesel price reference — ICCT (2025 model year median); TEC Equipment via WA State Standard
- Cost-per-mile inputs — WA diesel avg \$6.53/gal, AAA/GasBuddy via KIRO 7 (Mar 2026); WA commercial power 9.8¢/kWh, EIA via Electric Choice (Jul 2026); Tesla 1.7 kWh/mi per CARB filing

HTEC Overview

Hydrogen Truck Deployment

Terry Howe
thowe@htec.ca



www.htec.ca

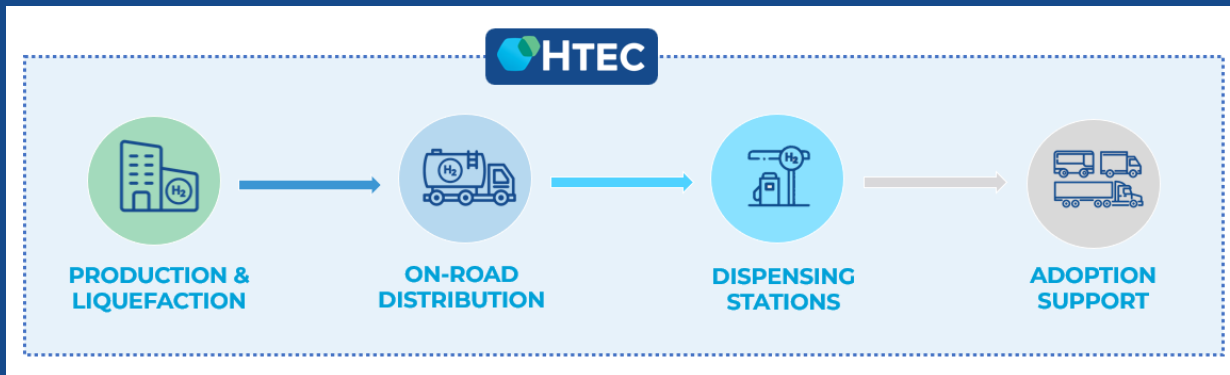
HTEC respectfully acknowledges that its head office is situated on the traditional and unceded territories of the xʷməθkʷəy̓əm (Musqueam), Skwxwú7mesh (Squamish) and Səlilwəta! (Tsleil-Waututh) Nations.

HTEC OVERVIEW

HTEC's mission is to **fuel the drive to hydrogen** by designing, building, owning, and operating solutions that enable low carbon hydrogen mobility ecosystems.

What we do

- Hydrogen Production
- Fueling Stations & Distribution
- Heavy-Duty Hydrogen Fuel Cell Vehicle Leasing
- Engineering Services



Canada's First & Only Commercial Hydrogen Transportation Hub – in Operation Now!

- Publicly available **light-duty station** network
- Commercially available **heavy-duty fueling station**
- **Commercial-scale electrolyzer**
- Fleet of **Hydrogen Fuel Cell Trucks** for lease

Metro Vancouver Hydrogen Hub

COMMERCIALLY OPERATIONAL TODAY



HD Station Network

2 x 700 BAR
2 x 350 BAR



UP TO 2 TPD BURNABY CLEAN HYDROGEN PRODUCTION FACILITY



300+
FCEVs



Class 7 & 8 FCETs

12+ FUEL CELL TRUCK FLEET



H2 RTG Crane PORT OF VANCOUVER



LD Station Network

7 x COMMERCIALLY AVAILABLE
PUBLIC FUELING STATIONS 700 BAR



Heavy-Duty Fueling Station

HTEC's Heavy-Duty Cardlock, Tsawwassen



1st

Commercial HD
station in BC

12+

Class 8 trucks
supported

700/350

Bar pressure

<20

Min fill time

Up to

400kg

Dispensed per day

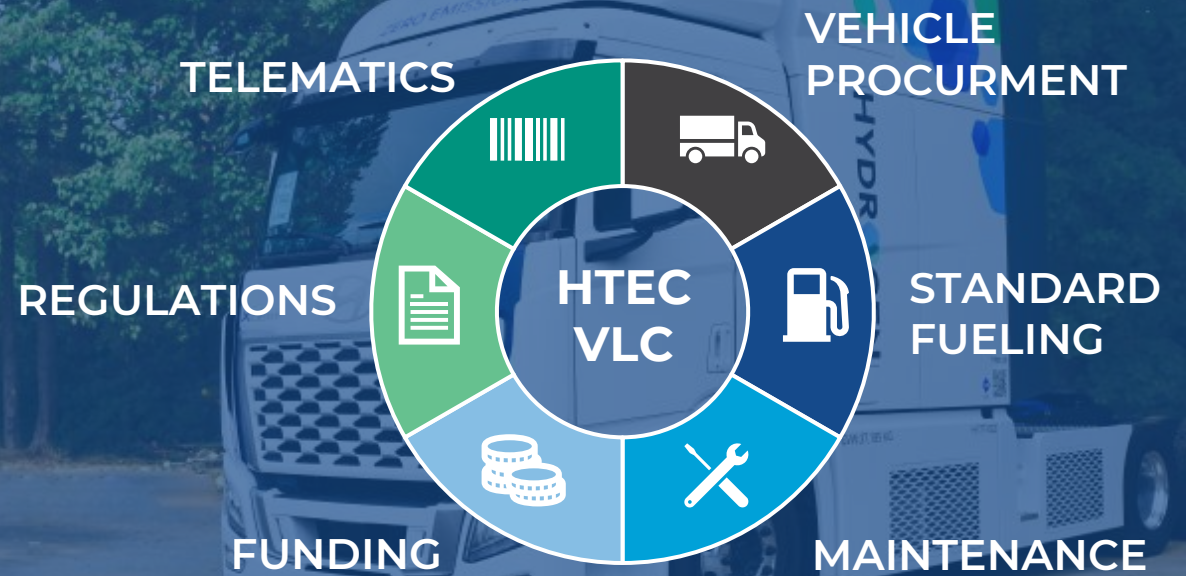
Vehicle Leasing Corp. (VLC)

Supporting your Fleet's Transition to Zero-Emissions

VLC leases heavy-duty FCETs to fleet operators comprehensive, bundled, no-CAPEX service package includes:

- Best-in-class, zero-emissions, heavy-duty FCETs
- Access to HTEC's interprovincial network of hydrogen refueling stations
- Preventative & corrective maintenance services
- Access to fleet data
- Technology adoption support

www.htec.ca



Fuel Cell Truck Adoption

Fleets Currently Operating FCETs



Loblaws

IHR IRON
HORSE
RENTALS
www.ironhorserentals.ca

HARBOUR LINK
CONTAINER SERVICES INC.
"Strong on Service, Reliability and People"

Project Highlight – Loblaw

Class 8 FCET Demonstration



Lessons Learned

1. Vehicle capabilities are a good match for actual real-world use. No compromises on payload on Loblaw's routes
2. Vehicle's 700km range enables future interconnections along established freight corridors

>25,000

Kilometers Total

>24,000 Kg

**Emission
Reductions Total**

>13,000 Kg

Average Net Load

>550 Km

**Longest Trip
Mileage**

Thank you!

Terry Howe
thowe@htec.ca



NW Seaport Alliance Puget Sound Zero-Emission Truck Collaborative

July 9, 2026

Regulatory and Policy Update

Kyle Murphy, Cascadia Law Group

*California v. United
States,*
No. 3:25-CV-04966
(N.D. Cal. 2025)

- **Background:** In 2025, Congress revoked California's Clean Air Act waiver for the Advanced Clean Truck (ACT) and Omnibus rule using the Congressional Review Act (CRA).
- **Significance:** WA adopted CA's ACT rule in 2024, which required increased ZEV HD truck sales.
- **Status:** WA joined CA in the suit. The US has filed a motion to dismiss.



United States vs. California, No. 2:26-cv-00847 (E.D. Cal. 2026)

- **Background:** Under the Energy Policy and Conservation Act (EPCA) of 1975, the federal government sets MPG standards. The administration has argued that the EPCA preempts state ZEV programs.
- **Significance:** A ruling in favor of the United States would prohibit state level ZEV standards for light/medium duty vehicles, possible precedent for HD vehicles.
- **Status:** CA has filed a motion to dismiss.

State Rulemaking – Fallback ZEV Standards

- **Background:** Washington's ZEV standards may be affected by federal litigation.
- **Significance:** Ecology has proposed a rule (WAC 173-423) clarifying that, if a court determines existing ACT and Omnibus standards to be unlawful, Washington reverts to CA's 2010 heavy duty vehicle engine standard for new sales. Adds fleet reporting for 5-10 vehicle fleets based on weight (8,500 lbs).
- **Status:** Comments until August 13, 2026





State Rulemaking – Other



Clean Fuel Standard Rulemaking /
Advance Credits (Applications 7/31)



Climate Commitment Act Linkage
(Comments 7/22)



Overburdened Communities Air Quality
Rule (Draft later this year)



**NW Seaport Alliance Puget Sound
Zero-Emission Truck Collaborative**

Work Planning Exercise 2

Prioritization



- *How would you prioritize potential Collaborative actions shared earlier?*

Join by Web

PollEv.com/idealtruck938

Join by scanning the QR code



Work Planning Next Steps



- Synthesis of today's thinking
- Membership interest and initial convening of small groups
- Report outs at next Collaborative meeting

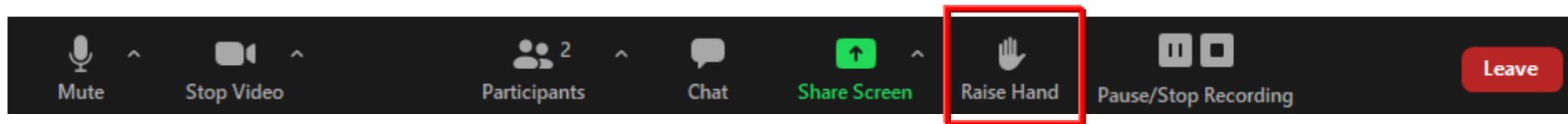


**NW Seaport Alliance Puget Sound
Zero-Emission Truck Collaborative**

Public Comment

Instructions for Public Comment

- Members of the public that are interested in making 2-minute statements are invited to do so
- To the extent possible, please frame remarks as comments rather than questions
- Please use Zoom to raise your hand if you would like to make a statement, and you will be unmuted





**NW Seaport Alliance Puget Sound
Zero-Emission Truck Collaborative**

Wrap Up and Next Steps

Wrap Up and Next Steps

- Meeting agenda, materials, and notes on Collaborative website
- Outreach about small groups
- Next full group meeting Q4 2026 (date TBD)



**NW Seaport Alliance Puget Sound
Zero-Emission Truck Collaborative**

Thank you!