Oregon
Kate Brown, Governor

Department of Transportation
Office of the Director
355 Capitol St NE
Salem, OR 97301

July 15, 2022

To the Joint Office of Energy and Transportation:

Thank you for your leadership and management of the National Electric Vehicle Infrastructure (NEVI) Program and overall transportation electrification efforts.

Along with this letter, I respectfully submit the Oregon Department of Transportation's (ODOTs) NEVI Plan - Oregon National Electric Vehicle Infrastructure Plan - for your review and approval.

Oregon's NEVI Plan has been developed collaboratively by ODOT and the Oregon Department of Energy and informed by feedback from hundreds of stakeholders. The Plan addresses each of the requirements set forth by your office and describes ODOT's guiding principles for developing DC fast charging infrastructure along the state's EV Alternative Fuel Corridors; our deployment strategy; the envisioned contracting mechanisms; key elements of the deployment approach; and ODOT's past, ongoing, and planned public outreach efforts, including how it will engage with diverse stakeholders and ensure a minimum of 40% of the NEVI benefits accrue to disadvantaged communities.

Oregon is "all in" on transportation electrification and is supporting a rapid scale-up of EV charging infrastructure throughout the state. ODOT is committed to investing in charging infrastructure over and above the NEVI program, providing over $100 million total toward EV charging infrastructure over the next several years. Oregon is well-positioned to build out charging infrastructure and target the highest-need locations, addressing "charging deserts" in rural, underserved, and disadvantaged communities. The NEVI funding for public fast-charging stations along Alternative Fuel Corridors is an important next step in meeting identified needs, and ODOT looks forward to working with your office to complete its planning and begin implementation of this program.

ODOT appreciates the on-going guidance in Plan development provided by your office. We look forward to continued collaboration to achieve our vision of creating a network of EV charging stations to increase Oregonians' confidence that EV charging will be as ubiquitous and convenient as fueling with gasoline.

Respectfully,

Kris Strickler
Director

Oregon
Kate Brown, Governor

OREGON DEPARTMENT OF ENERGY

550 Capitol St. NE
Salem, OR 97301
Phone: 503-378-4040
Toll Free: 1-800-221-8035
FAX: 503-373-7806
www.oregon.gov/energy

July 13, 2022

To the Joint Office of Energy and Transportation:

The Oregon Department of Energy is proud to support The Oregon Department of Transportation's National Electric Vehicle Infrastructure Program State Plan. ODOE's mission is to help Oregonians make informed decisions and maintain a resilient and affordable energy system. We advance solutions to shape an equitable clean energy transition, protect the environment and public health, and responsibly balance energy needs and impacts for current and future generations. The transportation sector accounts for about 40 percent of Oregon's harmful greenhouse emissions, so encouraging electric transportation options can help us achieve our mission's aim to protect the environment and public health. ODOT's plan builds on long-standing collaborative work between our agencies to inform electric vehicle charging needs across the state and ensure equitable access to EVs and their many benefits.

Oregon is a leader in EV adoption, supporting access to EV charging for more than a decade. In 2009, ODOE and ODOT partnered on a successful application for Transportation Investment Generating Economic Recovery (TIGER) grants and used the funds to establish the West Coast Electric Highway EV charging stations along Interstate 5. This work, in collaboration with California and Washington, built a charging corridor for EV drivers from Mexico to Canada. This history of partnership and collaboration continues as our two agencies work together on EV program and policy development, in support of Governor Kate Brown's Executive Order 17-21 *Accelerating Zero Emission Vehicle Adoption in Oregon to Reduce Greenhouse Gas Emissions and Address Climate Change* and her direction to ODOT to collaborate with ODOE on the development of the *Transportation Electrification Infrastructure Needs Analysis* completed in 2021.

Today the need for transportation electrification cannot be overstated. Oregon has witnessed first-hand the devastating effects of climate change, from damaging wildfires, lingering drought conditions, and deadly heat waves. With the state's electricity providers moving toward 100 percent clean energy goals, now is the time to invest in bolstering EV adoption. ODOT's plan is a major step to supporting this clean transportation system future, and ODOE is pleased to support it.

Sincerely,

Janine Benner, Director
Oregon Department of Energy

Oregon Department of Transportation

Oregon National Electric Vehicle Infrastructure Plan

July 2022

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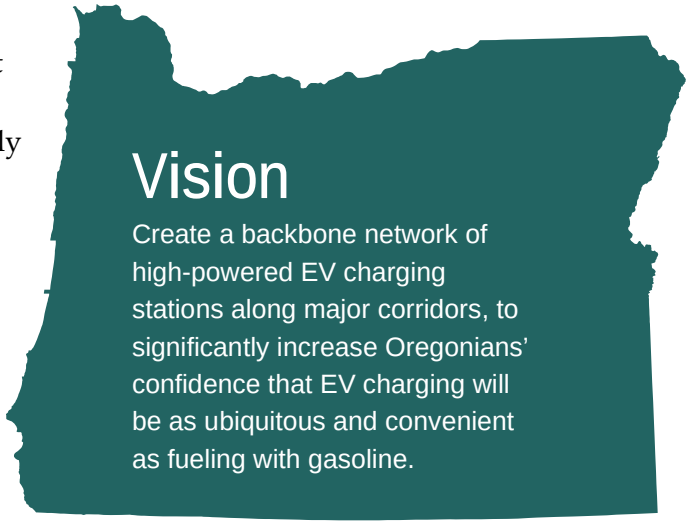
Executive Summary

The Oregon Department of Transportation (ODOT) is pleased to submit this State EV Infrastructure Deployment Plan (State Plan or Plan) to the Joint Office of Energy and Transportation (JOET). This Plan, developed collaboratively by ODOT and the Oregon Department of Energy (ODOE), addresses each of the requirements set forth by JOET to secure Oregon's portion of the funding allocated to states through the National EV Infrastructure (NEVI) program, which was created under the Infrastructure Investment and Jobs Act (IIJA) in November 2021.



Oregon is all in on transportation electrification and is supporting a rapid scale-up of EV charging infrastructure in the state. ODOT is committed to charging infrastructure over and above the NEVI funds-plus-match, providing over $100 million total toward EV charging infrastructure. Oregon is well-positioned to build out charging infrastructure and target the highest-need locations because of its recent Transportation Electrification Infrastructure Needs Analysis (TEINA) report, submitted to Governor Kate Brown in July 2021. The NEVI funding for public fast-charging stations along alternative fuel corridors is an important next step to meeting identified needs, and ODOT looks forward to working with JOET to complete its planning and begin implementation of this program.

Plan Summary

ODOT's vision for the NEVI program is to 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.

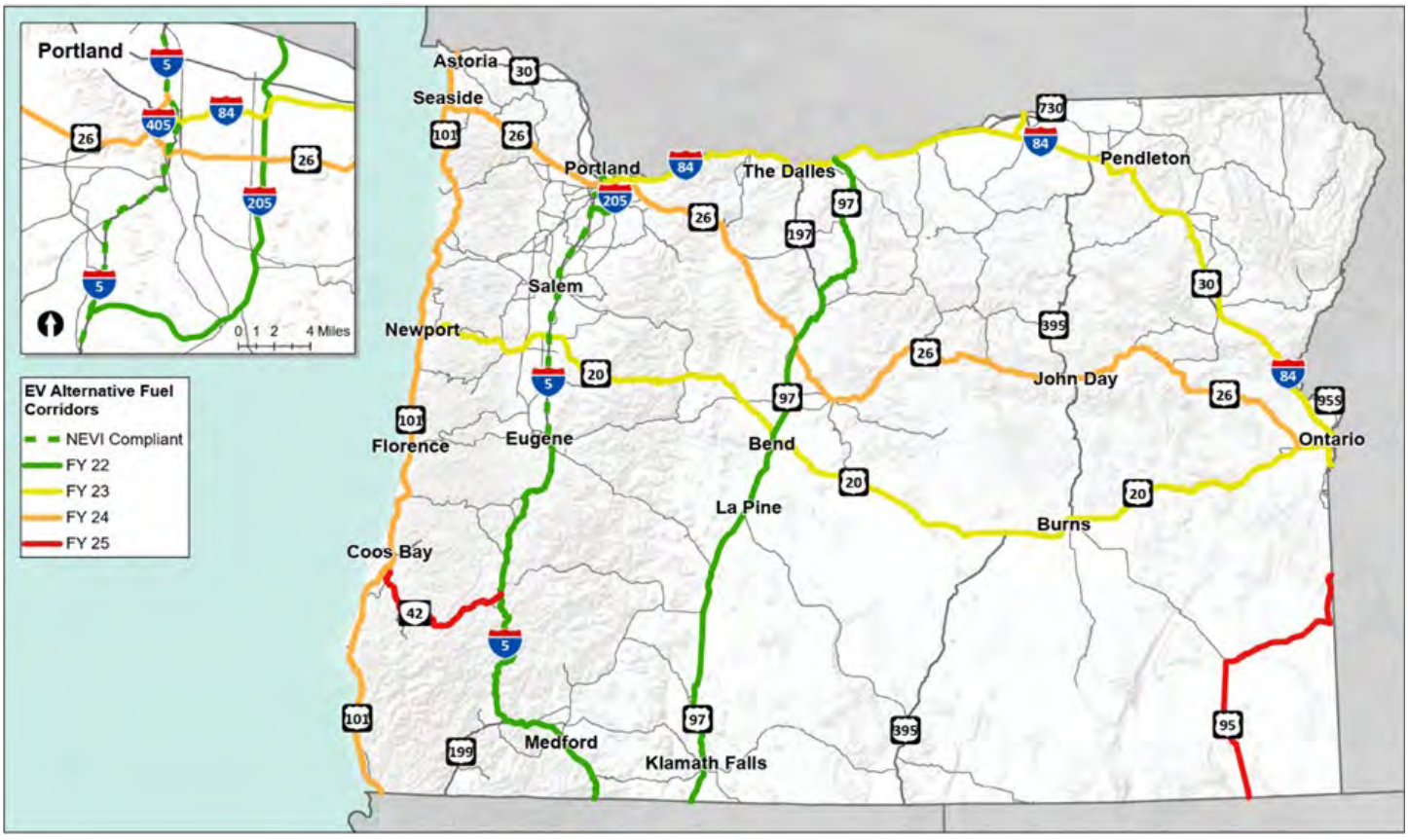
This Plan lays out how ODOT will use NEVI funding to achieve the above vision. It addresses each of the requirements set forth by JOET and describes ODOT's guiding principles; deployment strategy; the envisioned contracting mechanisms; key elements of the deployment approach; and ODOT's past, ongoing, and planned public outreach efforts, including how it will engage with diverse stakeholders and ensure a minimum of 40% of the NEVI benefits accrue to disadvantaged communities.

Guiding Principles

ODOT's charging infrastructure deployment strategy is based on several guiding principles, which align with the goals articulated in both TEINA and the NEVI program. With NEVI funding, ODOT aims to:

Achieve **geographic balance** between urban and rural charging needs to develop infrastructure across the entire state.	Provide **charging access** to all Oregonians, including disadvantaged community (DAC) populations.	Focus on **high-traffic corridors** to the extent practicable.	**Leverage existing and planned EV charging infrastructure.**	Emphasize **connectivity with neighboring states** to establish an interstate charging network.

Figure 1: Planned Implementation Year for Electric Vehicle Alternative Fuel Corridors



Overarching Strategy

With FY22 funding ODOT aims to build out I-5, US 97, and I-205. I-5 is one of the most critical, high-traffic routes in the state, and US 97 is a key route through central Oregon that carries high traffic volumes and serves both urban and rural areas. I-205 serves high traffic volumes in the Portland metropolitan area and travels through or adjacent to numerous disadvantaged communities (DACs).

FY23 funding will focus on I-84, I-82, and US 20, all of which are high volume routes that provide for east-west travel. I-84 provides service to numerous DACs and accommodates a high proportion of long-distance trips. I-82 connects directly with I-84 and enhances Oregon's connectivity with Washington. US 20 is a route of strategic statewide importance and a freight corridor that will provide additional rural EV charging coverage across the central part of Oregon.

With FY24 funding Oregon anticipates build out of US 26, US 101, and I-405. Build out of US 26 and US 101 will represent completion of the remaining seven designated Alternative Fuel Corridors (AFCs) approved during Rounds 1 – 5. US 26 will add additional coverage to Central Oregon, and completion of US 101 will bolster the existing DC Fast Charging (DCFC) infrastructure along Oregon's coast. Completion of I-405 will support the high traffic volumes and DAC populations it serves in the Portland metropolitan area.

ODOT envisions using FY25 and FY26 funding for completion of US 95 and OR 42, both of which are approved EV AFCs from Round 6. More broadly, ODOT intends to reserve funding for these later years to either develop additional EV AFCs that have yet to be proposed, and/or to build redundancy in charging stations along the other AFCs to strengthen the overall network and accommodate increasing EV traffic in the coming years.

Over the course of the five-year NEVI program, ODOT anticipates using the $65 million in total funding (Federal funds and 20% non-Federal match) to develop and/or upgrade approximately 65 DCFC stations across Oregon's roadways, totaling a minimum of 260 DCFC ports (doubling Oregon's fast charging ports).

Envisioned Contracting Mechanisms

ODOT has broad authority to use the Oregon Innovative Partnerships Program (OIPP) to develop public-private partnerships (P3s) for a full range of transportation projects. OIPP procurements offer many benefits over traditional contracting, including the ability to select projects based on best value rather than lowest cost, the ability to customize Requests for Proposals (RFPs) to meet the needs of a particular project, and maximum flexibility to change an agreement to accommodate unanticipated events. Therefore, ODOT plans to enter into P3s with one or more EV Service Providers (EVSPs) to both develop and operate fast charging stations funded through NEVI.

Figure 2: Process for Developing DCFC Along Alternative Fuel Corridors

Deployment Approach

ODOT's deployment strategy is expected to evolve and adapt throughout the five-year NEVI program in response to experience gained and lessons learned during the program's early years. ODOT's deployment approach will be consistently grounded in the following five overarching objectives:

Partner with private sector. ODOT will not own, install, maintain, or operate any of the EV charging stations deployed with NEVI funds while leveraging private sector expertise.

Target reliability. Public confidence in the reliability of EV charging infrastructure is one of the most significant factors in accelerating EV adoption. NEVI requires achievement of 97% uptime.

Develop/design competitive corridor RFPs. ODOT intends to issue corridor-specific competitive RFPs in concert with the strategy described above.

Expand coverage. ODOT is committed to prioritizing equity while transitioning the state's transportation system to be powered by electricity. Through NEVI and complementary state programs, access to EV charging will expand across socioeconomic and geographic areas throughout the state, potentially adding new EV AFCs. ODOT will also work with the private sector to intentionally develop sites that serve both highway traffic and local EV charging needs, maximizing utilization and economic development opportunities, where practical.

Build new *and* upgrade existing. ODOT will maximize the benefits of the five-year NEVI program funding by building new charging infrastructure where needed and upgrading existing infrastructure facilities to meet NEVI standards where practical.

Public Outreach

Stakeholder engagement was a key part of the earlier TEINA study process and included a diverse 17-member Advisory Group; four public Advisory Group meetings; 12 Stakeholder listening sessions; and a project-dedicated web page. ODOT has used this extensive input as the starting point for an expanded and more comprehensive stakeholder engagement effort that is already supporting the five-year NEVI program. Combined with lessons learned from FY22 deployment activities, this public process will help ODOT to refine future (annual) updates of this plan through the duration of the NEVI program.

Added elements of the expanded stakeholder engagement process for the NEVI program include:

- Introductory and follow-up webinars providing both background material and updates.
- A NEVI-specific web page that includes detailed responses to frequently asked questions in previous public interactions.
- Public opinions and insights obtained from four surveys conducted via the web page, supplemented by an interactive map displaying the public's selected charging locations.
- Stakeholder engagement sessions with five targeted groups – EV drivers; EV charging companies; cities and counties; utilities; and environmental justice and advocacy groups.
- Planned Regional Workshops in advance of building out NEVI-funded fast chargers along the electric AFCs. These workshops will include discussion with local communities to explore priority benefits and appropriate metrics to ensure Justice40 goals are met or exceeded.

Stakeholder input has already been incorporated into the State Plan; this Plan is a living document, and new input will continually be integrated as outreach to new groups takes place and additional perspective is heard.

Figure 3: Stakeholder Outreach Opportunities

Key Activities

- Regional Workshops in communities
  - Engage with communities prior to each year's Corridor build out
  - First year build out: communities along I-5, US 97, and I-205
  - Listen to learn EV community goals, prioritize desired benefits
  - Work with EV charging providers to match goals with opportunities along corridors
- Webinars
- Guest speaking engagements
- Targeted Information Sessions
  - Specific outreach to voices who haven't yet been heard
- Reporting back – What we hear and how it impacts activities

The NEVI funding for public DCFC stations is an important next step in helping Oregon achieve its ambitious zero emission vehicle adoption goals, providing funding to develop a critical backbone of DCFC stations along key highway corridors. ODOT, and its partner agency the ODOE, look forward to working with JOET as ODOT completes its planning and begins implementation of the NEVI program.

Introduction

The Bipartisan Infrastructure Law was established on November 15, 2021. Among other programs, this legislation – also known as the Infrastructure Investment and Jobs Act (IIJA) – established a $5 billion National Electric Vehicle Infrastructure (NEVI) Formula Program, an initial step towards developing a nationwide network of 500,000 electric vehicle (EV) chargers by 2030.

To secure Oregon's portion of the NEVI program funding, the Oregon Department of Transportation (ODOT) respectfully submits this State EV Infrastructure Deployment Plan (State Plan or Plan) to the Joint Office of Energy and Transportation (JOET). The Plan articulates ODOT's guiding principles, overarching strategy, envisioned contracting mechanisms, and specific deployment approach for DC fast charging (DCFC) stations funded through the NEVI program.

Oregon is committed to transitioning its transportation system to be powered by electricity, and ODOT is supporting a rapid scale-up of EV charging infrastructure in the state. Drivers need equitable, convenient, and reliable access to public EV chargers in order to take advantage of electric vehicles, and more public charging will help give Oregonians the confidence that an EV will get them where they need to go just as reliably as a vehicle powered by gasoline or diesel. EVs can also offer significant cost reductions for vehicle operation - fueling an EV can cost 80% less than a similar gasoline vehicle. This can help reduce the transportation energy burden on low-income Oregonians.

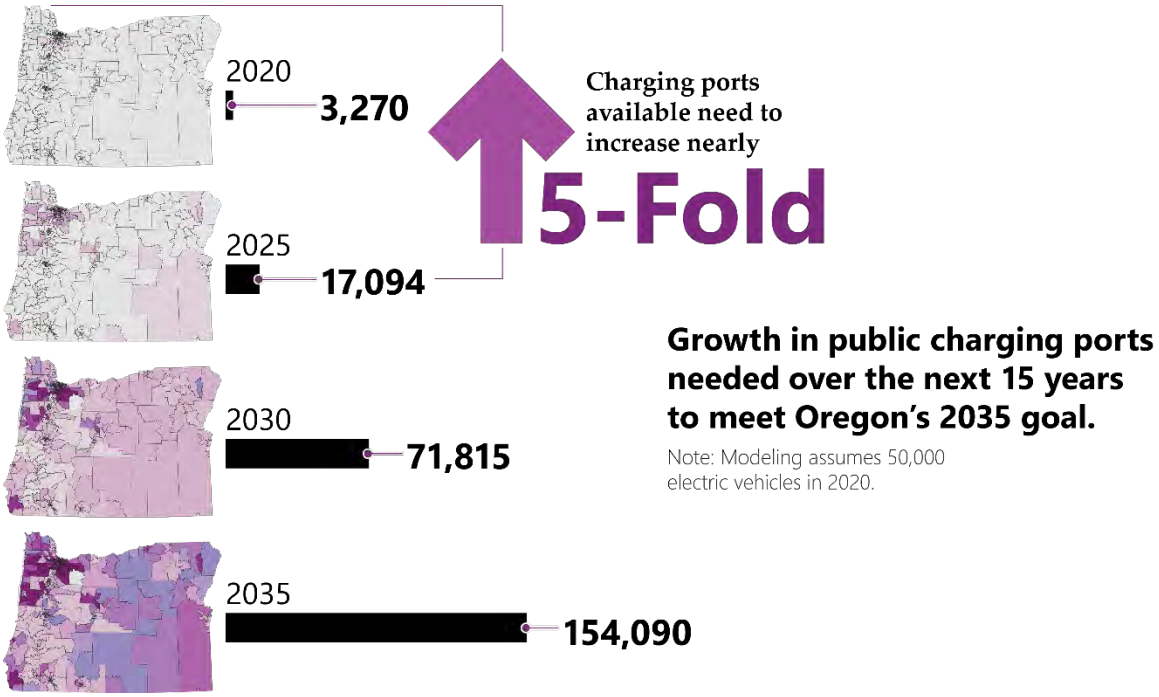
Transportation electrification affords many benefits, including reductions in tailpipe emissions and the associated public health benefits, decreased greenhouse gas emissions (GHGs) and the related climate benefits – in Oregon, transportation is responsible for about 40% of total GHGs – and the opportunity to take advantage of reliable, domestically produced electricity rather than relying on petroleum-based fuels.

Oregon is all in on transportation electrification and ODOT is committing additional dollars to charging infrastructure over and above the NEVI funds-plus-match, providing over $100 million total toward EV charging infrastructure. ODOT's funding plans will better support a transition to EVs, by focusing infrastructure along highways, on major roads, and within communities. The NEVI funding constitutes approximately two-thirds of this commitment at approximately $65 million, including local match. The remaining third—over $35 million—will be largely used to close EV infrastructure gaps beyond the areas supported by NEVI funding. Specifically, ODOT plans to support additional charging sites in rural and urban areas, underserved communities, and at apartment complexes, allowing more Oregonians to charge their vehicles where they live, work, and play.

Transportation Electrification Infrastructure Needs Analysis

Oregon is well-positioned for this funding and will be able to target the highest-need locations based on a recent ODOT study that assessed statewide charging needs to meet aggressive state Zero Emission Vehicle (ZEV) adoption goals. In 2020 - 2021, ODOT conducted a Transportation Electrification Infrastructure Needs Analysis (TEINA), aiming to identify the required EV charging needs for different vehicle types and use cases in order to meet the state's ZEV goals. Throughout the eight-month study, ODOT continuously engaged with stakeholders and the general public. The study – which explored these charging needs for nine use cases over 15 years – found that, relative to 2020 levels, Oregon needs a 5-fold increase in public charging ports by 2025, and a more than 40-fold increase by 2035.

Figure 4: Anticipated Growth in Public EV Charging Needs in Oregon, 2020 – 2035



The NEVI funding for public DCFC stations is an important next step in meeting some of these needs, and ODOT and the Oregon Department of Energy look forward to working with the JOET as the planning and implementation of this program is completed.

State Plan Milestones for EV Infrastructure Deployment, Development and Adoption

Oregon's State Plan was developed primarily by ODOT, in close collaboration with the Oregon Department of Energy (ODOE). Final State Plan approval and adoption will be authorized by the ODOT Director.

The following key milestones for FY22 could be replicated, or amended, to include FY23 funding:

- August 1st: Oregon's NEVI State Plan due to the Federal Highway Administration (FHWA) and JOET
- September 30th: Anticipated date of FHWA approvals of State Plans
- Late Fall 2022: ODOT issuance of initial public-private partnership (P3) Requests for Proposals (RFP)
- Winter 2023: ODOT selection of first year(s) contractor(s)
- Spring 2023: Initiation of first year(s) charging station build out
- Ongoing: Regional workshops along Alternative Fuel Corridors prior to build out.

Longer term anticipated plan timing:

- Review of previous years' findings (Program Evaluation)
- Annual issuance of future years' P3 RFPs (Fall of each year)
- Annual initiation of future years' charging build out (Winter to Spring of each year)
- Annual *Community Engagement Outcomes* report (as per NEVI proposed minimum standards guidance, June 9th, 2022)
- Annual updates to the Oregon EV State Plan

State Agency Coordination

In November 2017, Governor Kate Brown issued Executive Order 17-21 (E.O. 17-21). This order established a statewide goal for adoption of zero-emission vehicles (ZEVs) by 2020, coordinated transportation electrification efforts across state agencies, and identified barriers to ZEV adoption through stakeholder engagement. To implement E.O. 17-21, the Zero Emission Vehicle Interagency Working Group (ZEVIWG) was convened and includes ODOT, ODOE, the Oregon Department of Environmental Quality (DEQ), the Oregon Public Utility Commission (OPUC) and the Department of Administrative Services (DAS). Other state agencies, such as the Oregon Health Authority and Oregon Department of Education, join in ZEVIWG efforts to support specific goals. These agencies have worked closely for years and continue to do so to coordinate, leverage, and implement actions to electrify the transportation system. Specifically:

- ODOT plays a lead convening role to ensure that the state's agencies collaborate on transportation electrification efforts and is primarily responsible for public investments in charging infrastructure.

- ODOE produces key reports, studies, and tools on electrification and shares information with the public as part of their specialization as data and analysis experts for both EVs and electricity.

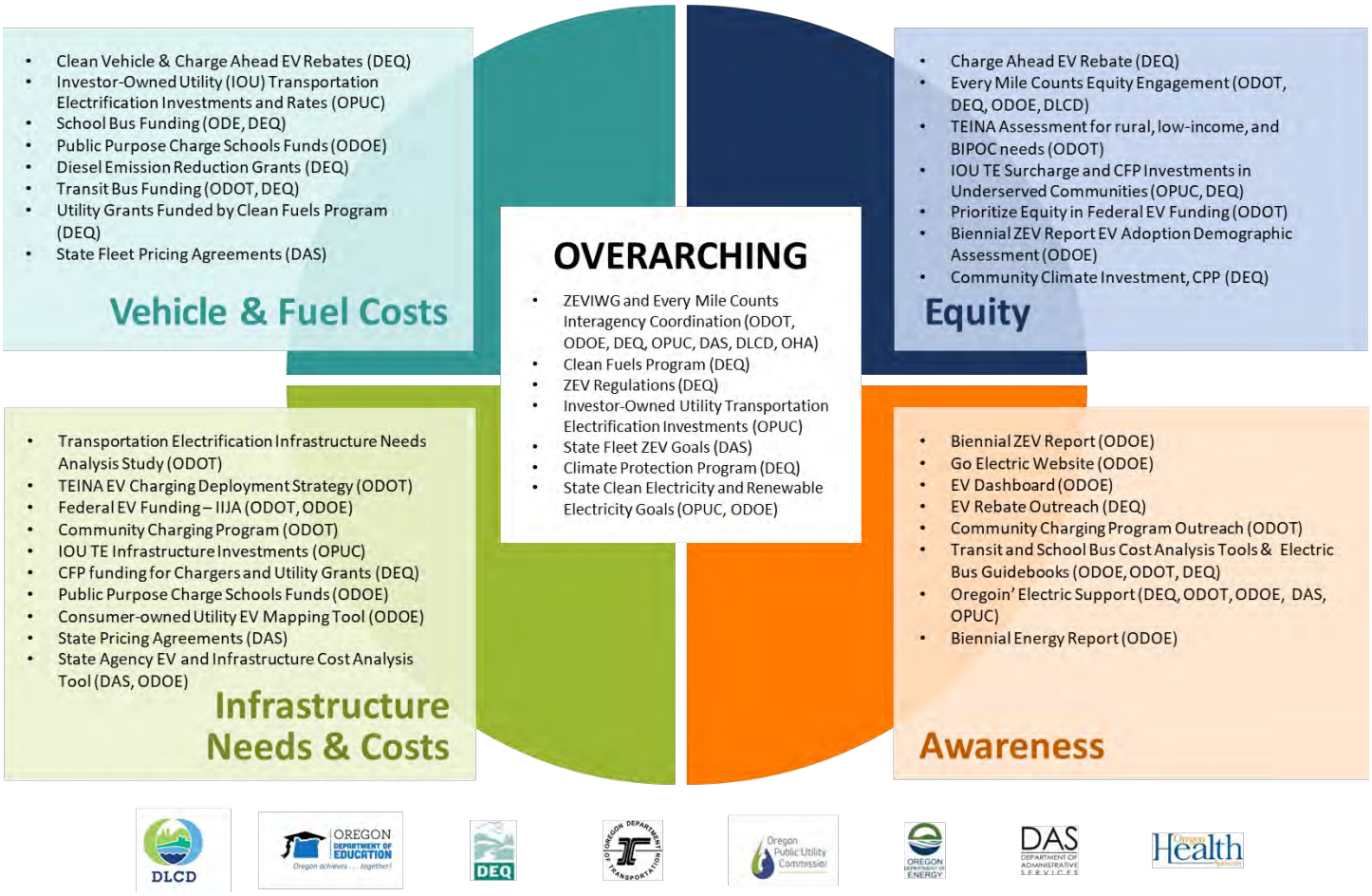
- OPUC serves as the regulator and influencer of the state's investor-owned electric utilities, overseeing the development of their transportation electrification plans through its deep technical expertise around energy and public utility service provision.

- DEQ provides the vast majority of the regulations and policies driving Oregon's transition to cleaner vehicles and fuels. These include ZEV mandates for light, medium- and heavy-duty vehicles and ZEV purchase incentives and outreach programs; the Clean Fuels Program (CFP) which is focused on reducing the carbon intensity of Oregon's transportation fuels and provides incentives for utility, fleet, and infrastructure investments; several grant and rebate programs that can fund EVs and infrastructure; and the Climate Protection Program which sets a declining cap of GHG emissions.

- DAS provides guidance and undertakes vehicle procurement, fuel purchase, and parking development for much of the Oregon state agency fleets. The agency enables the state to lead by example in transportation electrification and serves as a critical enabler of ZEV adoption for state agencies and employees.

In addition to the ZEVIWG, collaboration among state agencies also takes place through the Every Mile Counts multi-agency partnership to decarbonize the transportation sector, and other overarching efforts (Figure 5). Specifically, agencies work individually and collectively to address the primary barriers to transportation electrification: infrastructure needs and costs, vehicle and fuel costs, and awareness and equity.

Figure 5: Interagency Actions Addressing Barriers to Zero Emission Vehicle Adoption



As the agency primarily responsible for public ZEV charging infrastructure, ODOT led efforts to develop the NEVI State Plan, relying on input and guidance from its ZEVIWG partners. During monthly ZEVIWG meetings, ODOT regularly updated partner agencies on State Plan development and progress moderating discussions around how to leverage other agency efforts – such as DEQ's CFP, OPUC's oversight of utility transportation electrification programs, and ODOE's energy resiliency efforts – to develop a more comprehensive NEVI strategy. This collaboration has resulted in complementary initiatives being pursued by partner agencies, including development of supportive infrastructure provisions under DEQ's Clean Fuels Program and the potential to leverage ODOE funding. In addition, ZEVIWG partner agencies participated in NEVI public webinars and targeted stakeholder engagement information/listening sessions. Throughout the development of the NEVI State Plan, ODOE served as a key advisor, participated in weekly NEVI planning meetings, and provided critical input in the review of the draft State Plan.

ODOT will continue to rely on the ZEVIWG as the primary forum for cross-agency collaboration and guidance throughout the NEVI program. ODOT will also reach out to engage with additional state agencies, as needed. Specifically, ODOT will work with the Oregon Bureau of Labor and Industries and Building Codes Division on workforce development and standards, the Oregon Department of Agriculture, Weights and Measures division on several measurement and other standards, as well as Travel Oregon, Business Oregon, the Travel Information Council (on signage) and other agencies as we engage with stakeholders and communities to build out infrastructure across the state.

Public Outreach

Oregon's public outreach to identify the state's EV charging infrastructure needs began 2 years ago, when ODOT initiated the Transportation Electrification Infrastructure Needs Analysis (TEINA). In 2020, Governor Brown directed ODOT to study Oregon's need for greater EV charging infrastructure to meet state EV goals, reduce GHGs and speed the state's transition to a wide array of electric transportation modes.

Stakeholder engagement was a key part of the TEINA study process and included a diverse 17-member Advisory Group; four public Advisory Group meetings; 12 Stakeholder listening sessions; and a web page. Throughout this study, ODOT relied on the ODOE as a policy advisor. The resulting study identified EV charging gaps in rural, urban, and underserved areas. TEINA highlighted the need to focus public investment on Black, indigenous, and people of color (BIPOC) as well as underserved, rural, and disadvantaged communities. TEINA also identified a set of goals and recommended strategies.[1]

Figure 6: Key Themes from TEINA Outreach

Since then, ODOT has expanded on its previous outreach efforts to inform the NEVI State Plan and its implementation over the next five years to accomplish the following key objectives:

- Engage a diverse range of stakeholders recognizing that the distribution of EV charging infrastructure must target locations and benefits to rural areas, underserved and overburdened communities, and disadvantaged communities, including relevant suppliers and contractors.
- Establish a menu of engagement opportunities, with a focus on lowering the barriers to participation for disadvantaged communities, so all stakeholders can provide meaningful feedback on NEVI plans.
- Listen and respond promptly to stakeholders so they understand how their participation has influenced decisions.
- Monitor the effectiveness of the stakeholder engagement activities and revise the process as necessary.

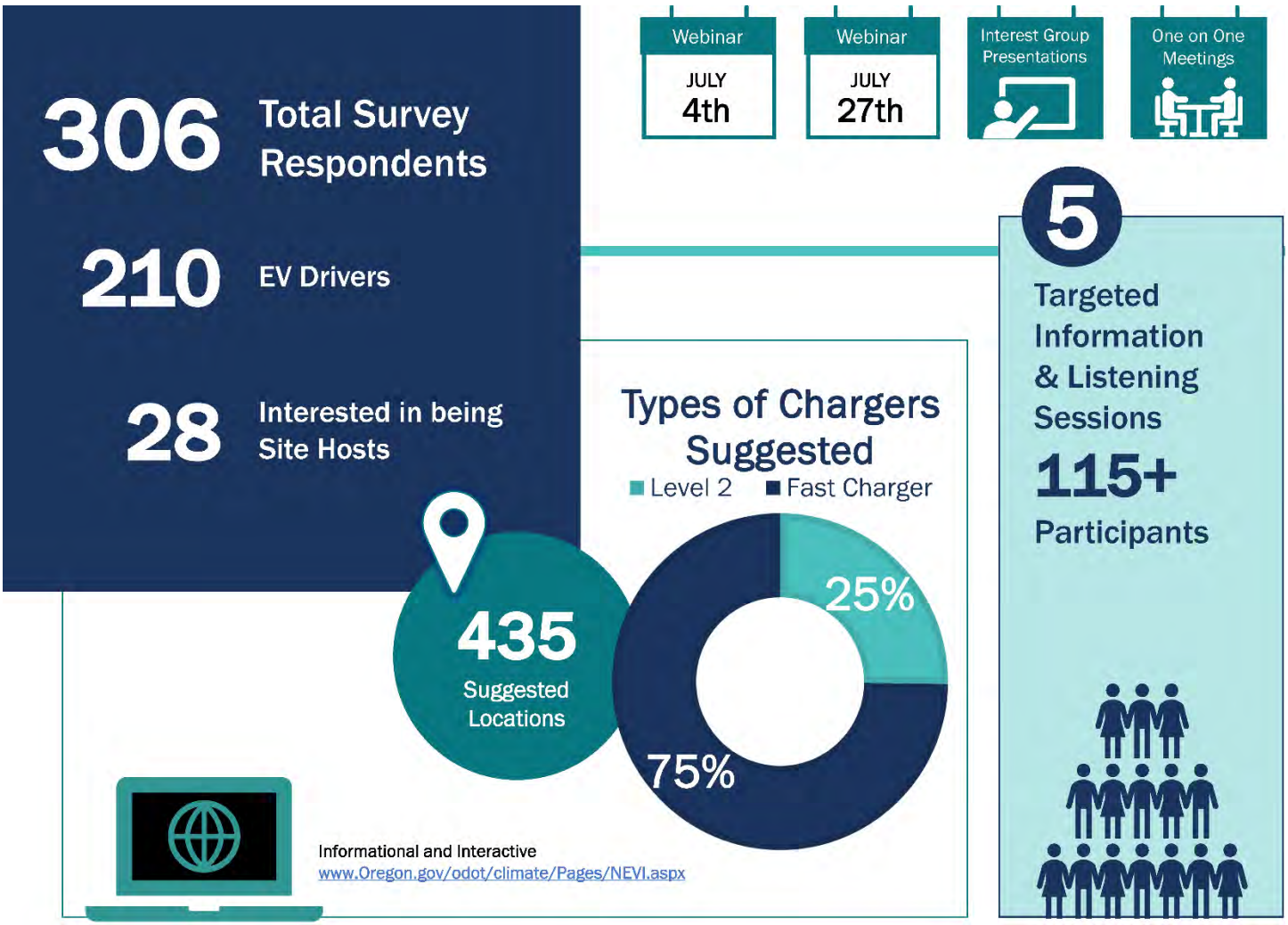
NEVI State Plan Stakeholder Engagement

To directly inform the NEVI State Plan, ODOT hosted a public, introductory webinar on April 4th, 2022, with over 250 participants. In addition, from February to June 2022, ODOT has engaged in dozens of conversations with a diverse range of companies, organizations, cities, utilities, and interest groups, and has presented to

[1] The TEINA study and supporting materials can be found on ODOT's website here: https://www.oregon.gov/odot/Programs/Pages/TEINA.aspx.

several stakeholder groups, such as the League of Oregon Cities and the Emerald Valley EV Association. In June, ODOT conducted five 90-minute information/listening sessions targeted to EV drivers; cities and counties; utilities; EV service providers (EVSPs); and environmental, environmental justice, other equity and EV advocates. Each information/listening session had 25 to 35 participants. ODOT also established a NEVI web page that includes detailed FAQ responses to commonly asked questions raised during outreach efforts, background material, and opportunities for the public to share opinions and insights via four surveys (EV Drivers; Non-EV Drivers; EV Charging Site Hosts; Interested in becoming an EV Site Host). The web page also features interactive maps that allow the public to identify their preferred locations for EV charging stations. ODOT has also engaged extensively with numerous disciplines within its own agency and partner agencies. A second public webinar, with over 150 participants, was held on June 27th, 2022 to present an overview of the Draft State Plan and provide an opportunity for feedback on key plan concepts.

Figure 7: NEVI State Plan Outreach to Date



What We Have Heard

Conversations with state and local agencies, private sector companies, EV driver representatives, transportation providers, utility and power companies, labor organizations, equity focused and environmental

advocacy groups, community-based organizations, and the public have helped shaped the NEVI State Plan. Some of the key themes shared by different stakeholders are presented in the graphic below.

Figure 8: Key Themes from NEVI State Plan Outreach

Based on feedback, ODOT will be flexible toward its aspirational goal to include one 350 kW charger in the four required at NEVI charging stations; ODOT will continue to seek one higher-powered charger (above 150 kW, for one of the four chargers) but not specifically require 350 kW. ODOT will also focus outreach efforts to identify EV charging companies with staying power and experience and will work with selected charging companies to consider geography and climate (as well as other key community interests) when finalizing station siting. ODOT recognizes that more cities and counties wish to benefit from NEVI charging stations and is taking a measured approach to adding EV Alternative Fuel Corridors (AFCs) (to reflect costs and state needs). ODOT will factor key concerns about workforce development and affordable pricing at DCFC stations will be factored into contracting provisions. ODOT and selected EV charging companies will work with utilities along each corridor to enable advanced planning for needed upgrades. By publicizing which routes ODOT aims to develop each year, utilities along each corridor will be better able to anticipate potential needs and prepare for the addition of NEVI charging stations.

What's Next

Over the years, ODOT will continue to engage with stakeholders along each corridor through an inclusive process that lowers participation barriers.

A detailed stakeholder engagement strategy can be found in Appendix A: Stakeholder Engagement Plan. It outlines a variety of virtual and in-person engagement activities in communities along the corridors with a focus of engaging those whose voices have been less prevalent to date, including tribes and Justice40 DACs. Key activities include fact sheets (translated into appropriate languages based on target audience and area demographics), regional workshops, webinars, listening sessions, and guest speaking engagements. To maximize participation, ODOT will work with trusted partners including ODOT regional offices, Metropolitan Planning Organizations (MPOs), social service and non-profit leaders, tribal representatives and community liaisons/interpreters. Additionally, the NEVI web page will continue to be updated with FAQs in response to commonly asked questions, background material, and opportunities for the public to share opinions and insights via surveys and interactive maps. Meeting summaries and documentation regarding how feedback has been incorporated into the decision-making process will be completed in a timely manner and posted on the web page.

Through these planned activities, including Regional Workshops, ODOT will work with DACs to identify which benefits of the NEVI program are most important to them. ODOT will then collaboratively develop a Justice40 framework to provide these benefits, and measure progress, through the NEVI program as well as

other ODOT equity-focused initiatives. The feedback received will inform future requests for proposals and will share information with utility companies and the selected EV charging companies who will install, operate, and maintain the EV infrastructure so they can be better partners in achieving Justice40 goals. ODOT's collective outreach efforts will continue to inform the equitable and fair distribution of EV charging infrastructure so all Oregonians benefit from transportation electrification.

Plan Vision and Goals

ODOT's vision for the NEVI program funding is to create a backbone network of high-powered EV charging stations along major corridors and significantly increase Oregonians' confidence that EV charging will be as ubiquitous and convenient as fueling with gasoline.

Oregon's Five-year NEVI Action Plan and Goals

In the first three years: Fully build out NEVI-compliant EV charging stations on the seven electric Alternative Fuel Corridors (AFCs) approved by FHWA during Rounds 1 - 5, to achieve a backbone network along all interstates and major US highways in Oregon (connecting Oregon with other states via their EV AFCs).

In the following 2 years:

- Fully build out NEVI-compliant EV charging stations on additional electric AFCs (approved in Round 6, 2022 and beyond)
- Pursue additional investments (as needs arise) to:
  - Increase coverage (more stations in between 50-mile intervals).
  - Increase redundancy at stations (build out future proof options).
  - Upgrade current stations to be NEVI-compliant.
  - Focus on freight, inter-modal, and e-mobility hubs.

Throughout the program: Ensure the EV charging network is reliable, user-friendly, safe, consistent, affordable, and accessible.

Throughout the program: Center equity by meeting or exceeding the Justice40 requirements and promoting workforce development.

Oregon's Overall EV Infrastructure Goals

ODOT articulated six EV infrastructure development goals as part of the June 2021 TEINA. These goals will help to guide ODOT's planning and implementation of the NEVI program, contributing to consistent, high-quality charging opportunities and experiences for Oregonian drivers.

Figure 9: ODOT's EV Infrastructure Goals

NEVI Federal funding aligns with TEINA goals to presents a unique opportunity that furthers Oregon's efforts to develop widespread, equitable, convenient, affordable, and reliable EV charging options for Oregonians.

NEVI funding will support Oregon's development of charging infrastructure along key travel corridors, which serve both long-distance and local traffic. Additionally, the NEVI station technical requirements and specifications, reliability, and data collection requirements build on Oregon's existing West Coast Electric Highway (WCEH) network requirements, through which ODOT has been expanding DCFC coverage and access for years, as part of an interconnected DCFC network with Washington and California.

Guiding Principles for NEVI Funding

Focus on Light-duty Charging
ODOT will prioritize building a statewide EV charging network for light-duty vehicles with NEVI funds in accordance with Federal guidance and to support the US goal of reaching 500,000 public charging stations along national highways.

Center Equity
ODOT will work with community members, EV charging company partners, and other stakeholders to ensure program delivery fulfills the spirit and intent of the Justice40 Initiative. This will require a minimum 40% of all program benefits to accrue to disadvantaged communities.

Future-proof Sites
Oregon aims to exceed Federal standards by designing stations with three fast chargers of a minimum 150 kW power level, while encouraging that at least one charger provides a higher power level *above* 150 kW (and up to 350 kW). Goals include future-proofing each station for two additional higher-powered chargers (greater than 150 kW and up to 350 kW). Oregon's design will meet or exceed Federal standards, with the goal of better enabling both today and tomorrow's EVs to charge quickly and better accommodate powering up medium-duty vehicles such as large pick-up trucks and delivery vans. In addition, ODOT intends to include 110-volt outlets where feasible, to accommodate electric micro-mobility devices such as e-bikes and e-scooters.

Partner with the Private Sector
ODOT will work through public-private partnerships to engage private sector companies to install, upgrade, operate, and maintain charging stations. ODOT will manage the distribution of funds and the project selection, assuring that the infrastructure is appropriately built to meet (or exceed) all required NEVI standards.

Upgrade Existing Stations
ODOT aims to leverage the significant investments Oregon has already made in fast charging stations by creating grant programs to upgrade existing stations on select routes over time. Only a handful of Oregon's existing charging stations meet NEVI standards.

Target Reliability
ODOT will focus on funding partners with a proven track record for building, operating, and maintaining charging stations. These partners will have high levels of reliability and staying power in the market. ODOT will ensure that private sector partners can collaborate to engage with communities and achieve Justice40 goals.

Expand Coverage
ODOT will build out the seven EV AFCs designated by FHWA in Rounds 1 - 5, to create a backbone network in Oregon and will expand to additional routes (approved in Round 6) and other areas to enhance geographic coverage and connectivity. With NEVI funding as a foundation, EV charging can make substantial progress toward the goal of being as ubiquitous and as convenient as fueling with gasoline along ODOT's EV AFCs.

Contracting

Contracting Overview

ODOT's contracting approach is influenced by its experience successfully developing the West Coast Electric Highway (WCEH) network of DCFC stations across several of Oregon's highways. ODOT will rely on this experience – including lessons learned and necessary improvements – as it replicates many elements of that successful and innovative public-private partnership.

ODOT is exploring options to encourage selective upgrades, where appropriate along with both urban and rural deployment of new NEVI charging stations, including a build out of stations in DACs. Given the critical need to provide *reliable* DCFCs, ODOT will also require that contracted EVSPs' operations and maintenance plans focus explicitly on maintaining uptime and ensuring the resiliency of NEVI-funded stations, through required service level agreements (SLAs) and/or other mechanisms. ODOT will evaluate the effectiveness of early year contracting strategies as it moves into the later years of the program and will change the contracting approach to improve outcomes if necessary.

ODOT's contracting approach will incentivize and encourage deployment of EVSE in areas less likely to receive private market attention in the absence of public funding, such as rural and/or underserved communities. Additionally, ODOT will work with contracted EVSPs to encourage station development at sites that can serve highway traffic while also providing needed charging capacity for local EV drivers, such as at neighborhood commercial centers within 1 mile of the highway exit, where appropriate. This approach can meet the NEVI program's minimum standards while providing economic development opportunities for local businesses. It also promotes personal safety by locating EV chargers in higher-trafficked, better lit areas.

Oregon has a toolkit of innovative incentives to create an attractive environment for EV charging companies to maximize the NEVI funding and develop a robust EV charging network that meets the needs of Oregon's drivers. Examples of innovative incentives and approaches could include:

- The Oregon Department of Environmental Quality (DEQ) manages the state's CFP, which incentivizes EVSPs to provide transportation fuel that is lower in carbon intensity than the program's annual targets. DEQ is proposing an advance crediting option for charging infrastructure investments made using NEVI funds, effectively serving as a form of financing for station developers. This could be especially useful in rural areas, where lower initial utilization is anticipated, alleviating some private sector concern about longer payback periods.

- ODOT is also having similar discussions with other state agencies regarding developing DCFC stations with onsite solar and storage to increase resiliency. For example, the CFP mentioned above provides additional incentives for EV charging using renewable energy. Other sources of Federal funding via the IIJA or Federal competitive grants may offer additional opportunities to leverage NEVI funding to incorporate solar and other resiliency options. ODOT will continue to collaborate with its partner agencies to ensure the best use of NEVI funding.

- State utility programs may also create additional opportunities to leverage investments, particularly in underserved areas, due to laws adopted by the Oregon legislature prioritizing 50% of a specific new funding stream for transportation electrification (by investor-owned utilities) to be focused on disadvantaged communities. ODOT is actively meeting with investor-owned utilities, discussing potential

leveraging opportunities for communication, education, and outreach, as well as siting of stations and ways to benefit from utility programs.

- ODOT is also undertaking analyses of anticipated demand at different potential DCFC sites and is using existing and forecast traffic data, potential EV adoption rates, and other supporting information. ODOT will explore dedicating a portion of NEVI funding to operations and maintenance support, particularly for stations located where relatively low demand is anticipated in the near term.

Contracting Strategy

In 2003, the Oregon Legislative Assembly granted ODOT the authority to form public-private partnerships (P3)[2] to maximize innovation in project design, financing, or delivery of transportation projects. Under the oversight of the Oregon Transportation Commission, ODOT has broad authority to use the Oregon Innovative Partnerships Program (OIPP) to develop P3s for a full range of transportation projects.

Over the past 19 years, ODOT has used this program to advance innovative projects, including the West Coast Electric Highway (WCEH, 2010), an extensive network of public DCFC and Level 2 EVSE charging stations along the West Coast from British Columbia to the California-Mexico border. Additional OIPP examples include the nation's first Road Use Charge pilot (2015) successfully launched as a sustainable alternative to the gas tax, and the nation's first system-wide Connected Vehicle Ecosystem (2018), which is now in its pre-pilot phase.

OIPP procurements offer many benefits over traditional contracting, including the ability to select projects based on best value rather than lowest cost, customize RFPs to meet the needs of a particular project, and maximize flexibility to change agreements so they accommodate unanticipated events.

To capitalize on the benefits offered by OIPP, ODOT plans to enter a P3 with a selected EVSP(s) to both develop and operate DCFC stations funded through NEVI. ODOT's Climate Office will lead this effort with significant collaboration from the Office of Innovative Funding, building on experience deploying DCFC for the WCEH.

Additional contracting strategies include:

- Exploring options for developing competitive RFPs; how best to incentivize investment in rural and disadvantaged communities; and inclusion of 110V outlets for electric micro-mobility devices such as e-bikes and e-scooters.
- Highlighting the financial value of Oregon's CFP and other benefits that accrue to EVSPs from investments in Oregon.
- Initially awarding NEVI program funding to private EVSP partners through an annual, competitive bidding process that preserves ODOT's flexibility to change vendors and/or update contractual requirements for subsequent program years over the course of the program.
- Developing a strategy that will encourage EVSPs to consider not only building new DCFC stations but also upgrading existing, non-NEVI-compliant sites where it is cost-effective and strategic to do so.
- Employing other strategies as needed.

[2] Oregon Revised Statutes, ORS 376.8005 – 367.824; Oregon Administrative Rules, OAR 731-040-0005 – OAR 731-070-0300.

The annual public-private partnership option was chosen for ODOT's initial contracting efforts, to ensure build out of entire corridors (or segments of corridors) without the risk of EVSPs "cherry picking" to only select stations most attractive to the private sector for development; maximize ODOT's flexibility and control over project details; drive consistency in station development; and streamline the deployment process. ODOT will re-examine processes after evaluating the results of proposals in the first year(s) RFPs and initial investments, learnings from other states, and other factors which may influence the direction of its contracting and/or deployment strategy.

Design Considerations

Contracted EVSPs will be required to develop stations that incorporate specific NEVI guidance and the requirements of the minimum standards rulemaking, and to further Oregon's EV charging goals (articulated above). Examples of requirements and Oregon encouragements are likely to include:

- Future-proofing of sites (where feasible) by including additional electrical capacity and/or other make-ready components. Oregon's aspirational goal is for future-proofing that allows for a minimum of two additional higher-powered ports (greater than 150 kW and up to 350 kW).
- Bi-directional interoperability: networking of chargers and compliance with Open Charge Point Protocol (OCPP) version 2.0.1 (or more recent); capability to switch networks without technological, contractual, or other unreasonable restrictions, in accordance with NEVI guidance via the proposed rulemaking, and ISO 15118 Plug and Charge standards.
- Roaming and network flexibility: compliance with Open Charge Point Interface (OCPI) version 2.2.1 (or more recent) to enable universal roaming, in accordance with NEVI guidance via the proposed rulemaking.
- Vehicle to grid integration: use of OpenADR version 2.0 (or more recent) to enable participation in utility managed charging and similar programs.
- Combined Charging Standard (CCS) ports (at a minimum), with some consideration given to selective inclusion of CHAdeMO or proprietary ports at certain sites to ensure that both new and existing EV drivers of all vehicle models benefit from NEVI funds.
- Remote start capability.
- Incentives to promote the inclusion of 110V outlets for electric micro-mobility, such as e-scooters and e-bikes.
- Selective encouragement of pull-through site designs, where feasible and appropriate, to better enable access for certain types of vehicles.
- Use of U.S.-made EVSE and other equipment, where possible (see discussion in **Implementation** chapter)
- Close proximity to numerous amenities, where possible, such as modern, sanitary bathroom facilities, access to drinking water, shelter, lighting, snack food, dining, shopping, and/or entertainment and recreation options. ODOT may require access to certain amenities as a minimum standard. As part of the P3 RFP, ODOT may consider contractor plans for inclusion of station amenities in its selection criteria.

For additional detail on numerous development and design considerations likely to be included in RFPs for EVSP partners, please see the Technical Specifications included as part of the WCEH upgrade RFP, issued by ODOT in 2020 (included here as Appendix D: Technical Specs and Requirements for Operations, West Coast Electric Highway Upgrade RFP).

In the interest of interstate connectivity and consistency in charging experience, ODOT is also actively considering other neighboring states' standards, to better synchronize interoperability in the region and connectivity among our EV AFCs. ODOT is able to address these concerns through the Pacific Coast Collaborative's ZEV Infrastructure Working Group, American Association of State Highway and Transportation Officials (AASHTO) EV working groups, and independent conversations with colleagues in neighboring states.

Involvement of Local Communities and Businesses

EVSP contracts will encourage public engagement to ensure that the perspective of communities and local businesses are considered when DCFC stations are developed or upgraded. ODOT plans to conduct Regional Workshops along each Corridor as it approaches each year's AFC build out. The findings and the relationships developed in these workshops (along with the site-host volunteers identified through ODOT's interactive web page) will help form the basis of engagement that the selected EVSP will continue. ODOT will work with selected EVSPs to incorporate the state's goals for engagement into the process. While ODOT's expectations will be articulated in further detail as part of the RFP and eventual contracting process, examples of the contract requirements ODOT envisions include:

- Hosting public meetings in the local community to provide ODOT and EVSPs with the opportunity to both share program plans and listen to local concerns.
- Inclusion of economic development efforts, such as the use of local contractors for certain site development services, where possible.
- Engagement with communities regarding options for achieving Justice40 goals.

Engagement activities with these communities are discussed further in the **Public Engagement** chapter.

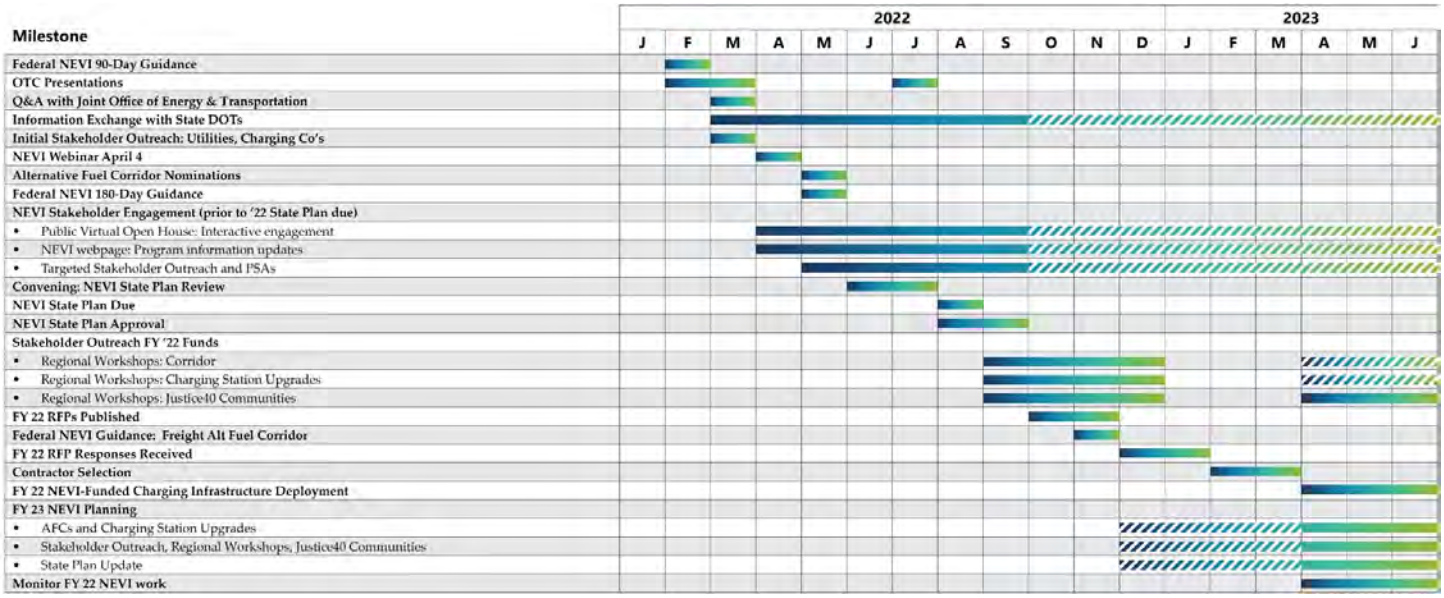
Anticipated Key Milestones for FY22 Funding

The following Gantt chart describes ODOT's anticipated timeline for the FY22 State Plan, engagement and contractor solicitation and selection process. These steps could be replicated or amended to include FY23 funding.

Several key milestones to highlight include:

- August 1st: Oregon's NEVI State Plan due to JOET/ FHWA
- September 30th: Anticipated date of JOET/FHWA approval of Oregon's State Plan
- Late Fall 2022: ODOT issuance of initial P3 RFP
- Winter 2023: ODOT selection of FY22 contractor(s)
- Spring 2023: Initiation of FY22 charging station build out
- Ongoing: Regional workshops along Alternative Fuel Corridors prior to build out

Figure 10: NEVI Plan FY22 Key Milestones



Existing and Future Conditions Analysis

Overview of Existing and Future Conditions

Oregon has varied terrain, climate, population density, and associated transportation patterns. This chapter highlights key areas relevant to the NEVI program. Specifically, the following sections discuss Oregon's highway network and electric AFCs; the state's geography, terrain, and climate; land use patterns; travel patterns, public transportation needs, and freight considerations; electric utility companies; and current EV adoption. Additional information and analyses are provided in Appendix B: Stakeholder Survey Results.

Oregon's Highway Network and Electric Alternative Fuel Corridor Designations

Oregon's highway network is composed of Interstates, Principal Arterials, Minor Arterials, Collectors, and Local Roads, per Federal highway designations.[3] Collectively these routes provide convenient access to most areas of the state.

The FHWA has established a National Alternative Fuels Corridor program to create a national network of highways that support electric vehicle charging, as well as hydrogen, propane, and natural gas fueling. Funding for DCFC stations to support electric AFCs will be largely administered through the NEVI formula program, as well as through a Federal competitive grant program (Section 11401 Grants for Charging and Fueling Infrastructure) that is anticipated to be established by November 2022. A NEVI-compliant Electric Alternative Fuel Corridor will have EV charging infrastructure installed every 50 miles along the corridor, located within 1 travel mile of the highway.

In Oregon, there are seven highways designated as Electric Alternative Fuel Corridors through FHWA's AFC Rounds 1 - 5, four that run north-south and three that run east-west. An additional four highways have been approved as Electric Alternative Fuel Corridors as part of the recent Round 6 nomination cycle (2022), for a total of eleven Electric AFCs statewide.

[3] Interstates are high-speed, multi-lane, limited access highways that are designed for long-distance travel. Principal Arterials are highways that connect cities across the state, including US Highways and Oregon State Highways. Minor Arterials, Collectors, and Local Roads are roadways that connect smaller population centers, support intracity travel, and provide access to destinations.

The following table describes many of the primary highways in Oregon, including Electric AFC designation status.

Table 1: Oregon's Highway Network: Interstates and Principal Arterials

Highway	Electric Alternative Fuel Corridor	Description
Interstates		
I-5	Current	Sole NS interstate, connects CA and WA; heavily travelled corridor by light duty and freight vehicles; a large portion of Oregon's population lives along the corridor
I-84	Current	Sole EW interstate, parallels the Columbia River from Portland to ID border
I-82	Current	Connects I-84 to Washington, in eastern Oregon
I-205	Current	Loop freeway around Portland through the eastern portion of the Portland metropolitan area traversing disadvantaged communities; connects to WA
I-405	Current	Western portion of the freeway loop formed with I-5 around the Portland City Center
I-105		Short freeway connects downtown Eugene to I-5
Principal Arterials (examples, not exhaustive)		
North-South US Highways		
US 101	Current	NS highway along the Oregon Coast; provides the sole regional connection to many small towns and tourist destinations along the coast; connects CA and WA
US 97	Current	NS highway through central Oregon, paralleling the I-5 corridor, but on the east side of the Cascade Mountain range; connects CA and WA
US 95	Current	Route in SE corner of the state, connects McDermitt (Nevada border) to Jordan Valley (near ID border)
US 199		Route in SW corner of Oregon, crosses the Coastal Mountain Range to connect US 101 and coastal areas (Crescent City, CA) to the I-5 corridor (Grants Pass, OR)
US 395		NS highway through eastern Oregon
US 197		NS highway branching off from US 97 north of Madras, paralleling US 97 but offering a more direct connection to The Dalles and I-84 west of The Dalles
East-West US Highways		
US 26	Current	EW highway across Oregon; connects the Oregon Coast to the Portland metropolitan area and Bend; traverses eastward to Idaho
US 20	Current	EW highway across Oregon; connects the Oregon Coast to Massachusetts, traversing the Corvallis/Albany area and Bend, in Oregon; provides a less mountainous connection between Central Oregon and Idaho compared to US 26
US 30		EW highway follows the Columbia River between Astoria (Oregon Coast) and Portland, parallel to the US 26 corridor; disparate segments signed as US 30 provide alternate routes to I-84 in a few locations
Intercity Oregon Highways		
OR 42	Current	EW highway connects Winston and greater Roseburg area to Southport and greater Coos Bay area (US 101 and I-5, both EV Alternative Fuel Corridors)
OR 126		EW highway parallels US 20, to the south, across the Coastal Range before intersecting with US 20 in the Cascade Range
OR 22		EW highway parallels US 20, to the north, across the Coastal Range before intersecting with US 20 in the Cascade Range
OR 217		NS highway through the western suburbs of the Portland metropolitan area that connects between I-5 and US 26
OR 99		NS highway that parallels the I-5 corridor intermittently throughout the state; splits into OR 99W and OR 99E north of Eugene both of which connect many communities along the I-5 corridor

The first map below shows the U.S. and State highway classification system across Oregon, while the second highlights Electric Alternative Fuel Corridors.

Figure 11: Highway Designations

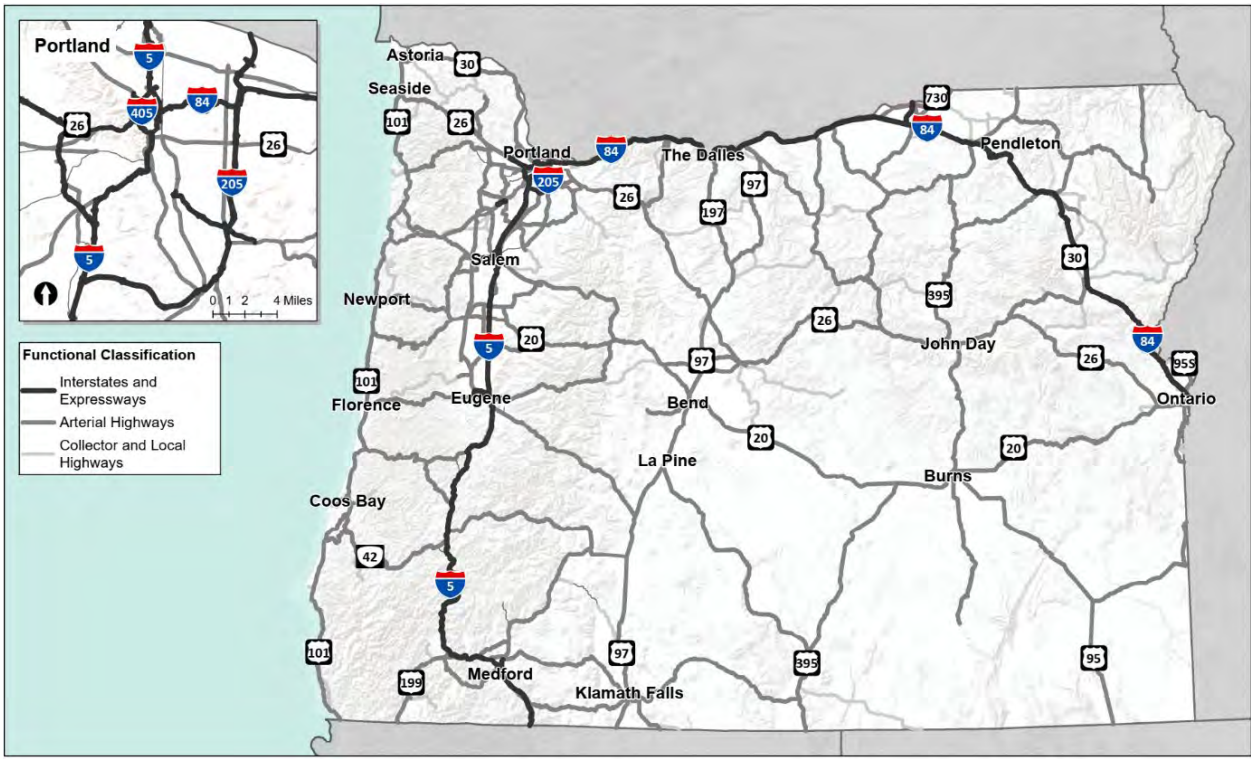
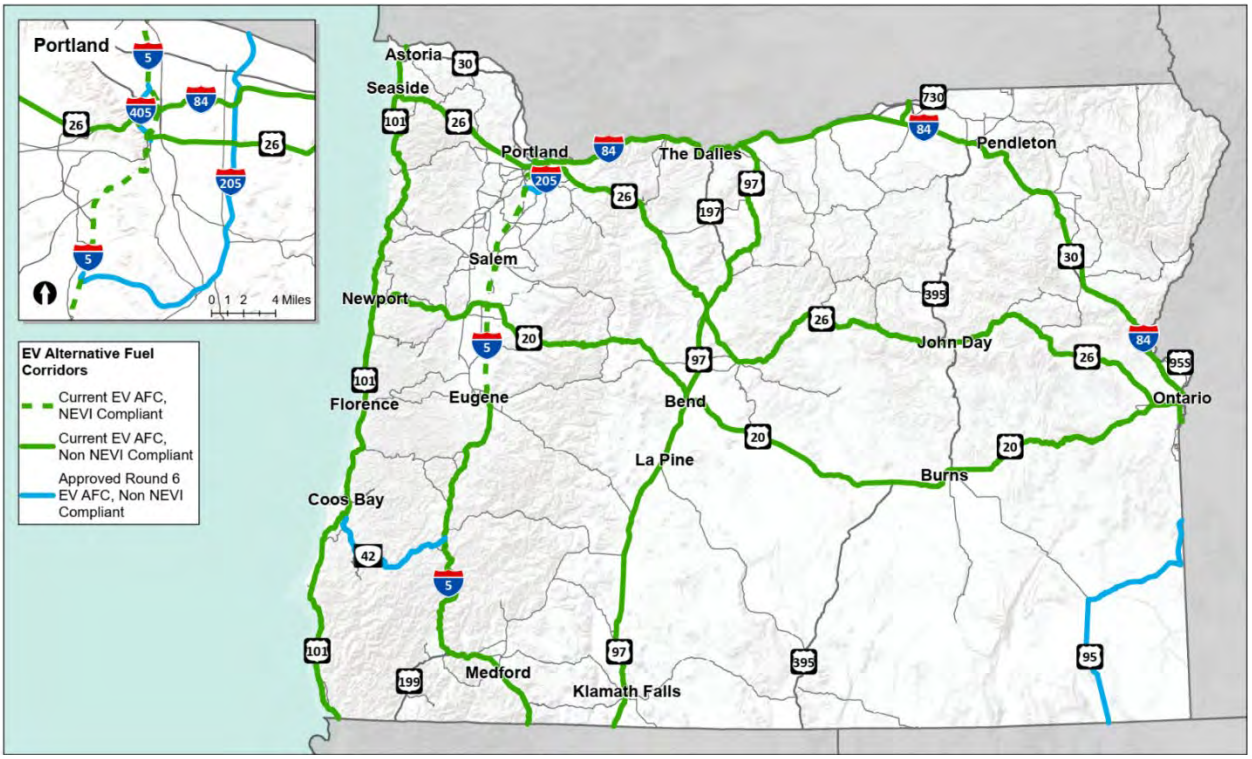


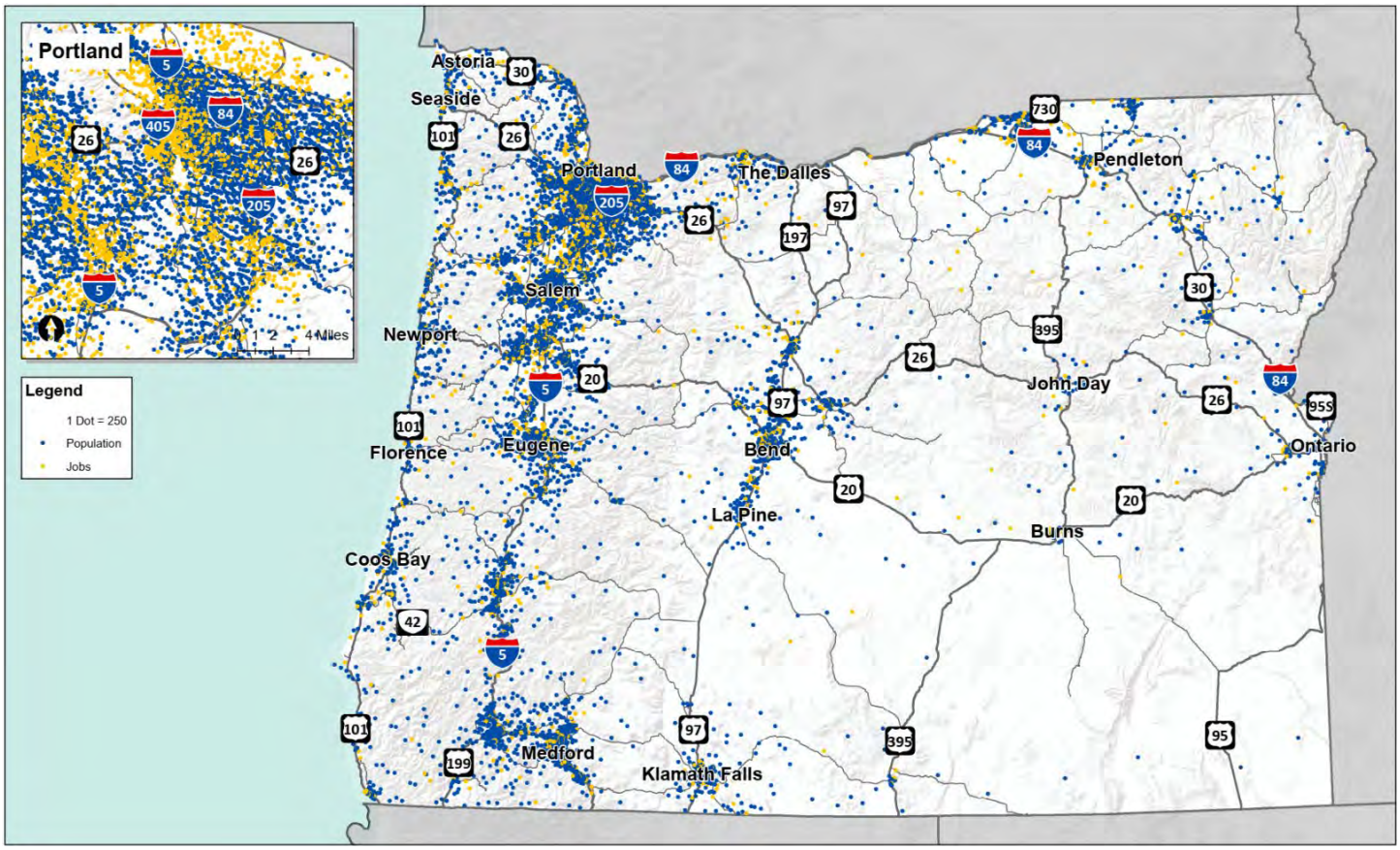
Figure 12: Current EV Alternative Fuel Corridors



Land Use Patterns

Oregon's population is primarily located in the Willamette Lowland along the I-5 corridor and the Willamette River. Major metropolitan areas along the corridor include Medford, Eugene, Salem, and Portland. The distribution of population and employment across the state is shown in Figure 13 below. Commercial and industrial land use patterns largely mirror this population density, with the largest concentrations in the Portland area and along the I-5 corridor. Appendix E: Additional Supporting Analysis provides additional maps of these land use patterns.

Figure 13: Oregon Population and Employment Distribution



State Geography, Terrain, and Climate

Oregon is a diverse state with varying geography, terrain, and climate. When planning for NEVI-funded stations, ODOT will consider local and regional conditions to ensure that stations are deployed with local needs and challenges in mind, such as steep roadways or extreme temperatures, both of which can reduce the EV efficiency.

Oregon's geography of the state is defined by six major regions. The Cascade Mountains run north to south through the state and include Mount Hood, Oregon's highest point. East of the Cascade Mountains Oregon is divided into the Columbia Plateau and the Basin and Range Region. Eastern Oregon is more arid than the western portion of the state. West of the Cascade Mountains Oregon is divided into the Coast Range, Willamette Lowland, and Klamath Mountains. The Willamette Lowland is a narrow area where many Oregonians live. The Coast Range separates the Willamette Lowland from the Pacific Ocean. The Klamath Mountains are a rugged forested range in the southwest of the state.

Roadways traversing the state east to west are likely to cross one or more of these geographies. These steep and high elevation terrains may present additional considerations for EV operation and charging infrastructure.

Climate

The Western Regional Climate Center (WRCC) is a partnership of State and Federal science, weather, and climate-focused agencies that collects monthly temperature, rainfall, and snowfall data at a wide variety of locations across the western United States. ODOT has used data collected at these sites to assess snowfall and temperature patterns across the state, which will help inform station siting and design considerations.

Snowfall

The highest snowfall occurs throughout the Cascade Mountains, around Klamath Falls, and in northeast Oregon. Appendix E: Additional Supporting Analysis shows average January snowfall throughout the state.[4]

Findings related to NEVI planning include:

- Stations located along US 97 are likely to need the most snow removal and management efforts, most notably from Bend to Klamath Falls.
- I-84, US 26, and US 20 may also require some snow removal and management, as they traverse the Cascade Mountains and Eastern Oregon, which tends to have higher levels of snowfall.
- Stations located along I-5 and US 101 are not expected to be commonly impacted by snowfall, with the exception of I-5 around Sexton Summit north of Grants Pass.

Temperature

Batteries in EVs function less efficiently under very hot or very cold conditions. Temperatures west of the Cascade Mountains tend to be moderate with average low temperatures above freezing and highs in the 80° F range. Temperatures east of the Cascades tend to be more extreme with low temperatures below 20 F and high temperatures above 90° F. The average temperatures of the coldest and hottest months across the state are shown in Appendix E: Additional Supporting Analysis.

Findings related to NEVI planning include:

- I-84, US 26, and US 20 cross the Cascade Mountains and travel across Eastern Oregon, which tends to have more extreme temperatures than other areas.
- US 97 connects La Pine, Chemult, and Klamath Falls, all of which have average low temperatures below 17 degrees F during the coldest month of the year.
- US 101 and I-5 experience relatively moderate temperatures, except for the Sexton Summit area and the Rogue Valley/Medford area of I-5.

Climate Impact

ODOT completed a corridor risk analysis for climate hazards including coastal erosion, inland flooding, wildfire, hot days, snow days, freeze/thaw conditions, and heavy precipitation. This risk analysis identified the

[4] January has the highest average snowfall across all 160 Western Regional Climate Center sites assessed in this analysis, and represents the conditions during peak snow removal activity.

extent to which different highway corridors are impacted by these hazards. ODOT's Climate Hazard Risk Map allows for exploration of multiple hazard layers, superimposed over highways and other transportation assets. ODOT will consider these climate impacts and associated risks while working with contractors to plan for NEVI station siting, including how EV charging infrastructure can help to prepare corridors and local communities for the effects of a changing climate.

Road Grade

To identify areas where the intervals between stations might need to be shorter to account for additional energy expended climbing inclines and/or locations where additional ports might be valuable to meet larger energy needs, ODOT has analyzed the slope of different segments of the Electric Alternative Fuel Corridors. ODOT does not expect slope to play a major role in siting EV charging stations for corridors to be developed with FY22 NEVI funding given the relatively mild average slope. Appendix E: Additional Supporting Analysis provides additional details on this analysis, which may be expanded to explore segments of future year Electric AFCs that might merit additional consideration based on road grade considerations.

State Travel Patterns, Public Transportation Needs, Freight and Other Supply Chain Needs

Annual Average Daily Traffic

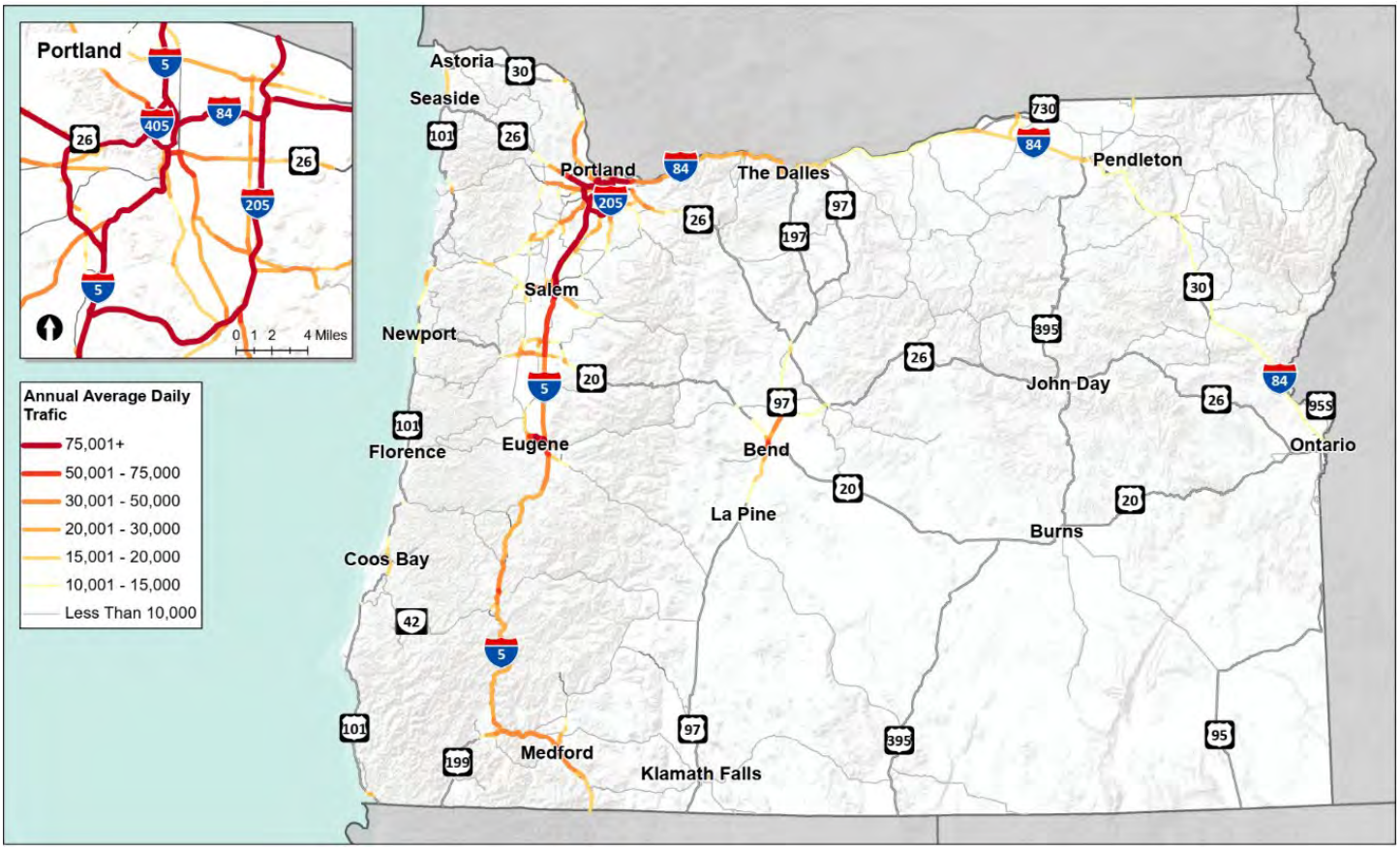
Annual average daily traffic (AADT) measures yearly vehicular traffic along a roadway segment (conveyed as a daily average) and is used to estimate typical traffic levels.

The highest traffic volumes in the state surround the metropolitan areas. The highways with more than 75,000 daily vehicles are primarily located in and around the Portland metropolitan area, with two segments near Eugene. Other highway segments with more than 50,000 daily vehicles are located within Oregon's other largest metropolitan areas, including Salem, Roseburg, Medford, and Bend.

Findings related to NEVI planning include:

- The I-5 corridor has the highest continuous AADT along the length of the corridor.
- I-84 also has a relatively high continuous AADT, although it is considerably smaller than I-5.
- I-205 and I-405 are exclusively in the Portland area and have very high AADT.
- Where AFCs travel through population centers, AADT increases. Of note is the section of US 97 between Bend and Redmond, along which AADT is significantly higher than the rest of the corridor.

Figure 14: Annual Average Daily Traffic



Heavy Vehicle Volumes

While NEVI funding is primarily focused on light-duty vehicle (LDV) charging, ODOT is considering how best to plan for electrified medium- and heavy-duty vehicles as well as highlighted in the non-LDV use cases analyzed in the 2021 TEINA report: local commercial and industrial vehicles, heavy-duty freight trucks, and both transit and school buses. One way NEVI funding can help address future charging needs of these vehicles is by designing stations to include pull-throughs to accommodate larger vehicles, such as the lighter and/or smaller end of the MD classes.

The Oregon Freight Plan, most recently amended in 2017, defines the I-5, I-84, US 20, and US 97 corridors as strategically significant for major freight dependent industries. About 70% of industry outputs in ton-miles travel along I-5 and I-84. The build out of these corridors with LDV charging over the next several years will help lay the groundwork for the larger capacity charging needs these vehicles are likely to require in the coming years. Appendix E: Additional Supporting Analysis includes a map of heavy vehicle AADT by highway segment across the state.

Analysis of heavy vehicle AADT highlights that:

- I-5, I-84, I-405, and I-205 have portions of the corridor with 10,000+ daily heavy vehicle trips.
- In the Portland metropolitan area, there is more heavy vehicle traffic on I-5 than I-205. Nearly all of I-5 from Portland south to Roseburg sees 7,500+ daily heavy vehicles, whereas only a small handful of short segments on I-84 between Portland and east toward Boardman meet this threshold.
- I-84 has the highest heavy vehicle AADT of east-west routes across the state.

- US 26, OR 22 in the Santiam River canyon, and OR 58 have the highest heavy vehicle AADT across the Cascade Mountains. East of Bend, there are more heavy vehicles on US 20 than on US 26.
- US 101 has relatively low heavy vehicle AADT.

Public Transport

There are 64 distinct transit providers in Oregon. These include public and private services, local transit, intercity bus, rail service, trams, and streetcar. Transit service includes intracity and intercity trips. The frequency of intercity routes throughout Oregon is shown in Appendix E: Additional Supporting Analysis. These routes are important regional connections for people living throughout the state.

Findings related to Alternative Fuel Corridors (AFCs):

- Intercity transit routes travel along most of the AFCs.
- The most frequent intercity transit routes travel along the I-5 corridor between Eugene and Portland.
- Sections of US 101 are frequently served by intercity transit routes.
- As transit buses electrify in the coming years, charging infrastructure to support these routes will be needed largely in the same areas of high LDV traffic volumes.

Appendix E: Additional Supporting Analysis includes a map of intercity transit routes and frequency in Oregon.

Long-distance Trip Estimates

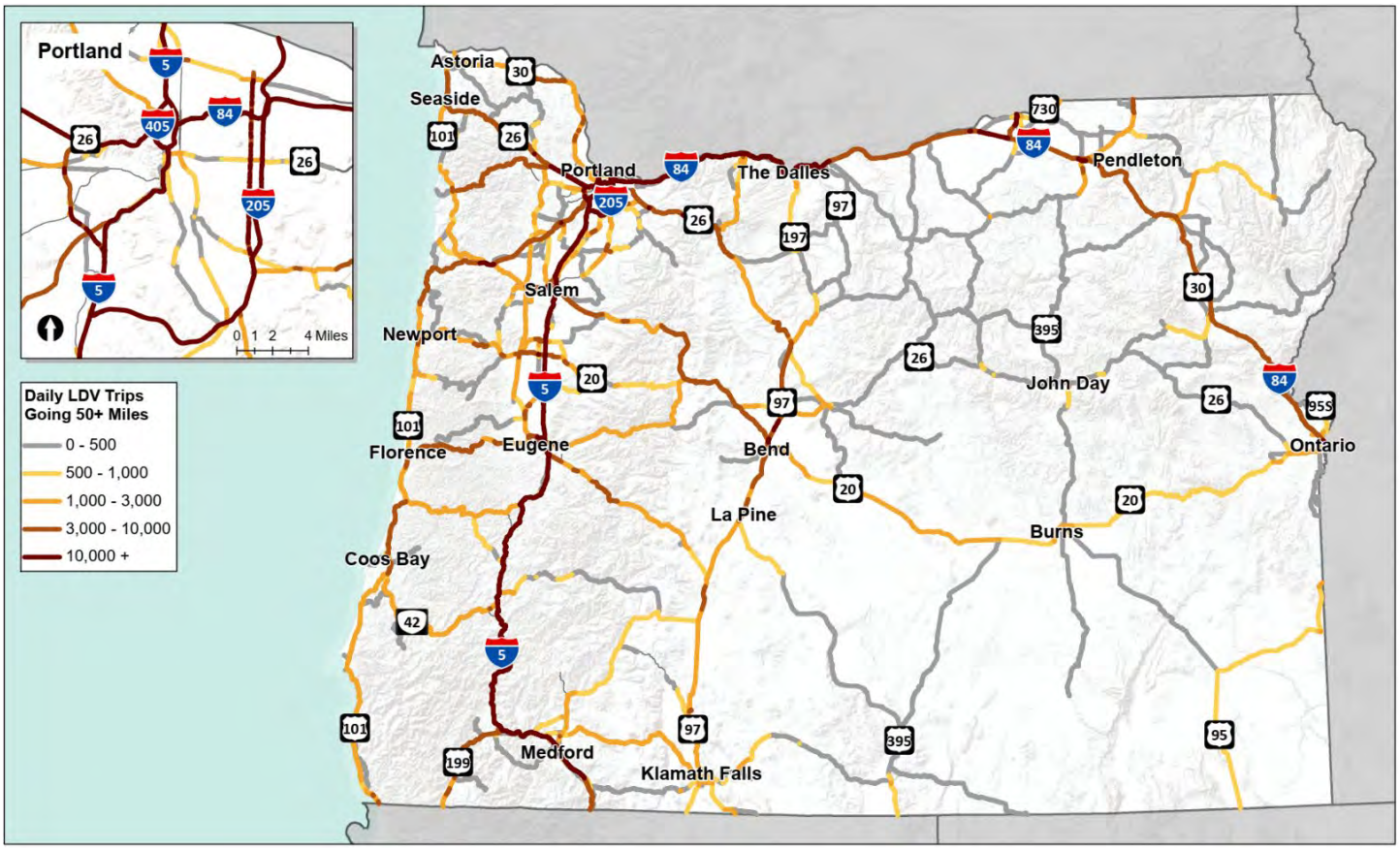
Using ODOT's Statewide Integrated Model (SWIM)[5], ODOT has estimated the number of long-distance trips (50+ miles) made by LDVs on corridors throughout Oregon.

Findings related to NEVI planning:

- I-5 has the greatest portion of long distance LDV travel in Oregon, representing 40% of statewide long distance vehicle miles traveled (VMT).
- I-84 has the second greatest portion of long distance LDV travel in Oregon, with 20% of statewide long distance VMT occurring along the corridor.
- Considering I-82's short corridor length, it has a similar rate of long-distance travel to I–84.
- US 26 west of Bend and US 97 have more long-distance travel along them than US 101 and US 20.
- East of Bend, there is more long-distance travel occurring along US 20 than US 26.

[5] SWIM is an ODOT data-driven forecast model designed to represent the Oregon economy with respect to land-use and transportation by simulating the activity and market exchanges made by people and businesses. Further technical details on the ODOT SWIM model can be found on the technical wiki here: https://github.com/tlumip/tlumip/wiki.

Figure 15: Long Distance Trips

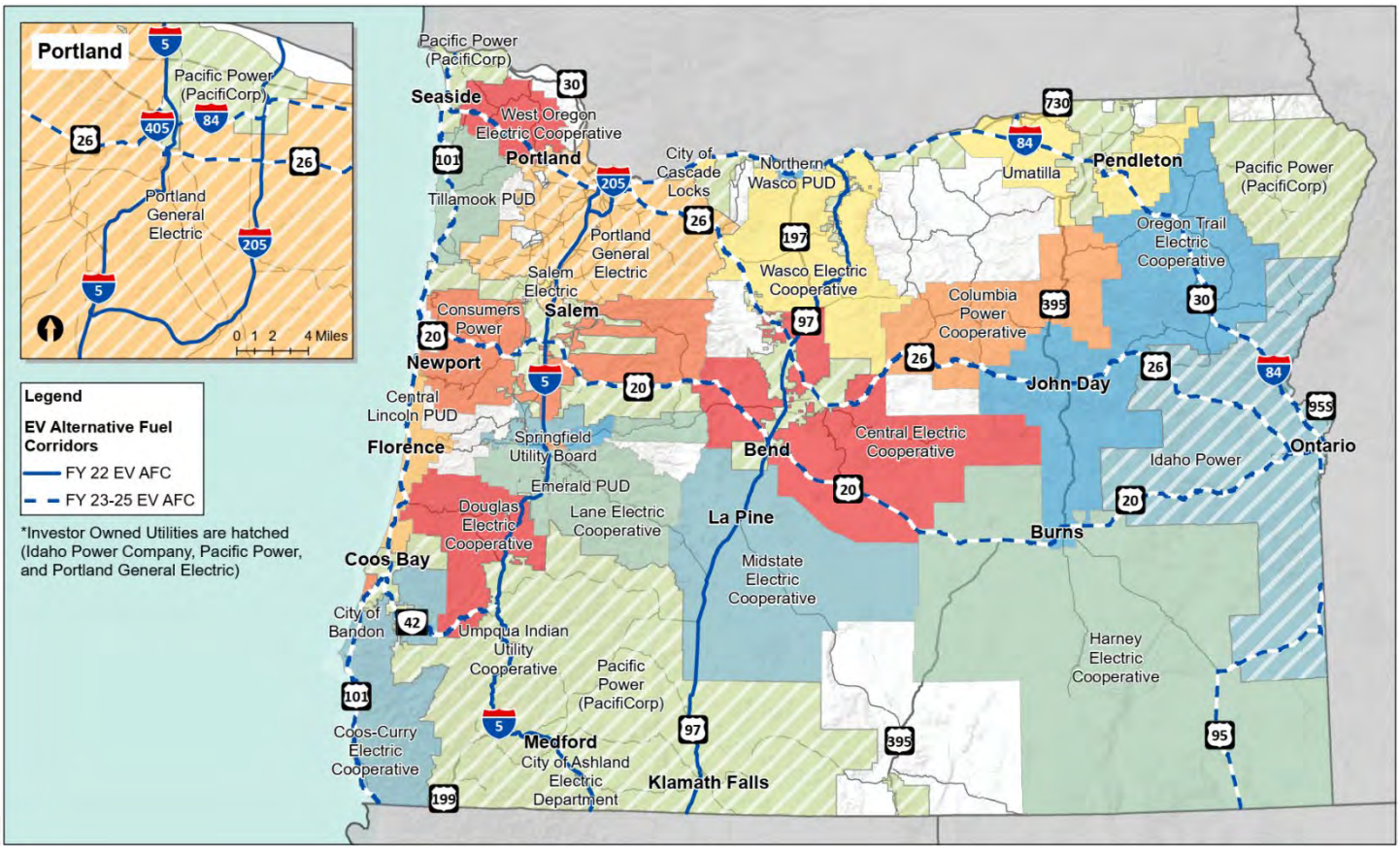


Electric Utilities

Across Oregon there are three investor-owned and 37 consumer- or publicly-owned electric utilities. The following map shows utility service territories along with EV Alternative Fuel Corridors. ODOT is coordinating with many of these utilities, focusing initially on the areas where early year NEVI funding deployment is planned while also beginning conversations with all utilities in the interest of streamlining DCFC deployment across all AFCs, and potentially other roads once these priority corridors are built out.

In May 2022, ODOT issued a request for information to all utilities in Oregon, requesting details on the availability of three-phase power, electrical capacity in their service territories (and specifically along current or nominated electric AFCs), interconnection timelines and staffing plans, and the availability of funding programs to potentially count towards the 20% non-Federal match (see Appendix C: Utility Request for Information). ODOT has received a strong and generally enthusiastic response, although most utilities have cautioned that supply chain issues and – for some – interconnection timelines will be challenges to overcome when deploying NEVI-funded stations in their service territories.

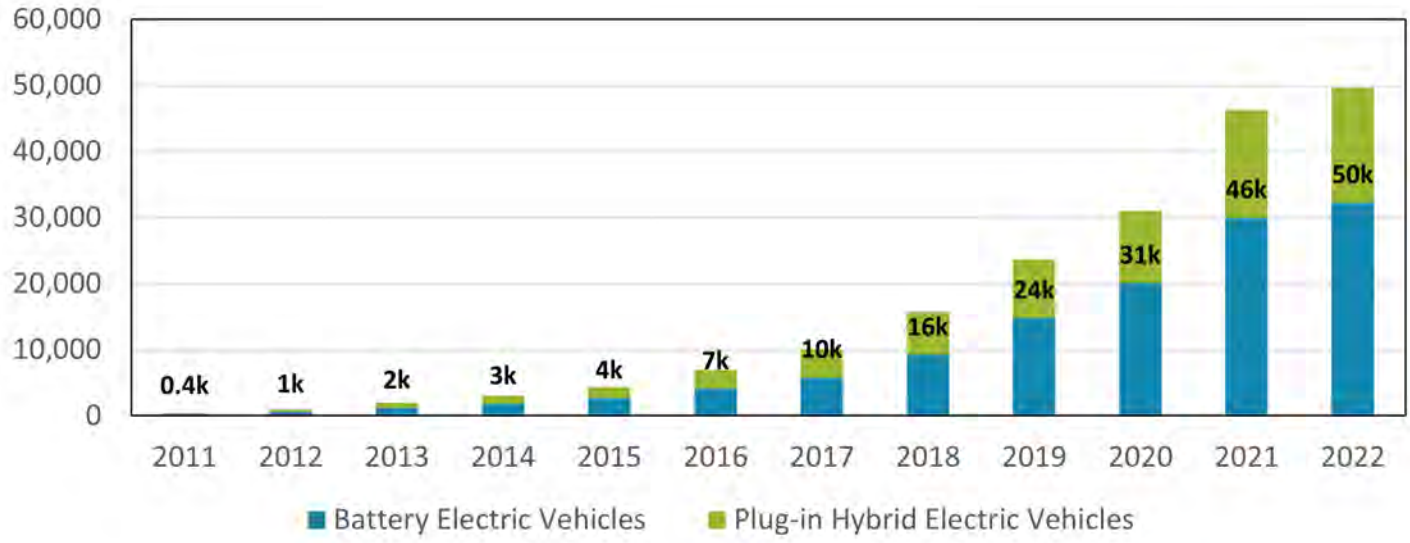
Figure 16: Oregon Electric Utilities



EV Adoption

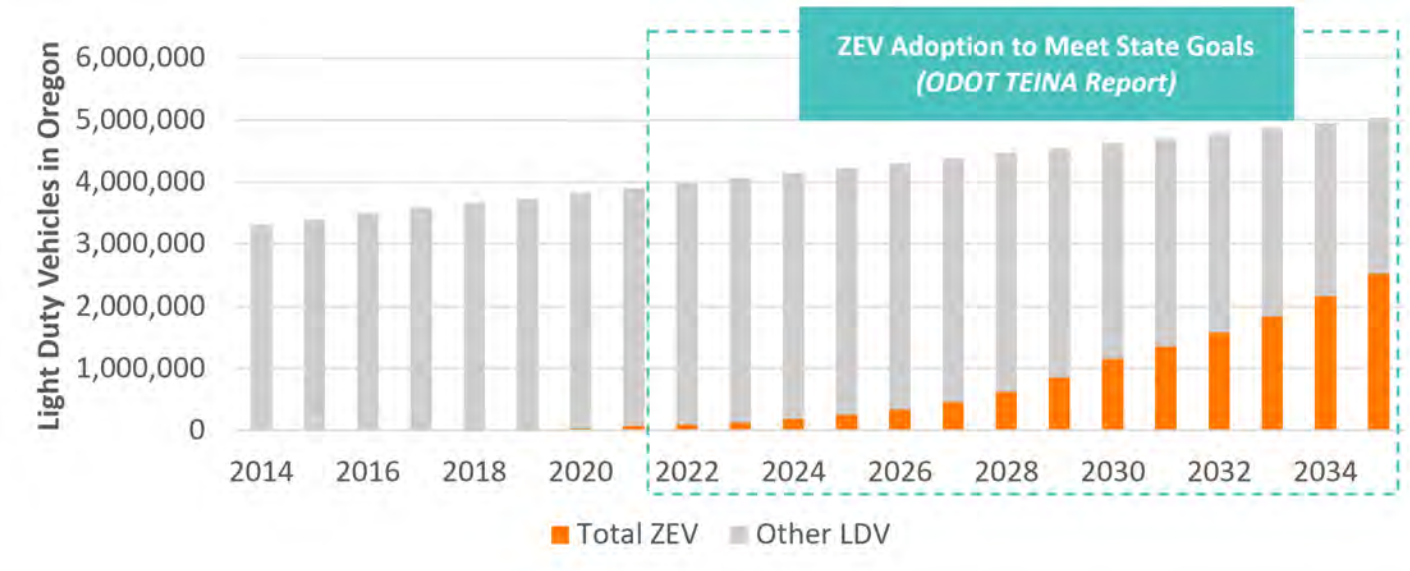
As of April 2022, there were approximately 50,000 ZEVs registered in Oregon, with over 32,000 Battery Electric Vehicles (BEVs) and over 17,000 Plug-in Hybrid Electric Vehicles (PHEVs). Further information on current EV registrations in Oregon can be found through the Oregon Department of Energy (ODO) EV Dashboard. Although this represents a little more than 1% of the total light duty vehicles registered in Oregon, the state has greater than 7% of new LDV sales that are ZEVs (ZEVs include both BEVs and PHEVs). The historical EV ownership in Oregon is shown in Figure 17.

Figure 17: Annual EV Registrations in Oregon



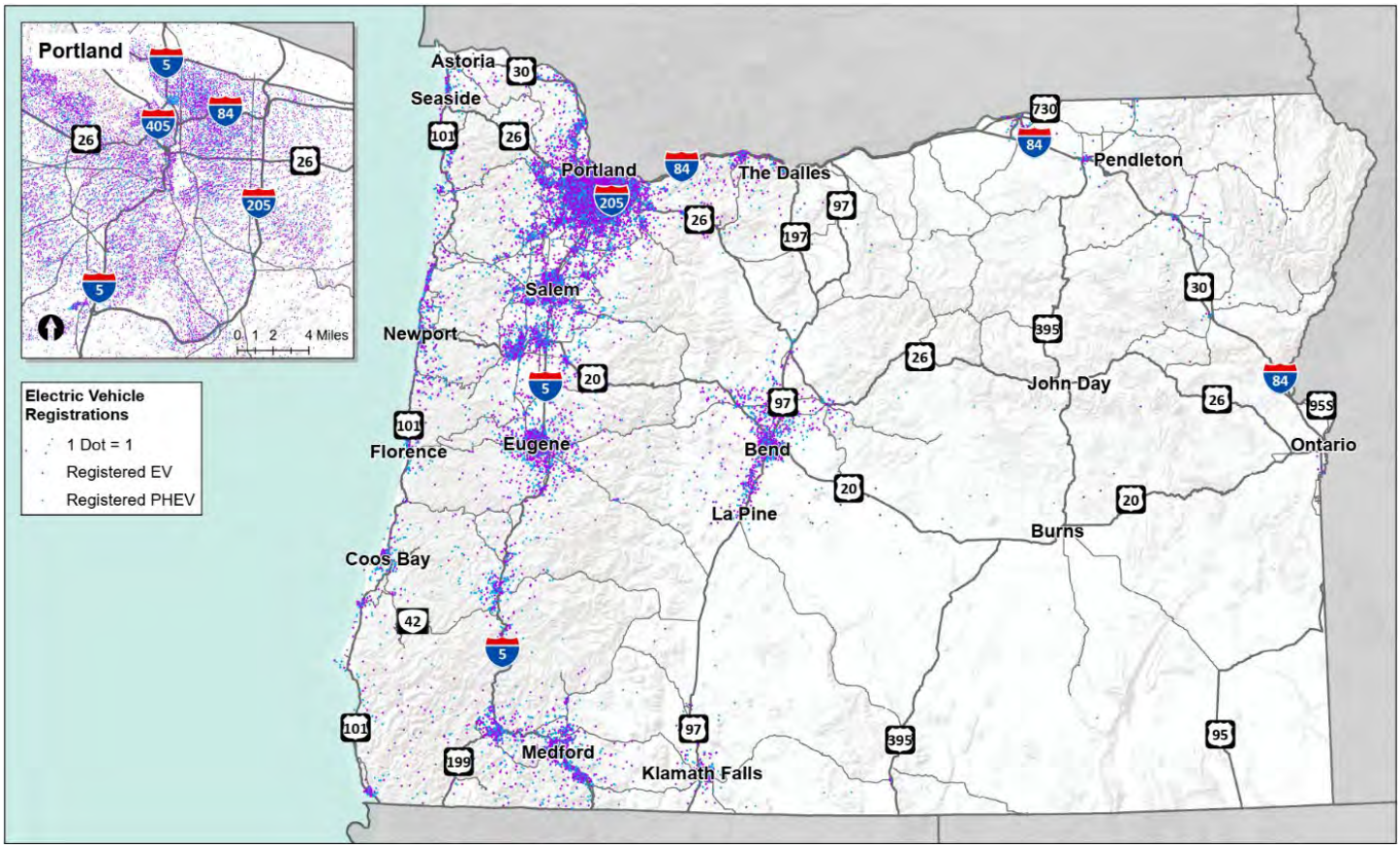
The State of Oregon has set goals that result in approximately 50% of registered LDVs in the state producing zero tailpipe emissions by 2035. The expected growth in EV ownership required to reach this level of ZEV adoption is shown in Figure 18.

Figure 18: EV Adoption in Oregon Relative to All Light Duty Vehicles



EVs are owned or leased by Oregonians throughout the State, however EV registrations are primarily clustered in population centers. According to ODOE's *Biennial Zero Emission Vehicle Report*, the greatest concentration of registered EVs is in the Portland metropolitan area, although other population centers throughout the state have pockets of concentrated EVs. Rural areas comprise about 30% of the population but only 12% of EV registrations. The distribution of EVs throughout the state is shown in Figure 19.

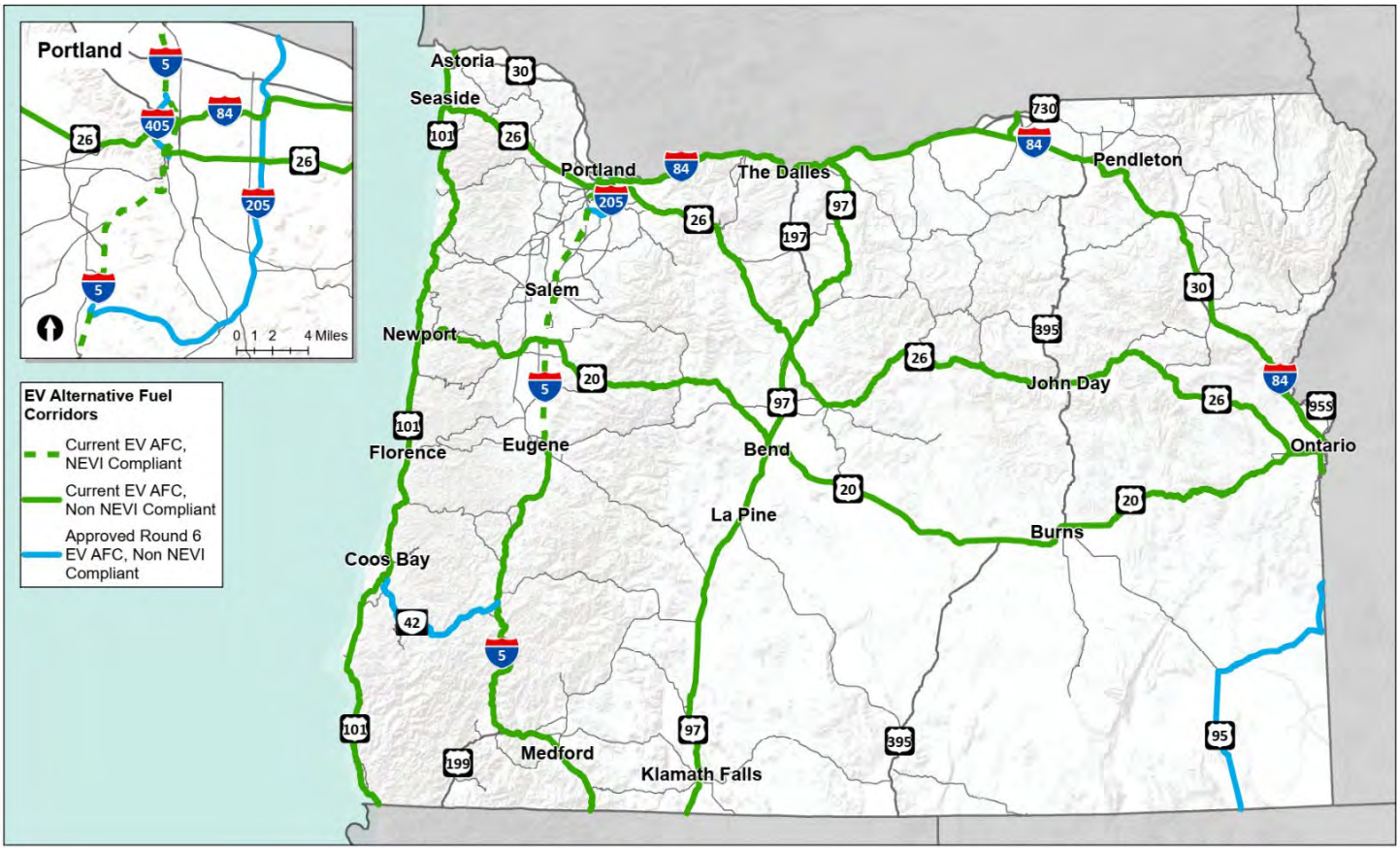
Figure 19: EV Registrations in Oregon



AFC - Corridor Networks

The following map shows Oregon's EV Alternative Fuel Corridors.

Figure 20: Electric Alternative Fuel Corridors by Status



Existing Locations of Charging Infrastructure Along AFCs

Please see table of existing charging locations along the seven electric AFCs approved by FHWA in Rounds 1-5 in Appendix F: Existing Public EV Charging on Round 1-5 Electric Alternative Fuel Corridors.

Existing Distribution of Charging Infrastructure

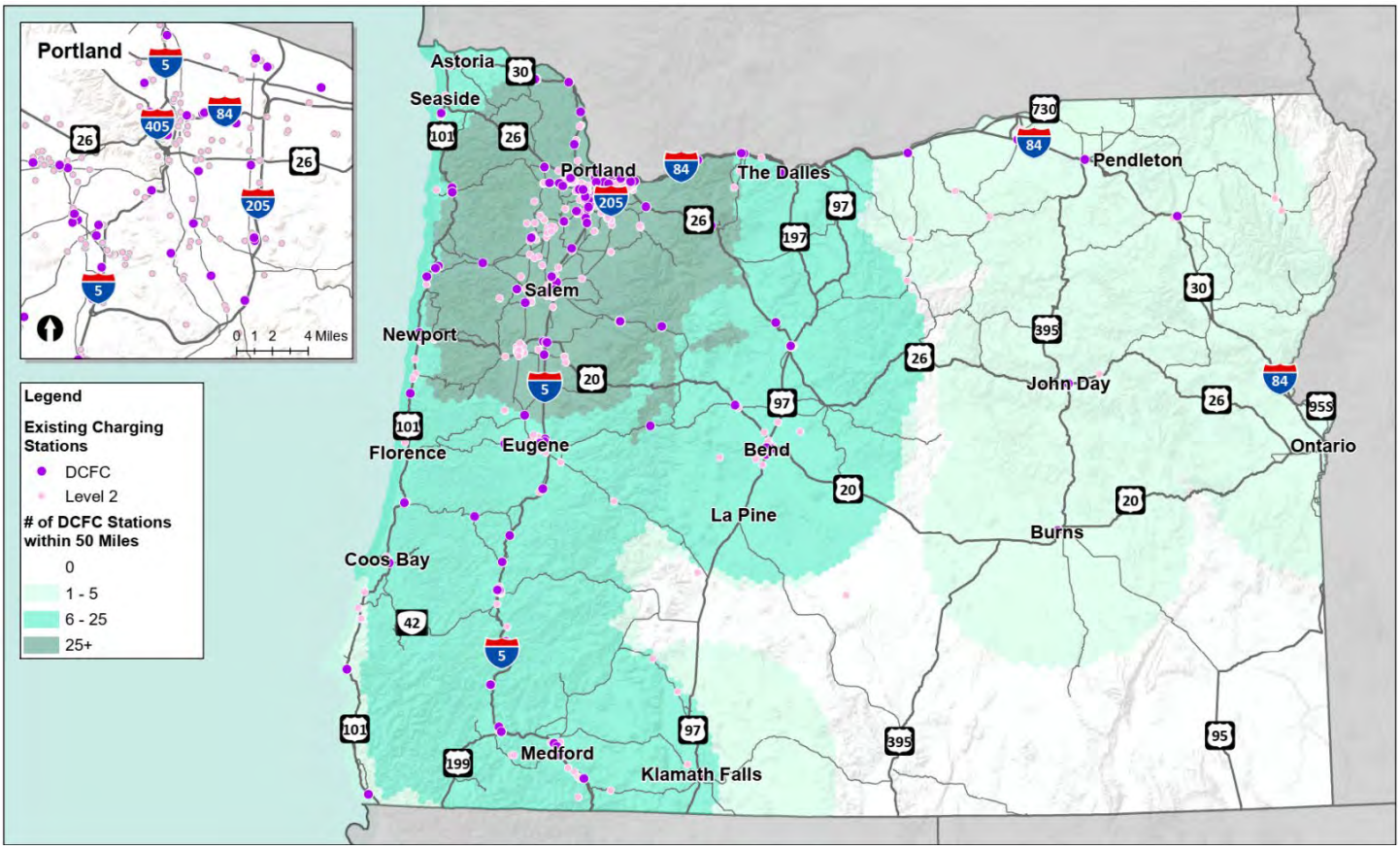
Oregon currently has EV charging infrastructure throughout the state, although its distribution is not uniform. As highlighted in the 2021 TEINA study, "charging deserts" lacking sufficient infrastructure exist, both along rural corridors and in rural communities as well as in densely populated urban areas.

Oregon has previously worked collaboratively with California, Washington, and private partners to develop the West Coast Electric Highway (WCEH), a network of EV fast charging stations spanning from Mexico to Canada. There are 44 existing WCEH stations in Oregon, the majority of which (32) are along Oregon's AFCs. A map of the existing charging infrastructure, including WCEH sites, is included in Figure 21 below.

DCFCs are concentrated in the Willamette Valley (along I-5 between Eugene and Portland). There is a relatively high density of fast chargers around Portland, and a moderate density of fast chargers along the

southern portion of I-5 and west of US 97. There are a few fast chargers located east of US 97; however, population density in that part of the state is considerably lower.

Figure 21: Existing Public Charging Infrastructure



Disadvantaged Communities

For discussion of existing conditions relative to equity and disadvantaged communities, please see the **Equity Considerations** chapter.

Known Risks and Challenges

ODOT perceives numerous challenges to DCFC station deployments and will work with partner agencies and stakeholders such as local communities, utilities, and EVSPs, to mitigate risks and to meet all necessary NEVI program requirements.

Development Timeline

ODOT believes that it will be challenging to reach DCFC operations within six months of procurement, as encouraged by the NEVI guidance. There are open questions regarding how such a timeline will intersect – and potentially conflict – with National Environmental Policy Act (NEPA) requirements. Local permitting and zoning timelines also pose risks to project development. On the utility side, necessary electrical upgrades and interconnection processes may also make it challenging to deploy the stations needed on the timelines desired. ODOT is working with utilities to identify locations with excess grid capacity to mitigate this issue.

Supply Chain

Utilities in Oregon consistently report that supply chain issues are causing unprecedented delays in sourcing components such as transformers, switch gear, and other electrical equipment necessary to support DCFC station developments. ODOT has also heard from EVSPs that meeting the Build America, Buy America (BABA) and related Made in America requirements may not be feasible based on current domestic manufacturing capabilities. Despite these challenges, ODOT will work with utilities, EVSPs, and other stakeholders to ensure that the NEVI plan meets all necessary NEVI program and Title 23 requirements.

Cost

ODOT has estimated costs for the build out of its Alternative Fuel Corridors. However, each DCFC station developed (or upgraded) will have specific requirements—for example, utility upgrades—which may exceed the level of costs currently being forecasted. This may be especially true given the significant supply chain issues (see above) and rapid inflation. To the extent that costs increase significantly, Oregon will not be able to stretch the NEVI funding as far as it would like to, resulting in fewer stations and/or ports developed throughout the state.

Workforce Considerations

The NEVI program represents a significant opportunity for workforce development. However, there is insufficient qualified labor to complete these deployments, especially when considering certification requirements. ODOT is engaged in discussions with utilities and unions regarding the statewide status of local certified workforce and workforce development needs.

Equity Considerations

ODOT is committed to the equitable deployment of publicly-accessible charging infrastructure throughout the state. However, achieving this deployment—and doing so in a way that truly centers the voices of historically disadvantaged and/or underserved communities—requires dedication, resources, and time.

ODOT is assembling a detailed strategy to meet these goals but recognizes that successfully sharing the benefits offered by the NEVI program and avoiding many of the challenges perpetuated by the existing transportation system is no small feat. As described in the **Public Engagement** and **Equity Considerations** chapters, ODOT has been and will continue engaging with communities from across the state to understand needs and challenges from the local perspective. Existing known disparities in EV adoption include:

- Adoption rates are lower in rural areas of Oregon. Only 12% of ZEVs in the state are registered in rural areas, despite these areas representing a third of Oregon's population.
- Adoption rates are lower for lower-income families. EV ownership correlates strongly with income level, with significantly lower adoption rates for counties with households averaging under $45,000 per year.
- Adoption rates are significantly lower for people living in multi-unit dwellings. There are about 7.3 EVs registered per 1,000 Oregonians in census block group areas where less than 50% of dwellings are single family homes. In contrast, there are nearly 20 EVs per 1,000 people in areas where there are only single-family homes.

EV Charging Infrastructure Deployment

Overview and Guiding Principles

ODOT's charging infrastructure deployment strategy is based upon several guiding principles that align with the goals articulated in both TEINA and the NEVI program. Through NEVI funding ODOT aims to:

- Achieve **geographic balance** between urban and rural charging needs to develop infrastructure across the entire state.
- Provide charging access in areas with larger **disadvantaged community** (DAC) populations.
- Provide charging for **high-traffic corridors** first, where possible (balanced with other principles).
- **Leverage existing** and/or planned EV charging infrastructure.
- Emphasize **connectivity with neighboring states** to establish an interstate charging network.

Over the course of the five-year NEVI program, ODOT anticipates using the $65 million in total funding (NEVI and 20% non-Federal match) to develop and/or upgrade approximately 65 DCFC stations across Oregon's roadways, totaling a minimum of 260 DCFC ports (doubling the number of DCFC ports in the state), plus ideally future-proofing for later installation of an additional 130 ports.

Current Prioritization Strategy

With FY22 funding ODOT aims to build out I-5, completing one of the most critical, high-traffic routes in the state, while also building out US 97, a key route through central Oregon that carries high traffic volumes relative to other rural areas. ODOT will also develop I-205 in the Portland metropolitan area because of its high traffic volumes and route through numerous DACs. ODOT has conducted analysis of approximate station locations along these routes—including sites that may be upgraded—and will work with contracted EVSPs to determine specific sites once the P3 contracts are awarded.

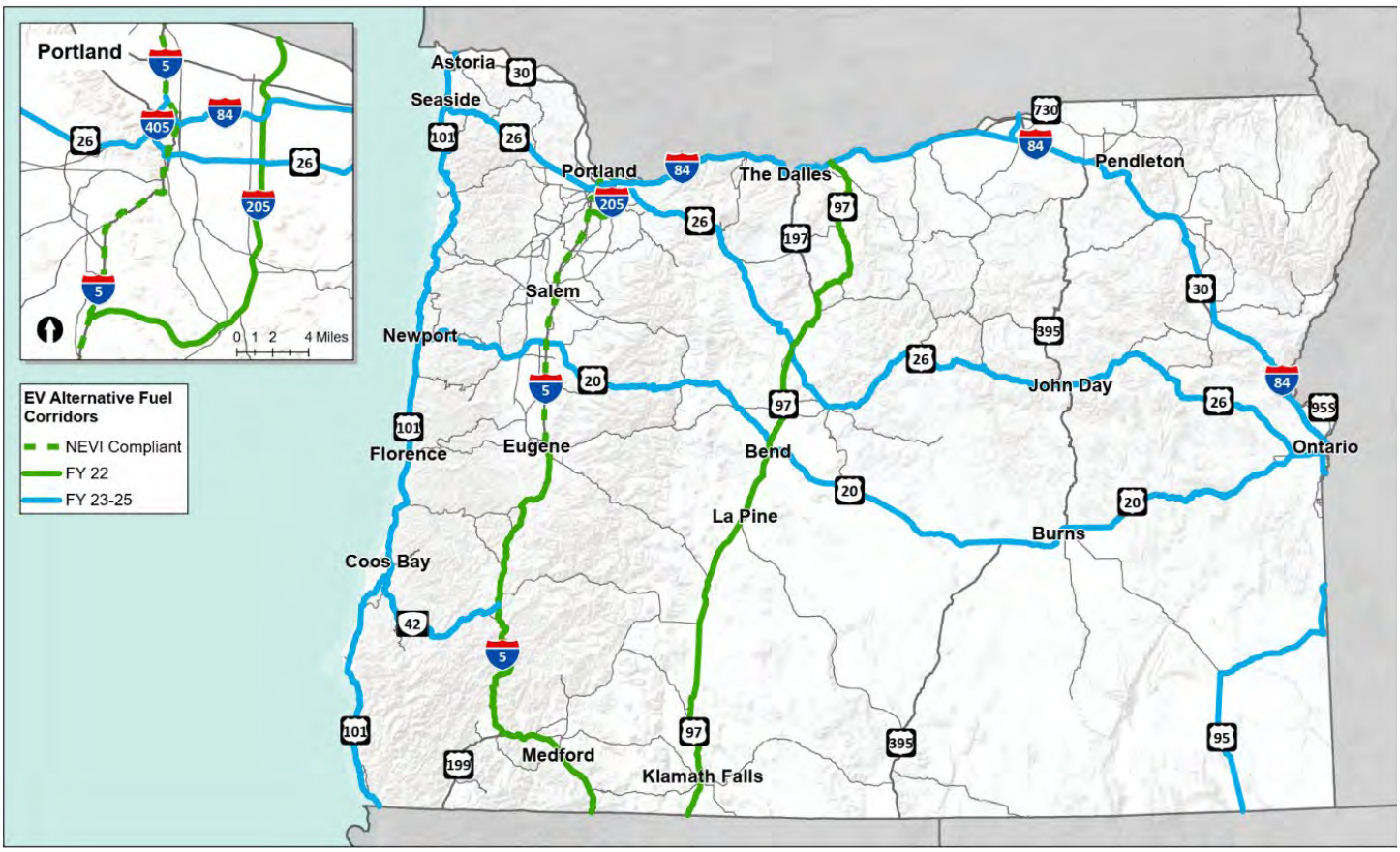
FY23 funding will focus on east-west routes, given that FY22 funding predominantly focuses on north-south routes. I-84 will be built out given its high traffic volumes, relatively large DAC density along the route, and relatively high proportion of long-distance trips. ODOT will build out I-82 simultaneously because of its proximity to I-84, connection to Washington state, and potential for shared infrastructure between the routes. It will also develop US 20 to provide additional rural EV charging coverage through central Oregon. ODOT has begun detailed analyses of these routes to identify approximate station locations considering factors such as population centers, DACs along the route, anticipated electric grid capacity, road grade, and local commercial activity. ODOT will continue to refine planning efforts as we get closer to build out of these corridors, including soliciting additional input from local communities.

FY24 funding will target completing the remaining EV AFCs approved in Rounds 1 – 5, providing additional central Oregon coverage through development of US 26 and bolstering the existing DCFC infrastructure along the coastal US 101. ODOT will balance these more rural corridors by building out I-405 in the Portland metropolitan area, which has high traffic volumes and a relatively large DAC population.

Funding for FY25 and FY26 will be used to complete the remaining EV AFCs approved in Round 6 (2022), US 95 and OR-42. ODOT is currently reserving funding for these later years to either develop additional EV AFCs that have yet to be proposed, and/or to build redundancy in charging stations along the other AFCs to strengthen the overall network and accommodate increasing EV traffic in the coming years.

Figure 22: Proposed DCFC Prioritization by Year and EV AFC

Figure 23: Planned Implementation Year for AFCs



Policy Support

Please see discussion of state, regional, and local policy in the following chapter for an overview of how ODOT and other agencies in Oregon are working together to support transportation electrification and overcome barriers to the deployment of supportive infrastructure.

Funding Sources

Per NEVI guidance, the total Federal cost-share shall not exceed 80%. ODOT expects the 20% non-Federal funding to come from a combination of several sources, with primary funding coming from the private-sector partner(s) ODOT will contract with through a P3. ODOT intends to include RFP selection criteria that awards additional points to private-sector providers who commit to funding a larger share of total project costs, aiming to use the NEVI funding as a true catalyst for private sector engagement.

Additional potential sources of funding include:

- **Oregon's electric utilities**, many of which have committed substantial funding for transportation electrification (e.g., through line extension programs and dedicated transportation electrification programs). Where appropriate, this may be used to provide a portion of the non-Federal match requirement.
- **Local governments** may also contribute financially or in-kind (e.g., by providing real estate and/or serving as site hosts for stations) towards station development, although ODOT expects this to be a less common source of match funding.
- **State funds.** ODOT will consider securing state funds to reduce private sector contribution at specific sites or along specific corridors, in order to attract and sustain EVSPs with long-term staying power and alleviate concerns about low utilization of stations in the near term.
- Additionally, while not eligible for non-Federal match, ODOT will consider how best to maximize the value of NEVI funding by combining it with other Federal programs where eligible.

2022 Infrastructure Deployments/Upgrades

For the first year of NEVI funding, ODOT will focus on building out two of the Alternative Fuel Corridors (I-5 and US 97) approved in Rounds 1 – 5 of FHWA's AFC nomination process, as well as one approved as part of the recent Round 6 applications (I-205). These corridors jointly meet many of the considerations ODOT has put forth for the broader deployment strategy.

ODOT anticipates developing approximately 11 stations for the first year of NEVI funding. Several of these sites may be upgrades to existing DCFC stations, while others will entail development of new stations.[6] Details of these stations—as well as nine existing, NEVI-compliant locations—are provided in the table below and the station locations are displayed in the following map.

Table 2: Charging Station Locations in Oregon

State EV Charging Location Unique ID	Route (note AFC)	Location	New (N) or Existing (E)	Anticipated EV Network (if known)	Utility Territories	Anticipated Station Ownership (if known)	Estimated FY22 Funding Amount
I-5.01	**I-5**	Portland	E	Electrify America	PGE	Private	
I-5.02	**I-5**	Portland	E	Electrify America	PGE	Private	

[6] Station upgrades are expected to require less funding than the $800,000 estimate included in this table.

State EV Charging Location Unique ID	Route (note AFC)	Location	New (N) or Existing (E)	Anticipated EV Network (if known)	Utility Territories	Anticipated Station Ownership (if known)	Estimated FY22 Funding Amount
I-5.03	I-5	Tigard	E	Electrify America	PGE	Private	
I-5.04	I-5	Lake Oswego	E	Electrify America	PGE	Private	
I-5.05	I-5	Woodburn	E	Electrify America	PGE	Private	
I-5.06	I-5	Salem	E	Electrify America	PGE	Private	
I-5.07	I-5	Albany	E	Electrify America	Pacific Power	Private	
I-5.08	I-5	Springfield	E	Electrify America	Springfield Utility Board	Private	
I-5.09	I-5	Rice Hill	N		Douglas Elec. Coop.	Private	$800,000
I-5.10	I-5	Sutherlin	E	Electrify America	Pacific Power	Private	
I-5.11	I-5	Canyonville	N		Pacific Power	Private	$800,000
I-5.12	I-5	Grants Pass[+]	E	Electrify America	Pacific Power	Private	
I-5.13	I-5	Ashland	N		City of Ashland Elec. Dept.	Private	$800,000
US 97.01	US 97	Biggs Junction	N		Pacific Power	Private	$800,000
US 97.07	US 97	Shaniko	N		Wasco Elec. Coop.	Private	$800,000
US 97.02	US 97	Madras	E	Electrify America	Pacific Power	Private	
US 97.03	US 97	Bend	E	Electrify America	Pacific Power	Private	
US 97.04	US 97	La Pine	N		Midstate Electric Cooperative	Private	$800,000
US 97.08	US 97	Chemult	N		Midstate Elec. Coop	Private	$800,000
US 97.05	US 97	Chiloquin	N		Pacific Power	Private	$800,000
US 97.06	US 97	Klamath Falls	N		Pacific Power	Private	$800,000
I-205.01	I-205	SE Portland	N/E	Shell Recharge Solutions (Greenlots)	PGE	Private	$800,000
I-205.02	I-205	Gladstone	N/E	Chargepoint	PGE	Private	$800,000

[+]This site does not currently have Federal approval for being NEVI compliant; ODOT is planning to petition for its approval.

Rationale for FY22 Deployment

With the FY22 funding ODOT aims to build out US 97, complete the remaining non-NEVI compliant portion of I-5, and develop I-205.

US 97 is a key route through central Oregon that carries high traffic volumes relative to other rural areas and links to both California and Washington. However, there is currently a lack of DCFC stations to support traffic along the route. Building out this corridor will provide charging options in a part of the state that the private market is unlikely to sufficiently develop independently in the near future. The 2021 TEINA study highlighted the need for additional charging access in rural parts of the state. Representatives of rural areas and EVSPs highlighted US 97 as representing meaningful gaps in charging infrastructure. Additionally, US 97 continues

south as an approved AFC in California, and to the north, Washington is considering proposing US 97 as an AFC.

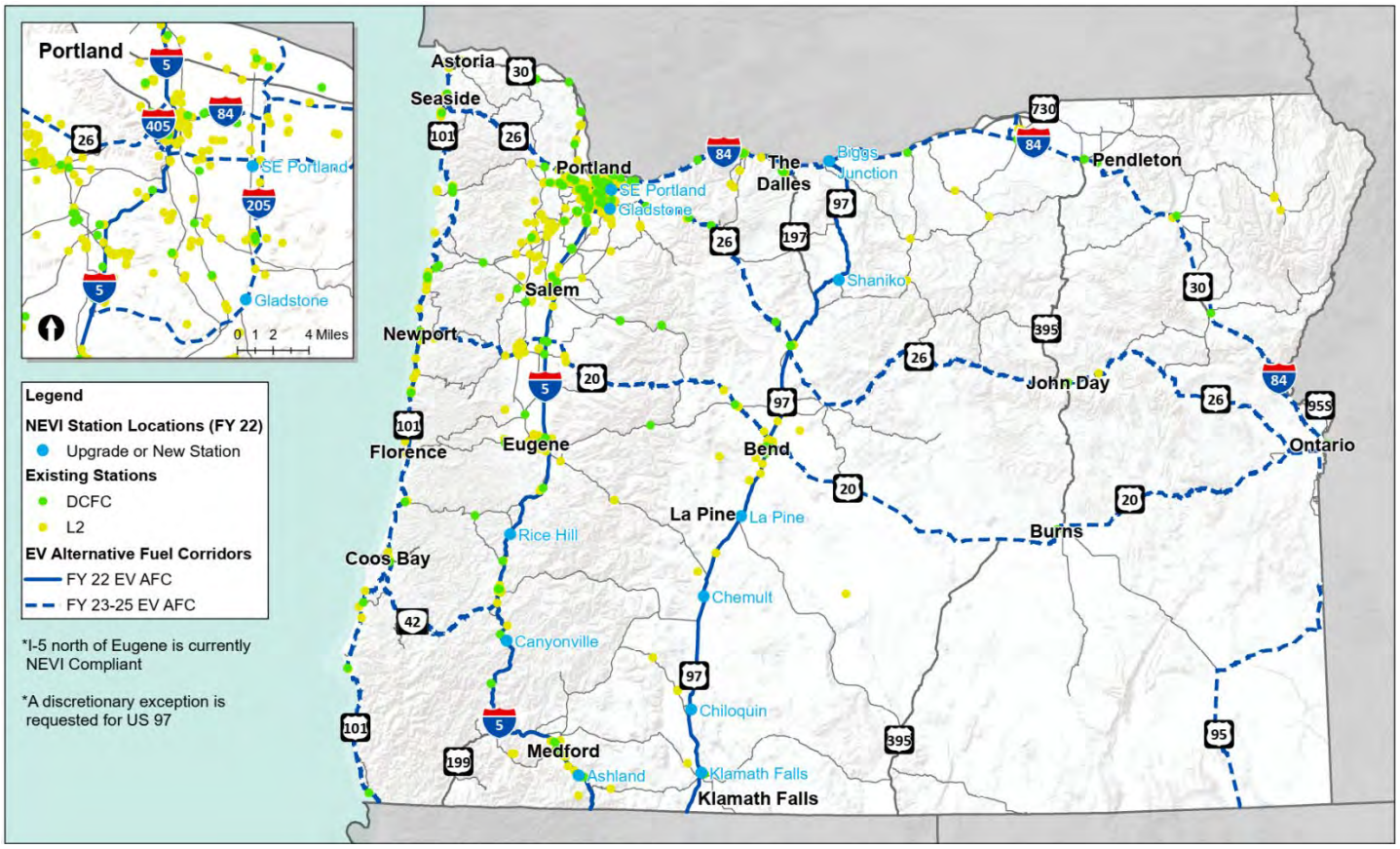
Based on the location of commercial activity along US 97 and anticipated station utilization rates, ODOT is seeking a single discretionary exception on this corridor for the interval between proposed stations in Biggs Junction and Shaniko. The distance is approximately 56 miles. This exception request is detailed further in the **Discretionary Exceptions** chapter.

Developing the southern portion of I-5, from Eugene south to the California border, will provide essential EV charging services along one of the most critical, high-traffic routes in the state. As with US 97, I-5 provides an important link to both California and Washington, and additional DCFC stations along its southern portion will provide a backbone of rapid EV charging that connects the three West Coast states. I-5 is also a strong candidate for development because the northern portion is already NEVI compliant, allowing ODOT to build out the full corridor without requiring new stations every 50 miles along its northern length. Additionally, the southern section of I-5 has several existing, non-NEVI compliant stations that may prove cost-effective to upgrade instead of developing new stations.

ODOT will also direct the development of DCFC stations along I-205 in the Portland metropolitan area, prioritizing this highway given its high traffic volumes and route through numerous DACs. Given its exclusively urban nature, I-205 is also a short route, requiring minimal investment to build out while potentially providing significant benefits given its high traffic. I-205 also connects to Washington state.

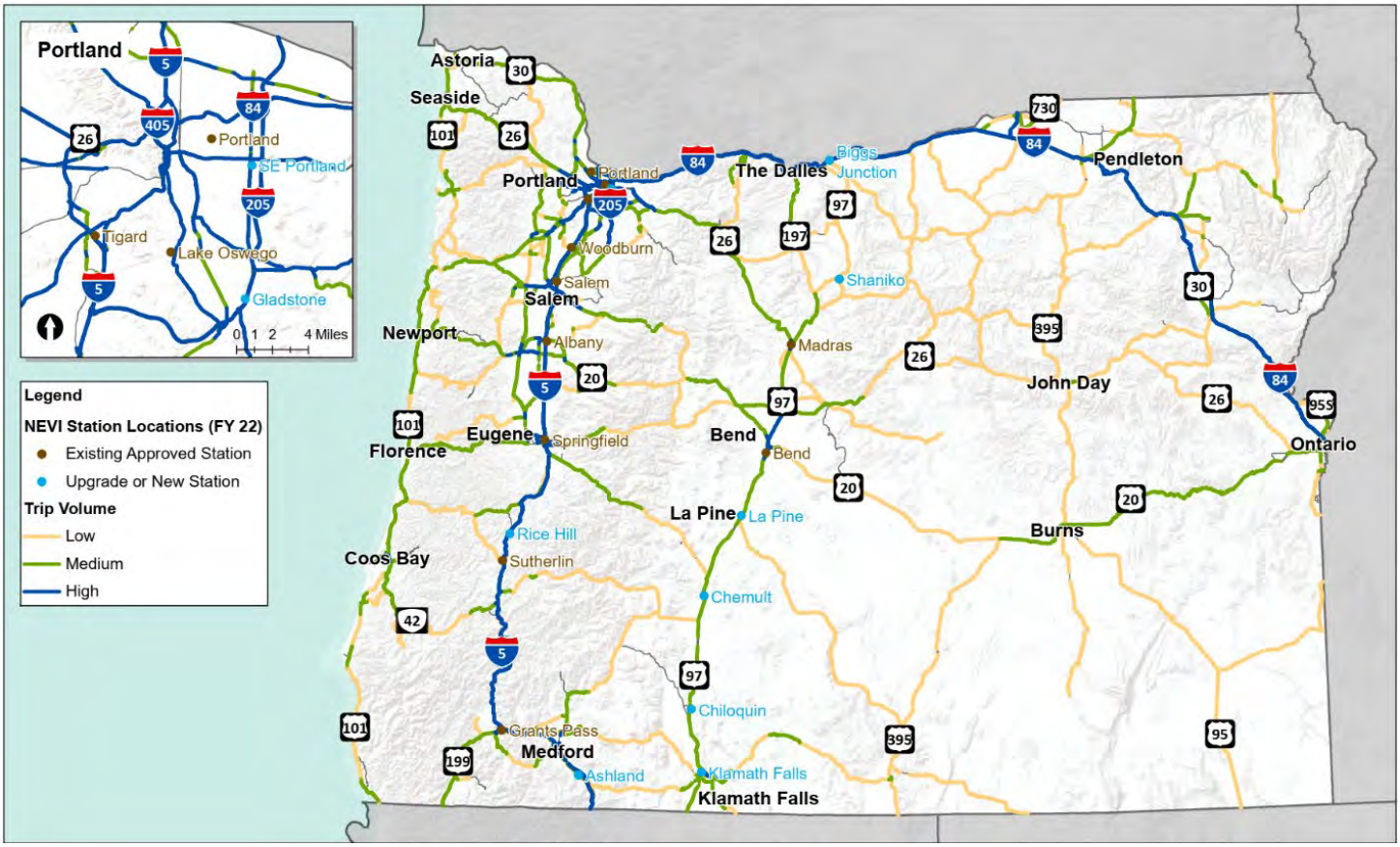
As shown in Figure 24, the majority of existing chargers located along these corridors are L2 (yellow) with some DCFC coverage (green) primarily along I-5. The proposed new or upgraded stations (blue) are situated to fill in DCFC availability gaps on these Alternative Fuel Corridors, while increasing overall charging density on Oregon's major highways.

Figure 24: Existing Level 2 and DCFC Chargers Along Electric Vehicle AFCs



ODOT has also considered the volume of trips at these station locations to ensure that they serve areas with high travel demand. Proposed new and upgraded stations are primarily located on or close to highway segments with high trip volumes that also connect population centers.

Figure 25: Trip Volumes and Proposed FY22 Station Locations



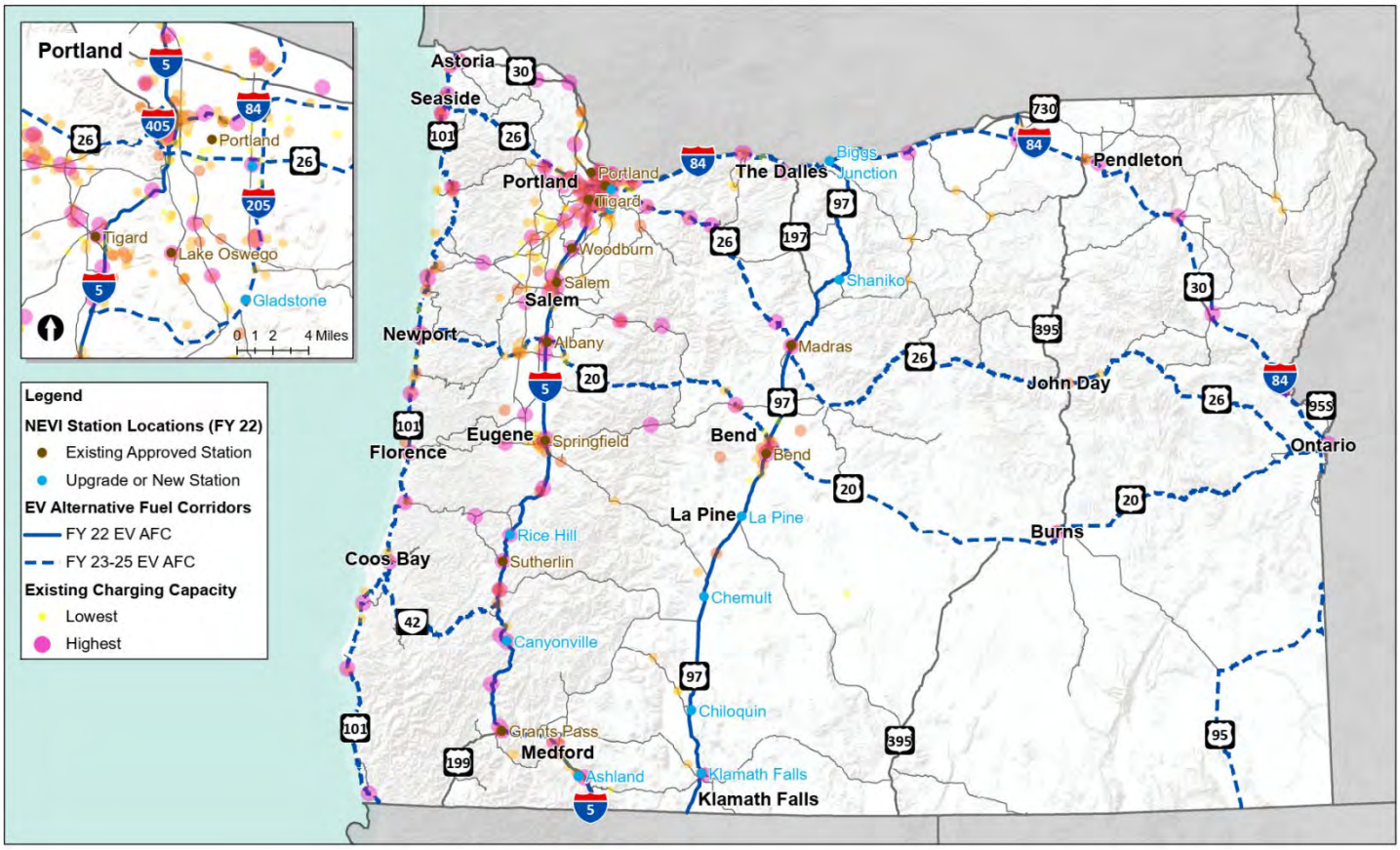
Upgrades of Corridor Pending Designations to Corridor Ready Designations

Please see the map of current and proposed electric Alternative Fuel Corridors (AFC) (Figure 25). The addition of these new DCFC stations using the FY22 funding will make all three corridors compliant with NEVI requirements.

Increases of Capacity/Redundancy along Existing AFC

EV charging in Oregon is concentrated largely in the Portland, Salem, and Bend metropolitan areas. Smaller urban areas on the southern part of I-5 such as Springfield, Albany and Ashland offer interspersed areas of charging access. Aside from Bend, capacity gaps on US 97 are apparent, especially on the southern and northern ends of the corridor. FY22 funding and deployment plans will help to bolster capacity along these routes and will provide much-needed charging along a key rural corridor. This will complete the high-traffic I-5 artery and augment the existing capacity in the state's largest metropolitan area through development of two sites along I-205.

Figure 26: Existing Charging Capacity and Planned NEVI Stations



Analysis of Potential Consumer Demand at NEVI Stations

ODOT estimated demand at these proposed station locations by considering capacity added by each station as well as other available charging capacity within a 25-mile radius of the proposed stations. This estimate leverages AADT data, SWIM model data, potential EV adoption targets, and assumptions around what proportion of electric LDVs in an area would utilize a public DCFC station.

Findings relative to NEVI planning include:

- As EV market share in Oregon grows, EV charging demand as well as number of available charging stations is also expected to increase.
- As anticipated, higher traffic locations will reach higher utilization rates earlier. Lower utilization locations (e.g., those along more rural routes) may initially require operating assistance.
- Locations with abundance of other charging availability will be key in providing much needed DCFC power to complete the available capacity network as EV demand grows. Locations in areas with sparse charging availability will serve both local as well as passing highway traffic, encouraging more EV trips on those routes.
- SWIM data highlighting the relative portion of traffic traveling long distances (50+ miles) highlights that some station locations—especially those in rural areas—may be expected to serve longer trips on average. Other locations—such as those in more urban areas—are more likely to serve local traffic. Trip volume demand on Oregon roads is visualized in Figure 14 (trip volumes).
- Existing stations that have been included within the State Plan are all located in areas of high EV-demand, driven by high population and employment levels as well as the presence of charging infrastructure.

The table below summarizes anticipated charger utilization at proposed FY22 station locations.

Table 3: Charging Locations

State EV Charging Location Unique ID*	AFC	Location	Anticipated Charger Utilization	Location Characteristics	Existing DCFC Ports within 25-mile Radius
I-5.09	I-5	Rice Hill	Moderate	Rural area with little local traffic. Primarily serving long distance highway trips on I-5.	Low: 10 DCFC
I-5.11	I-5	Canyonville	High-Moderate	Rural area with little local traffic. Primarily serving long distance highway trips on I-5.	Low: 15 DCFC
I-5.13	I-5	Ashland	High-Moderate	Small urban area with little highway traffic on I-5. Primarily serving short distance local trips.	Low: 15 DCFC
US 97.01	US 97	Biggs Junction	Moderate	Rural area with no local demand. Serving long distance highway trips on I-84 and US 97	Low: 7 DCFC
US 97.07	US 97	Shaniko*	Low	Rural area with no local traffic. Primarily serving highway traffic on US 97, coming off of I-84 and US 26.	None: 0 DCFC
US 97.04	US 97	La Pine*	Low	Rural area with little highway traffic on US 97. Primarily serving local trips.	None: 0 DCFC
US 97.08	US 97	Chemult*	Low	Rural area with little highway traffic on US 97. Primarily serving local trips.	None: 0 DCFC
US 97.05	US 97	Chiloquin*	Low	Rural area with little highway traffic on US 97. Primarily serving local trips, in close proximity to a National Park.	None: 0 DCFC
US 97.06	US 97	Klamath Falls	Moderate	Small urban area with little highway traffic on US 97. Primarily serving local trips, in close proximity to a National Park.	Low: 12 DCFC
I-205.01	I-205	SE Portland	High-Moderate	Dense urban area with majority local, short-distance traffic.	High-moderate: 150+ DCFC
I-205.02	I-205	Gladstone	High-Moderate	Dense urban area with majority local, short-distance traffic.	High-moderate: 150+ DCFC

* Low anticipated utilization can be attributed to low overall traffic at these locations. However, these are essential to ensuring the complete build out of US 97. Employing the TEINA study assumptions and accounting for the exponential growth of the electric light duty market up to 2035, the charger utilization numbers at these locations are anticipated to grow accordingly and reach Moderate and High-Moderate levels by 2030.

FY23-26 Infrastructure Deployments

ODOT anticipates building out the remaining electric AFCs approved in Rounds 1 – 5 using funding from FY23 and FY24, reserving funds beyond that for recently approved AFCs (Round 6), capacity redundancy improvements, and potentially other public roads to be proposed in future rounds of AFC nominations. Beyond the proposed deployments using FY22 funding, ODOT has determined approximate, potential locations for new or upgraded DCFC stations along the other electric AFCs, in the interest of estimating project costs to inform its multi-year strategy and corridor prioritization. ODOT will continue to refine its analyses of these routes, including incorporating additional local community input on siting locations as deployment nears. Feedback received through Regional Workshops will be an important component of this planning process.

FY23 Deployment

With FY23 funding ODOT will prioritize east-west routes, given that its FY22 approach predominantly focuses on north-south corridors. Additionally, since FY23 funding will become available along with FY22 funding, ODOT may move forward with development of these routes in parallel with, or shortly following the FY22

corridors detailed above, or it may choose to continue to pursue build out a full year later, to benefit from lessons learned in the first year contracting efforts.

FY23 funding will be used to build out I-84. This is the highest-traffic east-west route in Oregon, linking the Portland metropolitan area to Idaho along the Columbia River Gorge. It also has a large proportion of long-distance VMT compared to other Alternative Fuel Corridors. Additionally, relative to other east-west routes I-84 has a large density of DAC populations, making it an important corridor to develop from an equity perspective.

ODOT plans to build out I-82 simultaneously given its proximity to I-84 and potential for shared infrastructure at their junction. This route also provides an important link to Washington, promoting interstate connectivity and linking to the high-traffic I-84. Additionally, I-82 will be a relatively low-cost corridor to complete given its short length, making it a good candidate for inclusion along with longer routes aligned with ODOT's approach to (where possible) developing entire corridors within a given fiscal year's funding allocation.

ODOT will also develop US 20 using FY23 funding to provide an east-west rural route through Central Oregon, similar to how FY22 funding will be used to develop a central, north-south rural route (US 97). US 20 is an important link to Idaho and exhibits higher traffic volumes in Eastern Oregon than neighboring US 26 (east of Bend, US 26 has approximately half of the AADT that US 20 exhibits in that part of the state).

FY24 Deployment

Using FY24 funding ODOT aims to complete the remainder of the seven EV AFCs approved in Rounds 1 - 5, providing additional central Oregon coverage through development of US 26 as well as bolstering the existing DCFC infrastructure along the coastal US 101. ODOT will balance these more rural corridors by building out I-405 in the Portland metropolitan area, which has high traffic volumes and a relatively large DAC population.

US 26 provides an important link to Idaho in the rural, central part of Oregon. ODOT plans to prioritize the neighboring US 20 over US 26 in FY23; we expect that additional, NEVI-compliant public DCFC will be developed along US 26 in the next year or two, separate from the NEVI funding. In its Cycle 2 and Cycle 3 National ZEV Investment Plan, Electrify America indicated that additional stations would be built along US 26 (and US 101); typically Electrify America stations meet NEVI guidance. ODOT believes there may be a cost-saving opportunity in waiting to build out the US 26 corridor to allow for private sector investment in stations that meet NEVI standards, enabling the use of NEVI funds for other charging locations.

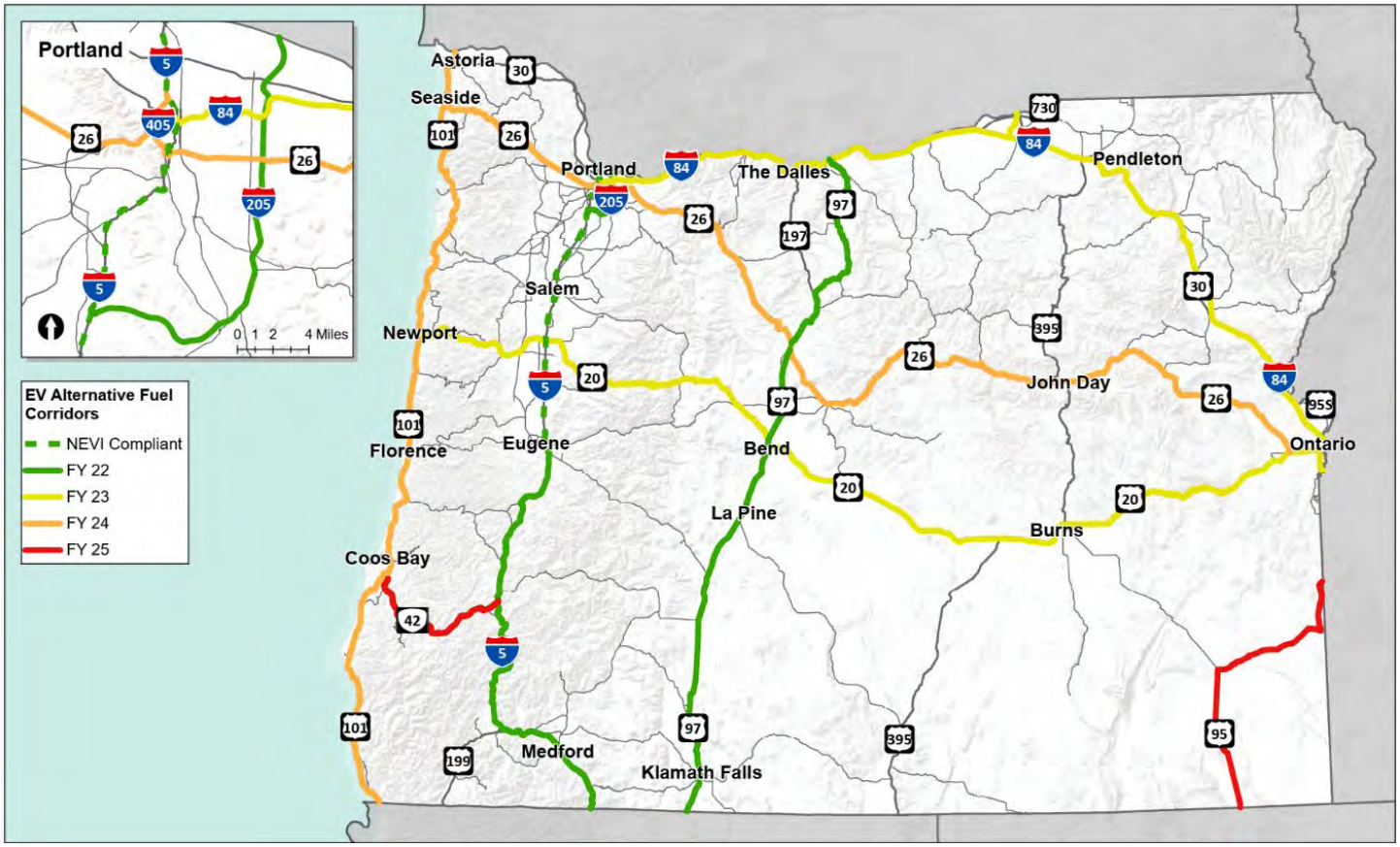
US 101 is an important north-south route along Oregon's coast, which also links California to Washington. While US 101 receives substantial tourist traffic, ODOT is prioritizing the much higher-traffic, inland I-5 for full build out with earlier fiscal year funding. Additionally, there is a smaller proportion of long-distance trips on US 101 than on some other routes. There may also be incremental NEVI-compliant DCFC built along this route through Electrify America's Cycle 3 plan, potentially providing cost savings if the deployment of NEVI funds occurs in a later year of the program.

I-405 in the Portland metropolitan area will balance these more rural corridors, as it serves high traffic volumes over its largely urban route. As a short route, I-405 also presents a good opportunity for completion alongside two considerably longer corridors like US 101 and US 26. ODOT is considering partnering with others to bring additional funding to the site on I-405, potentially creating an e-mobility hub or multi-modal hub that incorporates a NEVI-compliant station.

FY25-26

With FY25 and FY26 funding, ODOT will complete the remaining EV Alternative Fuel Corridors approved in Round 6 (2022), US 95, and OR 42. ODOT is currently reserving funding for these later years to either develop additional EV AFCs that have yet to be proposed and/or to build redundancy in charging stations along the other AFCs to strengthen the overall network and accommodate increasing EV traffic in the coming years. Other goals may also evolve.

Figure 27: Planned Implementation Year for EV AFCs (FY22-FY25)

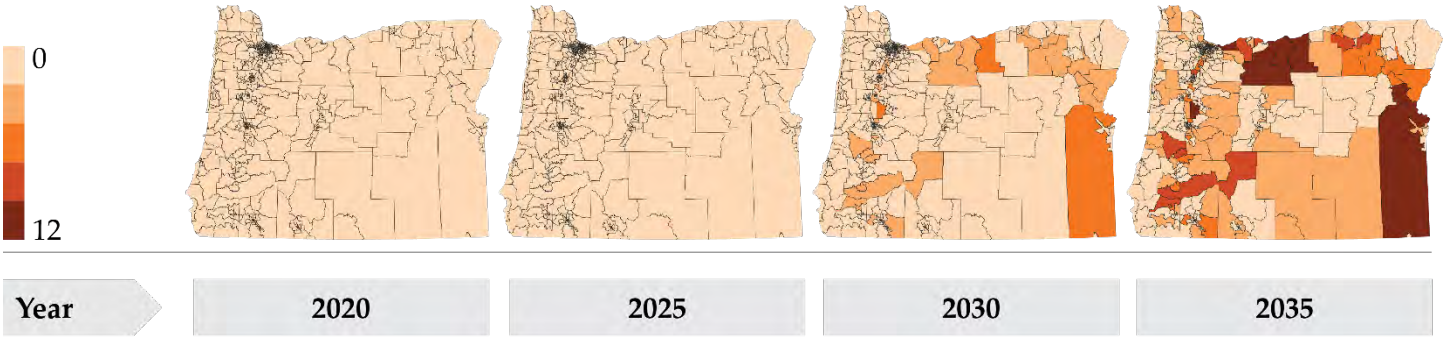


Electric Vehicle Freight Considerations

In the initial years of NEVI program implementation, ODOT will focus primarily on LDV charging infrastructure to support anticipated growth in the electric passenger vehicle market. However, recognizing the importance of developing EVSE for larger and heavier EVs (as analyzed and discussed extensively in the TEINA study), the planned infrastructure build out is also expected to support medium-duty vehicle traffic.

Existing and proposed AFCs in Oregon are also important strategic freight corridors, including I-5, US 97, US 20, and I-84. I-5 is a prime rail and highway freight corridor, with domestic trade movements between California, Oregon, and Washington along the route expected to more than double by 2030. Additionally, the M-5 marine highway runs parallel to the Oregon coast, providing additional freight linkages through US 101, I-5, and US 26. As demand for medium- and heavy-duty EV charging grows throughout the decade (see, for example, anticipated long-haul trucking charging needs over time, from TEINA, below) ODOT will explore using Section 11401 and/or other stackable, competitive grant funding opportunities to support both medium- and heavy-duty EVs along key corridors.

Figure 28: DCFC Charging Ports Needed in Long-Haul Trucking Use Case

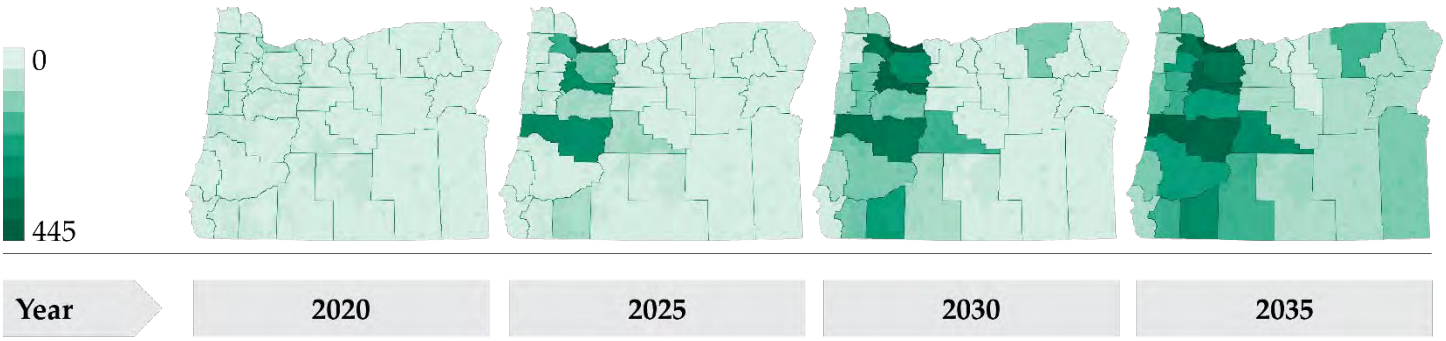


Public Transportation Considerations

As with freight considerations, electrified public transit will be an important part of Oregon's future transportation system; however, these are not the focus of the initial NEVI funding (see **Existing Conditions** chapter for discussion of current routes).

ODOT explored transit bus electrification in the recent TEINA study, estimating DCFC charging needs over time (Figure). However, it is anticipated that the majority of public transit charging will take place at transit agency-owned depots, as well as through limited on-route chargers. As described above, ODOT is considering pursuing additional partners and funding to explore the development of an e-mobility hub or multi-modal hub that incorporates a NEVI-compliant station along I-405 in Portland.

Figure 29: DCFC Charging Ports Needed in Transit Bus Use Case



State, Regional, and Local Policy

Barriers and Challenges

Streamlined deployment of DCFC in Oregon will require overcoming a variety of policy barriers. Zoning, permitting, and general knowledge about DCFC stations pose a challenge in many jurisdictions, and can make it difficult to quickly scale up EV infrastructure deployment. Many processes are jurisdiction-specific and not geared towards these types of infrastructure developments, given the nascency of the industry. Other barriers, such as development timelines, supply chain constraints, and costs, are discussed earlier in the **Known Risks and Challenges** section of the previous chapter.

Overcoming Hurdles and Working with Local Jurisdictions

ODOT will continue to work with local agencies and municipalities to streamline permitting and related issues and ensure that public DCFC (and other EVSE) are deployed where and when needed to meet the State's EV adoption goals. ODOT and the Zero Emission Vehicle Interagency Working Group (ZEVIWG), as well as the non-profit Forth, are currently working on guidance documents on these topics, with the intent of disseminating information and best practices.

In Regional Workshops to be held in the lead-up to build out of each AFC, ODOT will focus on both education and best practices. Statewide efforts on EVs and EV infrastructure deployment education, awareness and outreach are being publicized through the Oregon Department of Energy's website goelectric.oregon.gov (recently updated through a public input process). Numerous state agencies and other public and private partners contribute information to a joint effort to amplify and publicize key EV and charging infrastructure information statewide through a newly-designed website, Oregoin' Electric. The Oregoin' Electric initiative was developed through a P3, the EV Collaborative, leveraging a website originally developed by investor-owned electric utilities, using funds from the Clean Fuels Program.

Additionally, state policies are helping to support transportation electrification, including:

- DEQ Clean Fuels Program
- DEQ Climate Protection Program
- DEQ Clean Vehicle Rebate Program
- DEQ Low Emission and Zero Emission Vehicle Programs including the Advanced Clean Truck (ACT) rule
- DEQ grant programs such as the Diesel Emission Mitigation grant, the Diesel Emission Reduction Act grant, and the Congestion Mitigation for Air Quality funding opportunity
- Public Utilities Commission support for transportation electrification programs
- ODOE data, analyses, and efforts to enhance resilience
- ODOT analyses and development of publicly-funded EV charging infrastructure

Refer to the **State Agency Coordination** chapter for additional details on specific entities, initiatives, and policies that ODOT and others are collaborating on to support transportation electrification.

Implementation

As described in the **Contracting** chapter, ODOT plans to enter a P3 with one or multiple EVSPs to both develop and operate DCFC stations, building on its experience deploying DCFC for the West Coast Electric Highway (WCEH) through a similar collaboration. With ODOT guidance, EVSP partners will have primary responsibility for implementation of services required to provide EV charging at stations deployed as part of the NEVI program.

In the development stage ODOT will work with EVSP partners to ensure that stations are designed and constructed to promote strong labor, safety, training, and installation standards; promote resiliency; and account for local weather conditions (e.g., snow removal plans). Additionally, EV charging company partners will collaborate with ODOT to build strong community engagement, identify desired benefits, and match community goals with charging opportunities. On an ongoing basis EVSP partners will be required to provide timely and efficient operation and maintenance of charging stations, equipment, and related infrastructureas well as safe and secure data collection and reporting. The following sections describe ODOT's strategy for addressing each of these critical elements, which constitute its public DCFC implementation plan for Oregon's EV AFCs.

As part of separate, ongoing work that builds on our 2021 TEINA report, ODOT is currently developing a phased implementation plan for its broader light-duty EV infrastructure deployment across the state, as an extension of the TEINA study. The infrastructure encompassed in this forthcoming plan includes not only public DCFC stations along AFCs—the focus of the NEVI program—but also workplace Level 2 and public Level 2/DCFC throughout the state. Types of supportive actions that could be undertaken by different key state agencies will be described in this implementation plan for both the near-term (next several years) and medium-term (second half of the decade), intending to address both the immediate and subsequent needs for dramatically increasing the amount of EV charging infrastructure in the state. ODOT aims to release this implementation plan in late 2022. It will complement this NEVI State Plan to ensure that these two highly-related initiatives align and can progress efficiently in support of one another.

Strategies for EVSE Operations & Maintenance

EV adoption has been hampered by the inconsistent reliability of EVSE at public charging stations, some of which remain out of service for days or weeks/months at a time. This highlights the critical importance of ensuring that stations developed through the NEVI program are consistently and continuously monitored and serviced to maintain reliability and resilience, which will promote confidence in the national charging network this program aims to produce.

There are numerous considerations for how to ensure this reliability, some of which relate to upfront development and design choices (e.g., equipment specifications, software protocols and standards, redundancy) and some of which relate to ongoing contractual service requirements (e.g., maximum response times, contingency plans, required service level agreements). The former category is discussed in the **Contracting** chapter; below, the primary contractual service requirements are outlined.

ODOT will select private sector partners with proven track records who have the greatest chance of remaining well-positioned to operate and maintain reliable, resilient DCFC stations. Additionally, ODOT is exploring providing some level of operating support to these partners, especially for stations in low utilization areas.

As part of its P3 RFPs, ODOT will require five-year operations and maintenance contracts from selected vendors, including service level agreements. ODOT is currently evaluating the potential to include performance-based stipulations in its contracting, withholding a portion of payment until reliability requirements are met (on an ongoing basis). Additionally, ODOT has learned from its experience with the WCEH that contingencies must be in place for transfer of ownership and operation. NEVI funded stations are anticipated to remain in operation for up to 10 years (or longer) and contracts are being carefully designed to ensure continued operation and a smooth transition in the event of ownership and/or operational changes.

Ongoing Contractual Service Requirements

EVSPs will be required to provide open access to all EV drivers, regardless of network subscription or membership options the EVSP may choose to offer. ODOT will also require EVSPs to offer convenient, non-exclusive non-preferential payment options, including major credit cards and debit cards, a 24-7 customer service phone line, and mobile payment options. Clear payment and operating instructions will be required along with multilingual access. EVSPs will also be encouraged to employ local labor for both ongoing maintenance and initial construction activities (see additional detail in final section of this chapter)

Reliability Requirements

As outlined in the recent minimum standards guidance released by JOET, charging ports at NEVI-funded stations will need to meet a minimum "uptime" requirement of 97%. While this is reasonable for an individual charging port, at a station level ODOT is exploring requiring a higher reliability standard (e.g., 99% uptime for at least one port). Uptime will be measured based on 24/7/365 access to stations, as these investments are meant to serve as a critical backbone for EV infrastructure. ODOT will use the uptime formula included in § 680.116(b) of the minimum standards proposed rulemaking.

ODOT may also require EVSPs to default to free charging in the event of internet failure to ensure that stations are useful regardless of upstream communication issues. This may prove important during emergencies.

Operating Assistance

Following NEVI guidance, ODOT is considering providing operating assistance for low-utilization station locations to ensure that a comprehensive DCFC network can be built along Oregon's highway corridors, including in areas where charging demand is likely to develop relatively slowly. Details of this arrangement will be determined as RFPs are developed and more specific site locations are proposed by prospective and/or contracted EVSPs. See the **EV Charging Infrastructure Deployment** chapter for a discussion of ODOT's initial analysis of relatively high- and low-demand station locations for FY22 funding.

The CFP operated by the DEQ provides an incentive for EVSPs by awarding monetizable credits to providers of clean transportation fuels. According to Oregon's DEQ, CFP credits are worth, on average, between 8 and 15 cents per kilowatt hour of electricity dispensed for a utility using the statewide grid mix electricity, and 14 – 21 cents per kilowatt hour for a Bonneville Power Authority-served utility due to its lower carbon content. This revenue stream may cover most if not all of the electricity cost and may even become a new source of revenue to the charger owner. When renewable energy is used for EV charging, credit revenues may be even higher.

While the existing Clean Fuels Program provides a significant incentive for charging station operators, DEQ is proposing to allow DCFC stations that are developed through the NEVI program to receive credits at the beginning of a project that could be used to offset additional costs (see overview of Advance Crediting here).

Strategies for Identifying Electric Vehicle Charger Service Providers and Station Owners

Identifying EVSPs

As discussed in the **Contracting** chapter, ODOT will enter a P3 with one or multiple EVSPs to develop and operate DCFC stations along selected Alternative Fuel Corridors. ODOT aims to contract with EVSPs that have proven track records of delivering high-quality, reliable DCFC stations on-time and on-budget, and who have sufficient capital reserves as a backstop.

ODOT recognizes the importance of contracting with EVSPs that can not only develop but also operate these stations. Throughout ODOT's public listening sessions, participants have been clear that finding providers who can continuously and reliably operate stations – rather than having the stations change hands between providers – should be a key criterion. ODOT has also learned from its experience with the WCEH and will focus its NEVI contracting to avoid the subpar customer experience that results from changes in ownership and operation. ODOT is currently engaging with EVSPs and promoting interest in the NEVI program opportunity through several channels, including direct outreach, issuance of surveys, and a focused workshop on the draft State Plan.

EVSP Selection

The EVSP(s) contracted as a partner in the P3 will be identified through a competitive RFP process to identify the provider(s) offering the best value to Oregonians. The RFP selection criteria used to identify EVSPs will highlight the importance of equity considerations, and ODOT will ensure that the selected private partner has the experience, capabilities, and motivation to develop sites in or near disadvantaged communities. This means working directly with these communities to ensure that project planning, development, and implementation consider and are responsive to locally-identified benefits, needs and concerns. Per the minimum standards guidance from JOET, ODOT will select EVSPs who can provide workforce development and training opportunities, including paying union/prevailing wages and ensuring its workforce is certified and/or licensed through accredited EVSE-focused programs.

For both new and existing stations that will be upgraded to meet NEVI requirements, the contracted EVSP(s) will be responsible for identifying site hosts and securing station locations for development or upgrading. ODOT will also collaborate with the EVSPs to ensure that community interests are reflected as much as possible in siting. ODOT is also soliciting input from prospective site hosts through its public engagement efforts and has received responses from 28 parties interested in hosting a DCFC station through its interactive website. This website will be shared with selected EVSPs. ODOT will remain directly involved in approving all proposed station locations to ensure that specific sites align with the strategy described in the **EV Charging Infrastructure Deployment** chapter. For additional detail on recommended site host attributes ODOT will work with EVSP partners to achieve, refer to the Technical Specifications appendix (Attachment C) included as part of the WCEH upgrade RFP, included here in Appendix D: Technical Specs and Requirements for Operations, West Coast Electric Highway Upgrade RFP.

Strategies for EVSE Data Collection & Sharing

ODOT will follow Federal guidance and industry best practices regarding public charging data collection, privacy, and sharing, including regular data reporting on a quarterly and annual basis. As a starting point ODOT will leverage the standards already created for contracted EVSPs through the WCEH upgrade. ODOT will modify this as necessary to comply with the minimum standards outlined by FHWA in the recent proposed rulemaking.

Examples of the types of data collection to be required include:

- kWh usage by site and separately for DCFC ports and any Level 2 EVSE
- Reports on reliability and uptime, at both the station- and charger-level (see **Strategies for EVSE Operations & Maintenance** section above for additional detail)
- Frequency of payment type usage (e.g., mobile app vs. credit card)
- Outage information (time, duration, cause, response time)
- Average cost of electricity, potentially by time-of-use period

In addition to reporting of these and related metrics, ODOT will work with contracted EVSPs to develop a *Community Engagement Outcomes Report* as according to FHWA guidance. This will describe engagement activities and learnings, including specific outreach to and input from DACs and how it informs planning.

Strategies to Address Resilience, Emergency Evacuation, Snow Removal/Seasonal Needs

In a growing EV market, it is important that major highway corridors have sufficient charging capacity to support corridor rescue and recovery efforts in the event of natural disasters, including the increasingly frequent and devastating wildfires occurring throughout the Western U.S. As included in the ODOT Round 4 nomination for AFCs, US 97 and US 26 serve as designated lifeline routes in the event of a Cascadia Subduction Zone earthquake. US 97 is a Tier 1 Lifeline Route and will connect Central Oregon's Redmond Municipal Airport with the most populated areas of the western part of the state's Willamette Valley. US 26 is designated a Tier 3 Lifeline Route and will provide redundancy to increase the capacity of the highway system as the region recovers. The western segment between I-205 (Portland area) and US 101 (Pacific Coast), along with two other east-west highway corridors connecting I–5 and US 101, will allow faster and more reliable access to coastal communities.

Considering Oregon's mountainous areas, stations located along routes that cover high elevations and/or passes are expected to need frequent snow removal and management (e.g., some stations along US-97). Stations located along other routes, such as I–5 and US 101, are not expected to be regularly impacted by snowfall (with some exceptions, such as the section of I–5 north of Grants Pass). Snow removal and management services will be required for EVSPs partnering with ODOT and developing stations in areas with significant levels of snow. Responsibility for management will be explicitly addressed in RFPs and eventual contracts, and failure to provide timely snow removal may result in financial penalties or withholding of NEVI funds.

As in the WCEH RFP (see Appendix D: Technical Specs and Requirements for Operations, West Coast Electric Highway Upgrade RFP for technical specifications from that solicitation), ODOT will require that EVSPs submit a detailed operations and maintenance plan (requiring ODOT approval) demonstrating how they will

ensure station reliability and resilience (e.g., minimum response times, regular inspection and maintenance requirements, expectations re: snow removal and addressing other weather-related issues, etc.).

Strategies to Promote Strong Labor, Safety, Training, and Installation Standards

ODOT will contract with reputable firms that have proven track records of success in safety, training, installation, and labor practices. ODOT will require these entities to adhere to the minimum standards articulated by FHWA in its recent, proposed rulemaking.

The NEVI program presents a particularly valuable opportunity with respect to workforce development and can be leveraged to foster DCFC station electrical and construction skills, for which there is a growing need. ODOT will require contracted EVSPs to adhere to the training and certification requirements outlined in the NEVI minimum standards guidance and Oregon state law and will work with these firms to maximize the creation of workforce development opportunities for local communities. Additionally, ODOT may explore using NEVI and/or other Federal funding to directly support workforce development opportunities, such as apprenticeship programs or community college pathways that could support NEVI station development as well as other EVSE deployment. ODOT will also work with contracted EVSPs to channel station development expenditures into local businesses and communities as much as possible in the interest of sharing the benefits of NEVI investments with all Oregonians.

ODOT has begun conversations internally, and also with investor-owned utilities and other organizations, to learn more about efforts all are engaged in to develop an electric transportation and clean energy workforce, including coalitions, the National Governor's Association pilot that Oregon is participating in on pre-apprenticeship and apprenticeship programs, Oregon's recent adoption of S.B. 1545 providing $200 million investment for Future Ready Oregon that will give Oregonians the education, training, and resources they need to secure good-paying careers in key industries across the state, funding at community colleges and with non-profits to support training and skill development for an equitable, diverse, and trained EV and charging infrastructure workforce, to begin a dialogue on ways to leverage efforts. For example:

- ODOT is currently supporting workforce development with Surface Transportation funds, and is working with the National Governor's Association Center for Best Practices and three other states in a pilot program to use funds from the Infrastructure Investment and Jobs Act to scale pre-apprenticeship and apprenticeship programs, incorporating Oregon's aim to leverage Federal investments in broadband access and electric vehicle adoption.

- Pacific Power is supporting a Klamath Community College program for workforce training on EV systems and infrastructure support; additionally, the utility is supporting the Blueprint Foundation to provide EV-related hands-on learning for future black and indigenous professionals and their communities related to EVs and EV charging infrastructure.

- In 2022, Portland General Electric, in coordination with the Governor's Office, launched a statewide coalition with a diverse group of stakeholders statewide to build an equitable and inclusive workforce pipeline to meet the needs of the changing clean energy electric sector; an Electric Transportation subcommittee is part of the coalition's focus, and ODOT aims to participate in this work group. Portland General Electric has offered support to several community colleges for EV and EV charging infrastructure-related programs (Portland Community College - Sylvania's Automotive Service Technology program which hosts the largest automotive program in the Northwest, and similar hands-on training programs at

Clackamas Community College, and Mt. Hood Community College). PGE is also supporting the non-profit Oregon Environmental Council's partnership with local auto service industry members to provide training and access to EVs through exposure via loaner cars, infrastructure development, and education. PGE is developing in-house infrastructure trainings and certifications in consultation with IBEW 125 and IBEW 48 as well as undertaken a statewide transportation electrification workforce needs assessment.

- ODOT is a member of the Columbia Willamette Clean Cities (CWCC) coalition, which supports training for maintenance and repair of several types of alternate fuel vehicles and fueling stations and demonstrates best practices through webinars; ODOT will explore ways to leverage CWCC coalition efforts in workforce development for EV charging infrastructure installations. Additionally, ODOT has begun conversations with IBEW Local 48, to better understand electrical contractor licensing requirements and apprenticeship opportunities in Oregon (for union and non-union electricians), and to explore the EVITP program offerings available to both union and non-union electricians in Oregon. We will continue these discussions to better identify needs and opportunities for collaboration on workforce development initiatives.

Strategies for Prioritizing U.S.-made EVSE

ODOT will comply with all relevant requirements and regulations from the Build America, Buy America (BABA) Act and other legislation regarding sourcing of EVSE and other materials. ODOT anticipates that the newly created Made in America Office (MIAO) of the Office of Management and Budget will be a key partner in promulgating additional guidance and information on these topics

Based on discussions ODOT has had with EVSPs and other industry stakeholders, it is anticipated that some of the BABA requirements may be challenging to comply with, in the near term, due to both supply chain and domestic manufacturing constraints. Oregon will not be the only state to deal with these issues, and ODOT looks forward to working with the MIAO to ensure that its State Plan and that of other states can be implemented in a timely fashion, with any necessary exceptions are well understood, documented, and approved by the Federal government.

Civil Rights

ODOT will stipulate within its contracting requirements that all components of the NEVI State Plan implementation will follow Federal, state, and local laws, regulations, and statutes to ensure compliance with the Americans with Disabilities Act (ADA), Title VI of the Civil Rights Act of 1964, and Section 504 of the Rehabilitation Act.

The ADA prohibits discrimination against persons with qualified disabilities regarding the usability and/or participation of all programs, services, activities, or benefits offered by ODOT. To address EV charging-specific considerations for ADA compliance, ODOT has been working on guidance for ADA accessibility of EV charging installations over several years. ODOT has developed draft guidelines that provide recommendations for how to determine the requisite number of accessible EV charging spaces, accessible routes between spaces, minimum dimensions, and the interaction between accessible parking spaces and accessible EV charging stations. Building on these draft guidelines, future guidance from JOET, and in accordance with the ADA, ODOT will ensure ADA compliance.

ODOT will also ensure that no person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or otherwise be subjected to discrimination under any program or activity, including the NEVI program. ODOT will comply with all Title VI requirements in its implementation of the NEVI program.

Equity Considerations

ODOT is committed to providing equitable charging access for all Oregonians. The inclusion of Justice40 requirements in NEVI reinforces the work and commitments the state has already made. For example:

- ODOT's recently published TEINA study explicitly included disadvantaged communities as one of its nine use cases to evaluate, laying the foundation for future programs to provide charging for these communities.[7] By 2025, TEINA estimates that 100 additional DCFC ports will be required in DACs to put Oregon on track towards providing the same per capita charging access as non-DACs by 2035.
- In 2021, ODOT developed a Statewide Equity Index, using American Community Survey data on age, race/ethnicity, ability, income and language, to map disparity in Oregon. ODOT divisions use the map to apply a social equity lens to ODOT investments.
- ODOT's soon to be released Level 2 EV Charging rebate will reserve approximately 70% of funding for disadvantaged and rural communities.

This chapter describes the current distribution of charging infrastructure relative to disadvantaged communities (DACs), using several different definitions of DACs. This chapter also discusses how ODOT anticipates working with DACs to a) identify which benefits to prioritize, and b) develop a Justice40 framework to measure progress and ensure that the communities ODOT aims to serve receive these priority benefits through the NEVI program and other ODOT equity-focused initiatives.

In addition to the plans described below, ODOT and our colleagues benefitted from many sessions presented at the recent Forth Roadmap conference (held annually in Portland, Oregon), and will follow up with organizations such as the Greenlining Institute, Grid Alternatives, the Blue Green Alliance, EV Hybrid Noire, and others who may have resources and materials to inform identification of benefits, approaches to measurement of benefits, and best practices for equity considerations in EV charging infrastructure deployment.

Current Charging Infrastructure in DACs

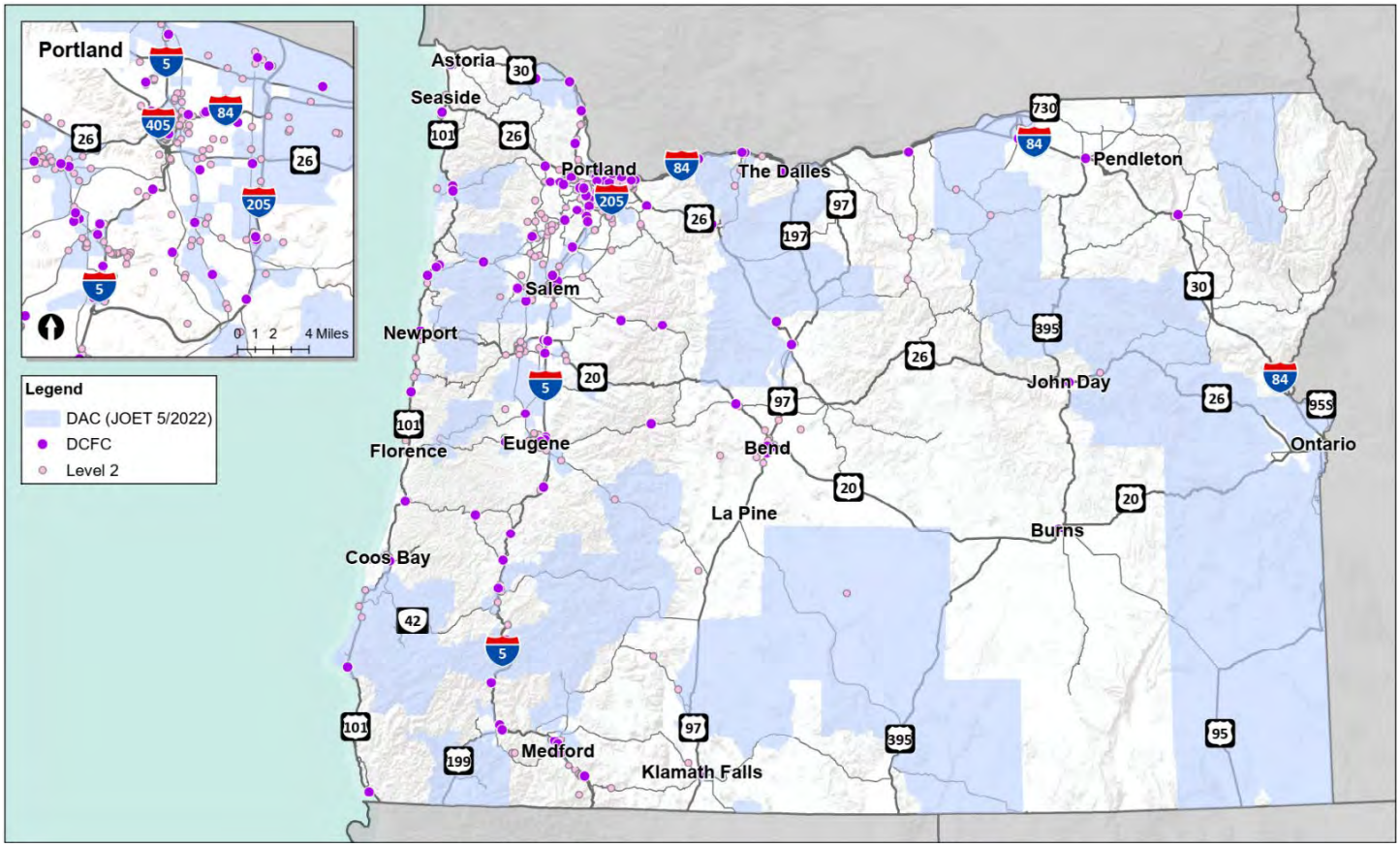
For the purposes of this discussion and an evaluation of the equity of EV charging infrastructure deployment, the following definitions of DACs are used.

- **Joint Office of Energy and Transportation (JOET, USDOT/USDOE):** Consistent with Justice40 guidance, USDOT and USDOE developed a joint definition of DACs which was updated on May 17, 2022. Further information about the criteria is available from the USDOT and USDOE via Argonne National Lab here. **This definition will be used for complying with Justice40 requirements.**
- **ODOT:** As an additional equity lens beyond the official JOET guidance, ODOT is considering Areas of High Disparity identified using ODOT's Statewide Equity Index (see above). This alternate definition complements the JOET-based equity considerations, and could potentially be used, for example, to help decide between two otherwise similar potential station locations. ODOT's DAC definition will not be used for measuring Justice40 benefits; rather we will rely on the JOET definition for measuring benefits.

[7] Note that the DAC definition in TEINA is distinct from that used by the Justice40 initiative; see TEINA study for details.

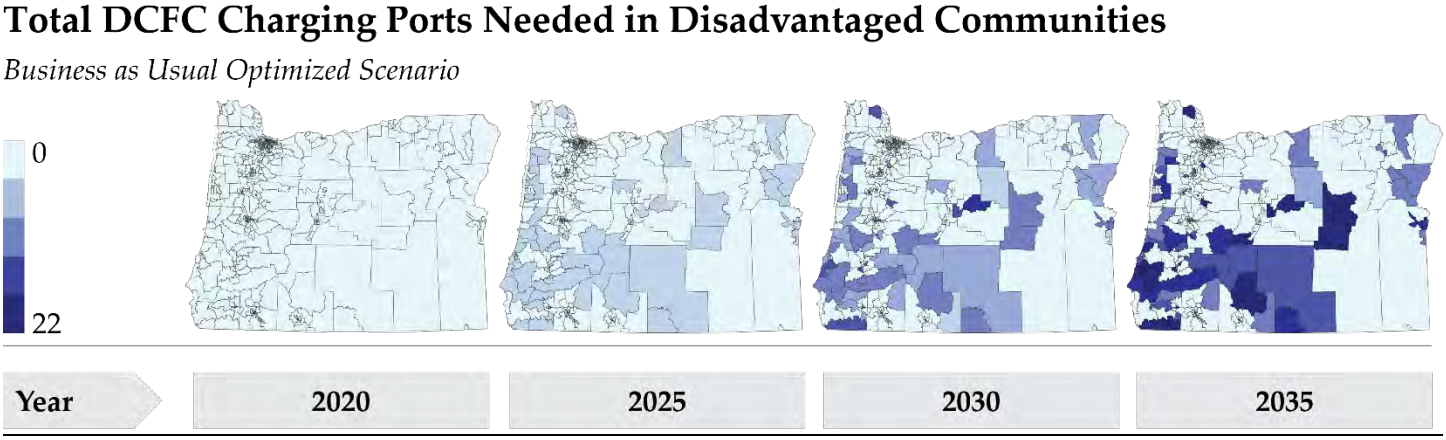
The following map shows DACs (using the JOET definition) with existing public charging station locations in Oregon, including both DCFC and Level 2, highlighting that many DACs are outside of urban areas and currently underserved by charging infrastructure.

Figure 30: Disadvantaged Communities (DAC) in Oregon



The TEINA study found that vehicle registrations in Oregon are currently 26% lower in disadvantaged communities than non-disadvantaged communities and highlighted the large number of incremental charging ports that will be required in DACs across the state, as shown in the following maps highlighting DCFC needs (although other charging power levels are also required; see TEINA study for additional details).

Figure 31: Total DCFC Charging Ports Needed in Disadvantaged Communities



Identification and Outreach to Disadvantaged Communities (DACs) in the State

ODOT is committed to not only providing EV charging access to disadvantaged communities but also to ensuring that the voices and needs of these communities are included in the planning and decision-making process from an early stage. The 2021 TEINA study included a significant stakeholder outreach component, which explicitly included engagement with representatives of historically underserved communities. This engagement is ongoing and has continued as part of the public outreach ODOT has been conducting to solicit input on the State Plan. As part of this DAC-focused engagement, ODOT will develop questions targeted to specific audiences and meeting formats framed around the topics of equity, accessibility, economics and affordability, and geography to obtain meaningful input on potential benefits and burdens. A key engagement channel will be through the Regional Workshops hosted in advance of each Alternative Fuel Corridor build out. DAC outreach and inclusion plans are described in further detail in the **Public Engagement** chapter along with the full Stakeholder Engagement Plan included as Appendix A: Stakeholder Engagement Plan.

Some of the groups engaged in the interest of hearing from a diversity of voices will include Federally recognized tribes, the NAACP, EV Equity, Unite Oregon, and the Asian Pacific American Network of Oregon, among others. ODOT will continue to engage with local communities, including through the Regional Workshops described above. During these engagements ODOT aims to identify which benefits are of highest priority to the communities, and what methods and metrics will help ensure NEVI funding is providing these benefits to DACs.

Process to Identify, Quantify, and Measure Benefits to DACs

ODOT expects many benefits to stem from the deployment of DCFC stations through the NEVI program, not the least of which is increased access to EV charging for more Oregonians. As EV charging becomes more available and convenient, broader swaths of the population will perceive EV ownership to be feasible, spurring EV adoption. Additional benefits include increased investment and workforce development opportunities in disadvantaged communities as well as reduced exposure to transportation-related emissions, which will have significant public health benefits over time.[8]

ODOT is considering these and other potential benefits as we develop the NEVI strategy and considers how to comply with Justice40 requirements. ODOT will identify which NEVI benefits to track after engagement with and feedback from DACs.

Proposed Approach

To ensure that a minimum 40% of benefits from this program accrue to DACs, ODOT will first define the benefits to be tracked, based on priorities communicated through DAC engagement. Then, ODOT will develop

[8] See, for example, a recent report from the American Lung Association on the benefits of transportation electrification, Zeroing in on Healthy Air.

a methodology for estimating these benefits before approving EVSP-selected site locations. ODOT will measure these benefits on an ongoing basis to ensure they are accruing to DACs as intended.

Examples of the metrics and/or methods that may be used to evaluate benefits are included below.[9] These metrics will be tied to the overarching goals of universal access, affordability, reliability, and customer experience, and they will be used to ensure that DACs are truly receiving the benefits afforded by this program. Importantly, for the metrics ODOT and DACs align on to track Justice40 benefit accrual, ODOT will establish a baseline from which to measure progress.

Table 4: Potential Metrics for Evaluating Justice40 Benefit Accrual and Impact

Category	Metrics and/or Data
Direct Impacts	• Proximity of DCFC stations to DACs • DCFC per capita • Reliability and utilization of charging stations • Location of investment • DCFC pricing (EV drivers should be able to charge their vehicles affordably, including if they cannot charge their vehicle at home. Is charging being provided affordably?) • Jobs created (permanent vs. temporary) • Businesses in DACs within a certain proximity of DCFC (increased opportunity for commercial activity before, during, or after charging sessions) • Estimates of reduced tailpipe emissions from charging at NEVI-funded stations (e.g., NO_x, $PM_{2.5}$) • Customer survey results
Indirect Metrics	• Per-capita EV ownership • Level 2 charging per-capita (are DCFC being sited in areas that need it most?) • Transportation energy burden in DACs

[9] Note that there is overlap between these potential metrics of interest for DAC benefit estimation and the potential metrics articulated in the **Program Evaluation** chapter, which may be used to track overall program effectiveness.

Labor and Workforce Considerations

The NEVI program provides an important opportunity for job creation, training, and investment in communities across the country. Through the annual P3 RFPs which will be issued annually, ODOT will ensure that contracted EVSPs responsibly work with local communities to share the workforce development and investment benefits afforded by NEVI funding.

ODOT will require contracted EVSPs to use local workforce, where possible, and support and/or conduct trainings in line with NEVI requirements, including the detailed standards outlined in the recent proposed rulemaking from FHWA (see additional discussion above in the section titled **Strategies to Promote Strong Labor, Safety, Training, and Installation Standards**). ODOT will also ensure that the RFPs issued and EVSPs contracted with adhere to ODOT's diversity, Equal Employment Opportunity, and other policies. ODOT may additionally include criteria in RFPs that reward EVSPs who plan to work with disadvantaged business enterprises (DBEs) and/or other businesses that have the potential to improve equity outcomes if involved in DCFC deployment.

Cybersecurity

Ensuring cybersecurity and integrity of EV charging infrastructure is of paramount importance, with two main areas of concern: 1) securing user physical safety and personal information and 2) protecting operational integrity and connected infrastructure. ODOT will ensure that EVSPs comply with the cybersecurity stipulations in the recent, proposed rulemaking from FHWA.

As included in ODOT's previous contracting efforts such as the West Coast Electric Highway Upgrade RFP, ODOT is committed to ensuring that critical infrastructure transportation technologies of the future, including EV Charging Networks, do not pose a cybersecurity or personal privacy risk to Oregon or the United States. Contracted, third-party EVSPs will own, operate, and maintain the EV charging stations as well as the data produced. They will be required to provide ODOT with anonymized data on a recurring basis. EVSPs will also be required to publish station location, power ratings, and costs to the various sites tracking EV charging stations, including the US Department of Energy Alternative Fuel Data Center. As part of the contract, prior to issuance of the award or other funding, EVSPs will be required to provide a cybersecurity plan that demonstrates the cybersecurity maturity of the recipient and its compliance with applicable Oregon, regulatory, and Federal cybersecurity requirements. The plan must also demonstrate how the recipient will maintain and improve cybersecurity throughout the contract period. This will include maintaining compliance with current and future cybersecurity requirements as well as alerting ODOT and the Cybersecurity and Infrastructure Security Agency (CISA) of any known or suspected network or system compromises. On an annual basis, EVSPs must provide evidence that the cybersecurity plan has been properly implemented.

While charging technology, and the cybersecurity systems that protect them, are evolving quickly there are some foundational cybersecurity principles and techniques that public charging infrastructure should adopt, including the following:

- **Boot Security:** Boot security uses embedded manufacturer approved/authenticated hardware devices to authenticate operating system software when an EV charger is "booted" up. If the operating system at the boot stage is not authenticated, the charger will stop the malicious operating system from loading or making changes to the charger.
- **Secure over-the-air Updates:** Secure methods to update software on deployed chargers should be available such as "over the air updates" or updates that can be issued remotely. When the software components on an EV charger are updated, there should be protections in place to authenticate the software update before the update is accepted and implemented. This mitigates the risk of malicious software being loaded onto a device.
- **Secure Communication:** EV chargers communicate sensitive data to a central system on the cloud for their operation and to offer charging services for the EV drivers. The link between the chargers and this central system must be sufficiently secured to ensure the authenticity, confidentiality, and integrity of the data exchanged. This mitigates the risk of man-in-the-middle attack.
- **Secure Customer Information:** EV chargers may store sensitive data, like personally identifiable information or payment information. This sensitive data should be protected and there are a variety of means to do that. Some options include encryption, role-based access, and limiting the amount of information locally stored on an EV charger.

There are a variety of hardware and software techniques for implementing these four principles and mitigating risks of malicious actors gaining access to public charging infrastructure and information. ODOT will ensure alignment with NEVI requirements as well as coordinate with major Federal and industry EVSE players in setting cybersecurity standards within contracting for the state plan.

Program Evaluation

To evaluate program effectiveness, ODOT will monitor two different categories of metrics—direct impacts and indirect metrics of interest—to be reported on annually in each iteration of the State Plan.

Direct impacts aim to evaluate progress in discrete areas that are influenced by NEVI program funding and implementation. Examples of direct impacts that may be monitored and reported are included in the following table. Parameters of interest across the various direct impact metrics may include, as appropriate, station installation year, AFC, utility service territory, county, site host type, community type (DAC or not), number of ports by power level, total site power, and EVSP network.

Table 5: Potential Direct Impacts Measured for Program Evaluation

Direct Impact	Units	Description
New and upgraded stations/ports	No.	New and upgraded DCFC stations and ports funded through NEVI
Total investment	$	Total capital investments and operating support provided, including NEVI funding and non-Federal match
Average costs	$/station, $/port	Average capital investment and operating support, by station and by port
Energy dispensed	MWh	Total energy provided at NEVI-funded stations, annually
Reliability	%	Percentage uptime (station, overall NEVI-funded network)
Customer satisfaction	Survey responses	Customer satisfaction surveys issued to understand consumer experience and any areas for improvement / issue resolution
Total charging events	No.	Discrete charging events at NEVI-funded stations
Unique visitors	No.	Unique visitors (drivers) to NEVI-funded stations
Electric miles	Mi.	Estimated mileage provided by NEVI-funded infrastructure
Avoided fossil fuel	Gal.	Estimated gasoline and diesel avoided by charging at NEVI-funded stations
GHG reduction	Metric tons CO_2e	Estimated greenhouse gas emissions reduction attributable to charging at NEVI-funded stations
Public engagement events	No.	Events held to solicit input for NEVI-funded station siting, promote the program, or other engagement purposes

Indirect metrics aim to assess progress in related, ancillary areas which are influenced by the NEVI program as well as broader transportation electrification trends and initiatives. Examples of indirect metrics that may also be monitored and reported are included in the table below.

Table 6: Potential Indirect Metrics for Program Evaluation

Indirect Metric	Units	Description
EV registrations	No.	Total light-duty EV registrations in Oregon, by type (BEV, PHEV)
New vs. used EVs	No.	Light-duty EV registrations in Oregon, by year first registered
YoY EV growth	%	Annual growth in light-duty EV registrations in Oregon, by type
Total public charging available	No.	Total publicly-accessible charging ports available, by type and power level

Some of these impact metrics are already being tracked by different agencies or entities in Oregon (see, for example, the ODOE EV Dashboard). ODOT will aim to leverage its own data, as well as that of partner agencies, such as ODOE, DEQ, and OPUC, to develop a robust program evaluation framework that will enable it to track progress and make any necessary changes to its approach to better achieve desired outcomes. ODOT's Climate Office has an existing section that manages performance metrics across its various programs, and this team will be engaged in the development and ongoing tracking of such metrics for the NEVI program. In addition to the JOET, ODOT also envisions working with other stakeholders to develop best practices for tracking performance in the NEVI program, including, for example, AASHTO, NASEO, NESCAUM, Atlas Public Policy, REV West, and the Pacific Coast Collaborative, among others.

ODOT will use these direct impact measurements and indirect metrics to evaluate the effectiveness of its NEVI program implementation on an annual or sub-annual basis. Based on these measures, adjustments may be made to various components of the strategy to ensure that program goals are being met, charging infrastructure is being equitably provided to Oregonians, and funding is being efficiently allocated to achieve the desired outcomes of the NEVI initiative.

Discretionary Exceptions

ODOT is seeking a single discretionary exception for FY22 funding along US 97, specifically for the interval between proposed stations in Biggs Junction and Shaniko. The distance is approximately 56 miles. This requested exception to the 50-mile station interval requirement would enable efficient use of Federal NEVI funding by permitting a single new station—rather than two new stations—to be developed along this highway segment.

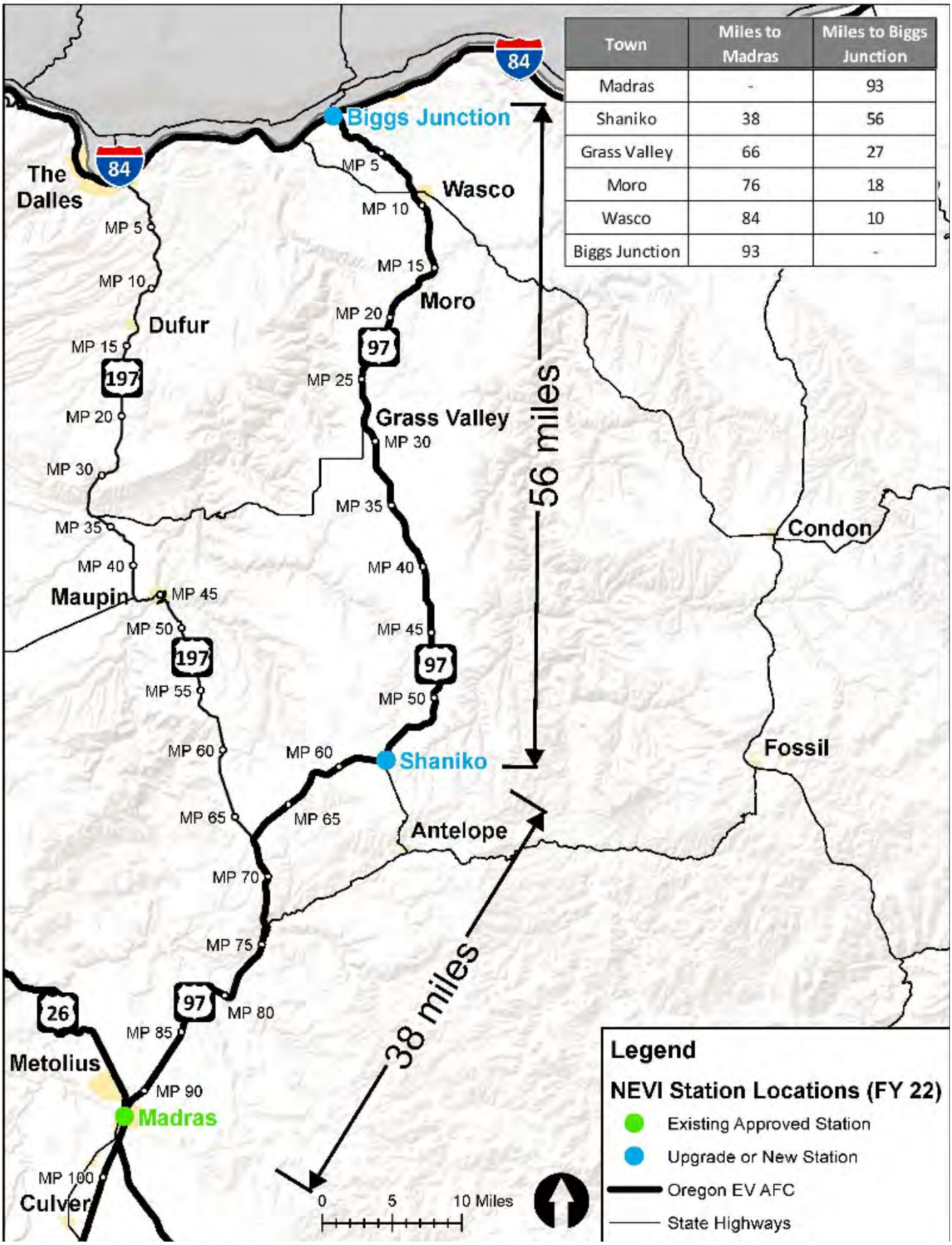
The area in question (see detail map, below) is largely rural, with low traffic counts, thus ODOT anticipates DCFC use in this area during the first few years of the program to remain low relative to more densely populated and/or highly-trafficked segments. At its northern end, this segment of US 97 connects with I-84, another EV Alternative Fuel Corridor, which ODOT intends to build out with DCFC stations using FY23 NEVI funding. A station located at the intersection of US 97 and I-84—oat Biggs Junction—will serve both AFCs and is therefore a logical location to develop.

The total distance between this intersection in Biggs Junction and an existing, NEVI-compliant station in the town of Madras is approximately 93 miles. Accordingly, a single new station developed between these points should be able to connect this segment of US 97 and support EV traffic along that route (especially given the relatively low utilization ODOT anticipates in this area during the initial years of the program). Based on the location of commercial activity in the area, which is relatively sparse given the rural nature of this part of the state, there are several potential options, including (from north to south) Wasco, Moro, Grass Valley, and Shaniko. In the interest of minimizing the deviation from the required 50-mile maximum station interval, ODOT proposes Shaniko as the best candidate location. As shown on the map, Shaniko is slightly further than 50 miles from Biggs Junction (56 miles); however, the other candidate locations are all a greater distance from the other end of the segment, in Madras.

Table 7: ODOT FY22 Requested Discretionary Exceptions

Exception #	Type	Distance of Deviation	Included in Round 6 Alternative Fuel Corridor Nomination	Reason for Exception Request
FY22.01	50 miles apart	6 miles (approx.)	No	Geography

Figure 32: Exceptions Locations Map



Town	Miles to Madras	Miles to Biggs Junction
Madras	-	93
Shaniko	38	56
Grass Valley	66	27
Moro	76	18
Wasco	84	10
Biggs Junction	93	-

Beyond the exception request described above, ODOT anticipates that for FY22 funded sites, there could potentially be additional exceptions required based on grid capacity constraints. ODOT is currently working directly with all utilities whose service territories cover the FY22 EV Alternative Fuel Corridors (I-5, US 97, and I-205) to understand grid capacity conditions near potential sites. However, utilities are uniform in their responses to ODOT's request for information on this point, highlighting that they cannot definitively confirm capacity conditions without knowing precise—rather than approximate—locations for planned DCFC stations. ODOT will continue to evaluate this consideration during RFP development, contracting with EVSPs, and eventual siting decisions.

Deployment plans for future years of funding may also entail discretionary exception requests. ODOT will work with the JOET if and as circumstances requiring additional exceptions are determined through NEVI planning activities and analyses.

Conclusion

This State Plan lays out how ODOT expects to achieve our vision for the NEVI program funding to create a critical backbone network of high-powered EV charging stations along major corridors in Oregon. Successfully executing this vision will significantly increase Oregonians' confidence that EV charging will be as ubiquitous and convenient as fueling with gasoline and is a critical component in achieving the state's ambitious ZEV adoption goals. Oregon is all-in on transportation electrification, and this initial State Plan is a key part of the $100 million investment ODOT is committing to EV charging infrastructure over the next five years.

ODOT intends for this Plan to be a living document, and it already incorporates meaningful feedback from a diverse group of stakeholders. New input will continually be integrated into subsequent, annual updates to this Plan in the interest of aligning ODOT's approach with desired outcomes, with particular focus on providing the benefits of transportation electrification to disadvantaged communities and other historically underserved or overburdened populations across Oregon.

On behalf of the State of Oregon, ODOT looks forward to working with the FHWA, JOET, and other states to begin implementing the NEVI program and sharing the benefits of additional EV charging infrastructure with all Oregonians.

Appendix A: Stakeholder Engagement Plan

Introduction

More EVs on our roads means fewer emissions, healthier communities, and a better future for Oregon and the planet.

As part of the Infrastructure Investment and Jobs Act (IIJA), the National Electric Vehicle Infrastructure (NEVI) Formula Program provides funding for electric vehicle (EV) charging infrastructure to ensure a convenient, reliable, affordable, and equitable charging experience for all users. Under this program, each state is required to submit an EV Infrastructure Deployment Plan (NEVI State Plan) by August 1st that describes how the State intends to use its apportioned NEVI Formula Program funds.

This stakeholder engagement plan summarizes the ODOT outreach efforts undertaken to date to inform the NEVI State Plan. It also outlines ODOT's commitment to an equitable and robust engagement strategy for the next five years of NEVI to implement the NEVI State Plan. Together, these outreach efforts will help inform the equitable and fair distribution of EV charging infrastructure so travelers have the confidence that an EV will get them where they need to go, just like a vehicle powered by gasoline or diesel.

EV Infrastructure Planning and NEVI State Plan Stakeholder Engagement

Oregon's public outreach to identify the state's EV charging infrastructure needs began in 2020 with two ODOT initiatives: the Transportation Electrification Infrastructure Needs Analysis (TEINA) in partnership with Oregon Department of Energy (ODOE) and the Every Mile Counts (EMC) Program in partnership with the Department of Environmental Quality (DEQ), Department of Land Conservation and Development (DLCD) and ODOE. In 2020, Governor Brown directed ODOT to study Oregon's need for greater EV charging infrastructure to meet state EV goals, reduce greenhouse gas emissions and facilitate the state's transition to a wide array of electric transportation modes.

Engaging with a wide range of stakeholders was a key part of the TEINA and EMC efforts. Specifically, TEINA outreach included input from a diverse 17-member Advisory Group (four meetings); 12 Stakeholder Listening sessions; and a web page. Additionally, EMC held two online virtual workshops to have stakeholders share their input on building equity into state agency partnerships and work plans. Twenty-seven individuals from a variety of organizations representing disadvantaged communities, environmental justice, and work at the intersection of equity and climate change participated in these workshops.

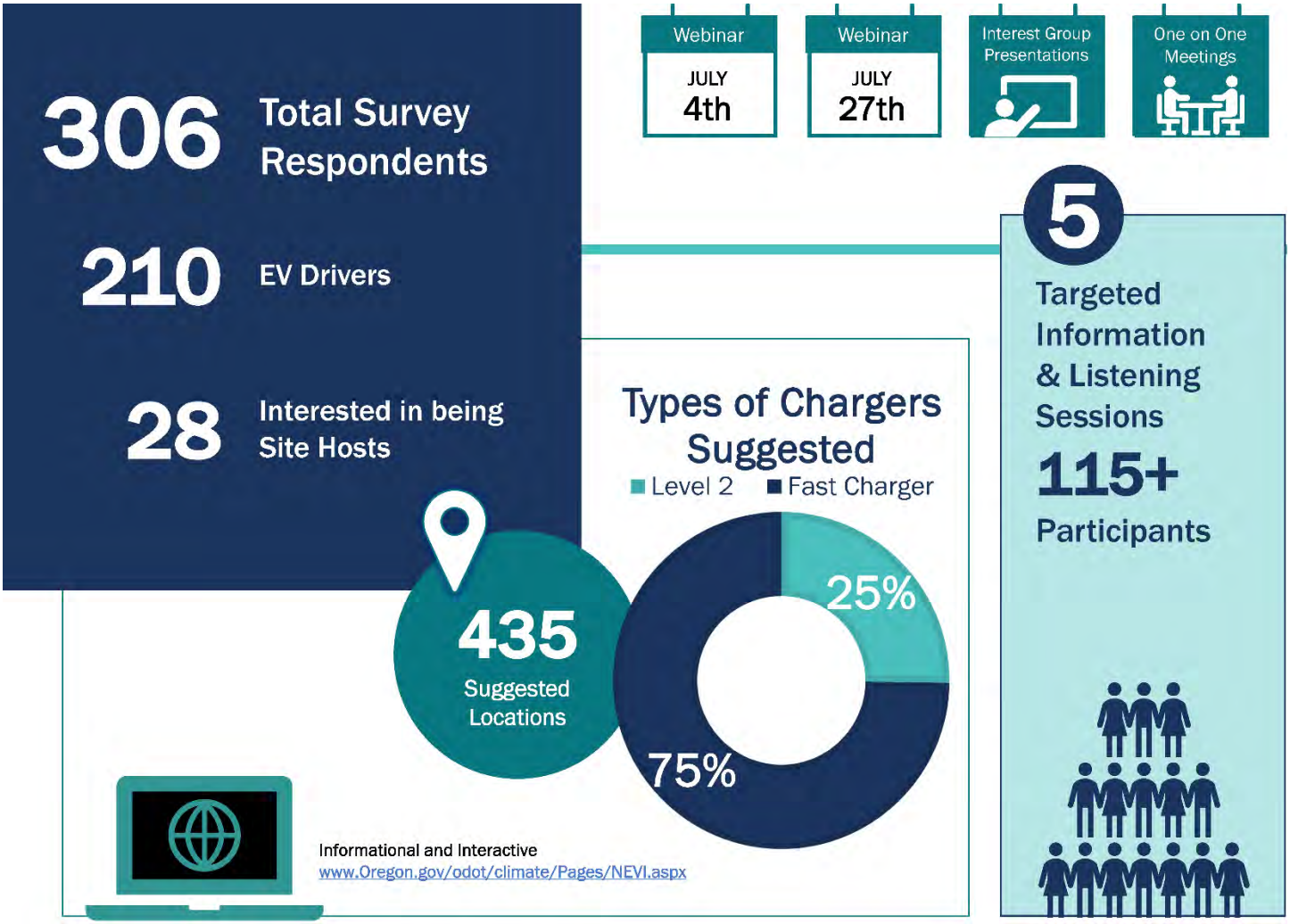
Since the first round of Federal NEVI guidance came out in February 2022, ODOT's goal has been to share information about NEVI and gather feedback from various stakeholder groups including state and local agencies, private sector industries, EV representatives, transportation providers, utility and power companies,

labor organizations, transportation providers, equity focused and environmental advocacy groups, community-based organizations, and the public.

During this time, ODOT has:

- Hosted a public, introductory informational webinar (April 4), with over 250 participants, and a second public webinar (June 27) with over 150 participants to review the State Plan.
  - Over 300 people have responded to the surveys, 2/3 of whom are EV drivers.
  - Nearly 40 cities, communities, companies and organizations have raised their hands to say they are interested in being site hosts for NEVI charging stations.
  - Over 450 potential locations for EV charging have been suggested.
- Engaged in dozens of conversations and presentations with a diverse range of companies, organizations, cities, utilities, and interest groups, including League of Oregon Cities and the Emerald Valley EV Drivers Association.
- Conducted five 90-minute information/listening sessions targeted to EV drivers; cities and counties; utilities; EV service providers (EVSPs); and Environmental, Environmental Justice, other equity and EV advocates. Each information/listening session had 25 to 35 participants.
- Established a NEVI web page that includes detailed FAQs in response to commonly asked questions raised during outreach efforts, background material, and opportunities for the public to share opinions and insights via four surveys (EV Drivers; Non-EV Drivers; EV Charging Site Hosts; Interested in becoming an EV Site Host), and an interactive map allowing the public to identify their preferred locations for EV charging stations.
- Engaged extensively with numerous disciplines within its own agency and partner agencies.

Figure 33: NEVI State Plan Outreach to Date



NEVI State Plan Outreach to Date

NEVI-related stakeholder engagement activities have already revealed valuable information that has influenced and been integrated into the current EV State Plan. Six key themes that have emerged from these stakeholder engagement activities are identified in Figure 33.

Figure 34: Key Themes from NEVI State Plan Outreach

Plan Objectives

The key objectives of the stakeholder engagement plan are as follows:

- Identify and maintain a list of a diverse range of stakeholders recognizing that the distribution of EV charging infrastructure must target locations and benefits to rural areas, underserved and overburdened communities, and disadvantaged communities, including relevant suppliers and contractors.
- Establish a menu of engagement opportunities, with a focus on lowering the barriers to participation to reach disadvantaged communities, so all stakeholders can provide meaningful feedback on NEVI decisions.
- Listen and respond promptly to stakeholders so they understand how their participation has influenced decisions.
- Monitor the effectiveness of the stakeholder engagement activities and revise the process, as necessary.

Outreach will be consistent with:

- Executive Order 14008: Tackling the Energy Crisis at Home and Abroad (2021).
- Interim Justice40 Guidance22. Deliver at least 40% of the overall benefits from Federal investments in climate and clean energy to disadvantaged communities.
- Civil Rights. Compliance with State and Federal civil rights laws, including Title VI of the Civil Rights Act and accompanying USDOT regulations, the American with Disabilities Act, and Section 504 of the Rehabilitation Act.
- Labor and Workforce Considerations. Planning for the training, experience level, and diversity of the workforce that is installing and maintaining EV charging infrastructure.

Stakeholders

Table 1 contains an example list of some of the Oregon stakeholders ODOT expects to engage in the coming months and years, consistent with the stakeholder groups required by Federal guidance issued in February 2022. The information is illustrative and is not an exhaustive listing of all those with whom ODOT will engage over the next five years. It is a starting point. Asterisks identify some of the groups with whom ODOT has already initiated conversations and illustrates the significant amount of work that has already been accomplished.

ODOT understands that the stakeholder engagement process is organic in nature and will evolve as more experience and insights are gained from conversations with stakeholders. Accordingly, a continuously updated list of relevant stakeholder groups and contact information will be maintained.

Table 8: Preliminary List of Oregon Stakeholders

Required NEVI Stakeholder Groups Per FHWA Program Guidance (2/10/22)	**Preliminary Example List of OREGON Stakeholders Representative of the Required NEVI Groups** *Indicates previous participation in EV Infrastructure planning activities
Public	**Public**
Government Entities • Urban and rural communities • Emergency service providers • Department of Motor Vehicles • Commercial Vehicles • State agencies • Metropolitan Planning Organizations • Department of Environmental Quality	**State** • Oregon Department of Transportation* • Oregon Department of Energy* • Oregon Department of Environmental Quality * • Oregon Department of Administrative Services* • Oregon Public Utilities Commission* **Cities** (League of Oregon Cities*) **Counties** (Association of Oregon*) **Metropolitan Planning Organizations**
Utilities and Power Companies • Investor-owned electric utilities (IOUs) • Municipally-owned electric utilities • Electric cooperatives • Electric public utility districts	• PGE (IOU)* • Pacific Power (IOU)* • Idaho Power (IOU)* • Numerous individual utilities represented by Oregon Municipal Electric Utilities Association, Oregon Rural Electric Cooperative Association, Oregon People's Utility District Association, and Consumers Power*
Federally Recognized Tribes	• Confederated Tribes of Warm Springs • Burns Paiute of Harney County • Klamath Tribes • Confederated Tribes of the Coos, Lower Umpqua and Siuslaw Indians • Confederated Tribes of Siletz Confederated Tribes of Grand Ronde • Confederated Tribes of the Umatilla Reservation • Coquille Indian Tribe • Cow Creek Band of Umpqua Indians • Burns Paiute Tribe
Labor Organizations	• IBEW* • Blue Green Alliance*
Interest Groups • Environmental groups • Consumer advocates • Non-profits organizations • Universities	• Climate Solutions* • Bonneville Environmental Foundation* • Oregon Environmental Council* • Verde* • Columbia Willamette Clean Cities* • Oregon League of Conservation Voters* • NW Energy Coalition* • Metro Climate Action Transportation Team* • Bend Environmental Center*

Required NEVI Stakeholder Groups Per FHWA Program Guidance (2/10/22)	Preliminary Example List of OREGON Stakeholders Representative of the Required NEVI Groups *Indicates previous participation in EV Infrastructure planning activities
	• Forth* • Renewable Hydrogen Alliance* • TREC Center* • Oregon State University, University of Oregon*
Equity Focused Groups Minority- and women-based organizations	• Unite Oregon* • League of Women Voters Oregon* • EV Equity* • NAACP* • Asian Pacific American Network of Oregon* • Soul* • Latino Network • Community Alliance of Tenants (CAT)
Private Sector Industry • Gas station owners • Property managers • Chambers of commerce • Small business organizations	• Contracting companies • Apartment Building Owners* • Developers • Oregon Farm Services
EV Representatives • EV service providers • EV equipment manufacturers • EV car dealers • EV drivers	**EV Service Providers** • Electrify America* • ChargePoint * • TTS* • Uconnect • Shell Recharge (formerly Greenlots)* • SemaConnect* • Blink Charging* • EVgo* • EV Charging Solutions* • In Charge Energy / ABB* **Manufacturers/Dealerships** • General Motors* • Volkswagen* • Tesla* • Gladstone Hyundai * **Drivers** • Emerald Valley EV Association* • AAA • Oregon Electric Vehicle Association • Plug in America* • TNC (Uber, Lyft) drivers/owners

Required NEVI Stakeholder Groups Per FHWA Program Guidance (2/10/22)	Preliminary Example List of OREGON Stakeholders Representative of the Required NEVI Groups *Indicates previous participation in EV Infrastructure planning activities

Transportation Providers
• Car share/Transportation network companies
• Taxis
• Rental car companies
• Freight industry
• Transit providers
• Port authorities
	Transit Operators*
	
	Freight
	• Oregon Trucking Association*
	• Freight carriers
	  o Titan Freight Systems
	  o Daimler

Future NEVI Stakeholder Engagement

ODOT will continue to engage with stakeholders over the next five years along each corridor through an inclusive process that facilitates participation by disadvantaged communities, as defined by Justice40. The Justice40 program requires a minimum of 40% of the broad benefits of NEVI funding to flow to disadvantaged communities. Through meaningful engagement with disadvantaged communities, ODOT can identify what benefits matter the most to them, and match those to opportunities. This information will inform future requests for proposals and be shared with utility companies and the selected EV charging companies who will install, operate and maintain the EV infrastructure so they can be a partner in achieving Justice40 goals.

Stakeholder Engagement Tools

ODOT will use a variety of virtual and in-person engagement activities including regional workshops, listening sessions, and guest speaking engagements with an emphasis on disadvantaged communities and others who have not been active participants to date. Each activity will be designed to lower barriers to participation by considering the needs of community members – all ages, abilities, races, cultures and classes. For example, a challenge with certain cultural groups may be a language barrier, while an opportunity within those same cultural groups may be that they have well-established subgroups that meet regularly with interpreters present so a small group listening session may be the most effective. For each activity, ODOT will consider:

- **Equity.** The allocation of resources (in this case, access to electric vehicles/electric vehicle chargers) will differ for all populations to reach similar outcomes. ODOT will develop questions targeted to specific audiences and meeting formats framed around the following topics to obtain meaningful input on potential benefits and burdens.
- **Accessibility** – location, safety, and convenience of charging. For example, ODOT will solicit feedback on issues such as security cameras and lighting for users who may need EV charging at night, what accommodations may be needed for people with disabilities, what is the tolerance for on-street charging infrastructure for those who live in apartments, etc.
- **Economics/Affordability** – investment in and affordability of charging infrastructure in disadvantaged communities. For example, questions will be asked about small business and minority-owned site locations for EV chargers, can local fleets be electrified to reduce costs to consumers, how can local chargers increase local commerce from travelers with EVs, etc.
- **Geography and Environment** – special contextual conditions that will affect EV performance characteristics. For example, questions may be asked related to challenging sections along remote mountain passes with steep topography and winter conditions, health concerns from emissions, how to improve charging experience in more rural/remote areas, etc.

- **Going to the People**. Whenever possible, it is best to meet where people are already gathering and comfortable such as using regional workshops along corridors or attendance at existing community meetings.
- **Authentic engagement**. Finding champions and influencers who can help reach a group in a more effective and authentic way. Not only do they already have personal connections and understand the channels to reach them, but when the message comes from someone within their same group, it is more likely to be well received. This may again lend itself to a small group listening session, speaking engagements or having the trusted champion help administer a survey or post a fact sheet on a local bulletin board.
- **Equitable Engagement Compensation Program**. As part of ODOT's commitment to social equity, this program builds equitable pathways for Oregonians who could not participate because of an unpaid time barrier. Oregonians who participate may be eligible for compensation for their time.
- **Incorporating a balance of virtual and in-person events.** Providing both meeting types to address differing needs such as workhours, childcare concerns, or mobility constraints.

Engagement tools are presented in Table 2. Activities are intended to rotate along the alternative fuel corridors by years of investment, as shown below. Collectively, these tools provide the flexibility needed to meet the diverse needs of individual stakeholder groups and disadvantaged communities.

Table 2: Stakeholder Engagement Tools

Tool	Description Public materials will be translated based on target audience and area demographics.	Estimated Timeframe
Maintain and update ODOT NEVI website	https://www.oregon.gov/odot/climate/Pages/NEVI.aspx Introduction to NEVI NEVI Funding ODOT's Goals Engagement Opportunities Documents/ Links to Resources	Update quarterly
Public Notices	Announce advisory group and public meetings	10 days before event
Fact Sheets	Develop informational fact sheets to announce engagement opportunities and provide contact information. Fact sheets should be formatted for both electronic and print delivery.	Prior to each outreach event
Advertise public events	Use press releases, social media, media interviews, and listserv announcements to communicate public events, posting of new information including comment summaries, and general project updates.	Prior to each outreach event
Comment Summaries	After each public outreach event, comment summaries will be prepared and posted to the NEVI website.	Posted to website within two weeks of each outreach event
Regional Workshops	Engage with stakeholders to inform them about NEVI program funding and ODOT's role. Solicit feedback from corridor stakeholders to learn more about: • Contextual specific needs, challenges, opportunities • What does a successful EV Charging program look like along the corridor and in communities? • How to best address equitable access to charging infrastructure – from planning to installation to operation and for the end users • What are the best ways to implement Justice40 considerations in each community ways to measure benefits? Regional workshops are intended to a local resource specific to corridors and communities.	Along each corridor by year of investment Regional workshops Initial outreach: Two per year in each identified community Follow up outreach: One per year in each identified community
Webinars	Webinars are intended to be a statewide resource to present updates on EV planning and key themes form regional outreach.	Webinars 2 per year
Small Group Information Sessions	Small group sessions and guest speaking engagements are intended to be targeted to voices that have been notably absent: tribes, Justice40 disadvantaged communities, and human service organizations.	Small Group Sessions Initial outreach: Four per year by corridor Follow up outreach: Website, fact sheets, webinar
Guest Speaking Engagements – go to existing meetings		Guest Speaking Initial outreach Initial outreach: Two per year by corridor Follow up outreach: Website, fact sheets, webinar
Surveys Interactive Mapping	Continue the interactive mapping and surveys established for the NEVI plan so new participants can weigh in on charging station locations and provide comments.	On-going. Prepare summary reports quarterly

Implementation Strategies

Outreach efforts will be time intensive and require flexibility. Below are some of the techniques ODOT may use to facilitate these efforts during plan implementation.

- Identify a staff member who will serve as the main contact and primary coordinator to lead the engagement efforts.
- Identify key communities along each corridor for in-person activities.
- Locate ADA accessible meeting venues that are familiar to communities, such as schools and libraries.
- Identify trusted partners that can help with in-person regional workshop coordination and presentations. For example:
  - ODOT Regional Offices
  - Metropolitan Planning Organizations
  - Local EV champions
  - Social service/Non-Profit leaders
  - Tribal representatives
  - Community liaisons/Interpreters
- Develop a "meeting toolkit" that includes a meeting presentation, frequently asked questions and training programs for trusted partners. Materials should incorporate easy to understand language and graphics to facilitate communication.
- Establish a virtual version of the regional meetings to complement the in-person meetings.
- Hold small group sessions and speaking engagements in conjunction with regional workshops whenever feasible, and supplement with virtual sessions.

Monitoring Progress

It is important to measure what matters. ODOT will track the following metrics to continually assess if the outreach program is achieving the desired objectives.

1. **Diverse participation**. After each event, participation will be evaluated to verify target audiences are being reached and what, if any, changes in public notification or engagement tools might be necessary. Example metrics that are expected to be collected include:
   - Number of participants at an event
   - Number of organizations represented at an event
   - Justice40/target audience participation rate in events
   - Geographic distribution of participants/comments
   - Unique visitors to the website
2. **Timely Feedback**. Meeting summaries and documentation regarding how feedback has been incorporated into the decision-making process will be completed in a timely manner.
   - Comment/response summaries posted on the NEVI website within two weeks of each meeting
3. **Justice40 Goals**. Identified benefits and burdens (economic, affordability, geographic, accessibility, environmental) are being solicited and incorporated into EV infrastructure planning.
   - # of responses related to disadvantaged community EV burdens and opportunities
   - Equity benefit language incorporated into requests for proposals

Summary

ODOT is committed to continuing conversations to listen and learn about community EV goals and prioritize desired benefits. The next key steps include going to the communities along the corridor to learn more. This information will inform future requests for proposals and be shared with utility companies and the selected EV charging companies who will install, operate, and maintain the EV infrastructure so they can be a partner in achieving Justice40 goals.

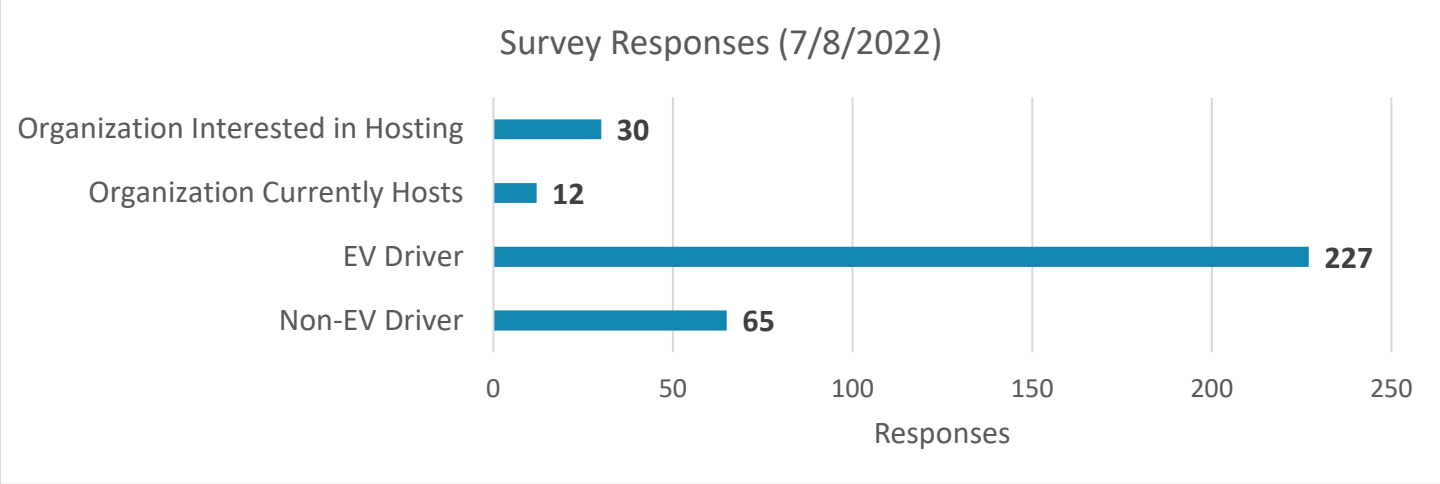
Appendix B: Stakeholder Survey Results

Summary

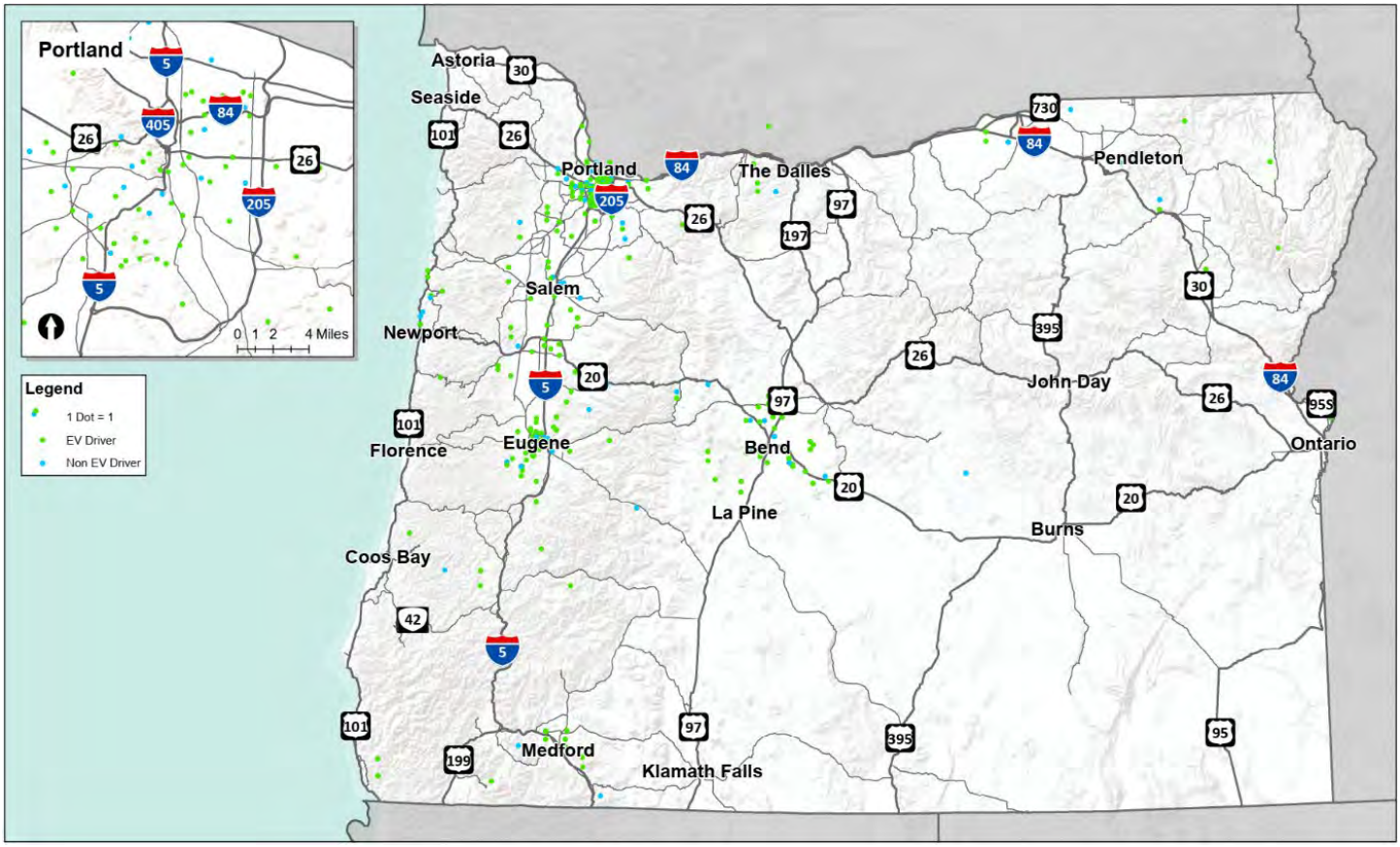
ODOT used two methods to collect survey data.

1. An interactive online map that allowed respondents to suggest locations for installing charging infrastructure throughout the state.
2. Online surveys that allowed respondents to provide feedback on key questions. Four surveys were created for different audiences: EV drivers, non-EV drivers, organizations currently hosting a charging station, and organizations interested in hosting a charging station.

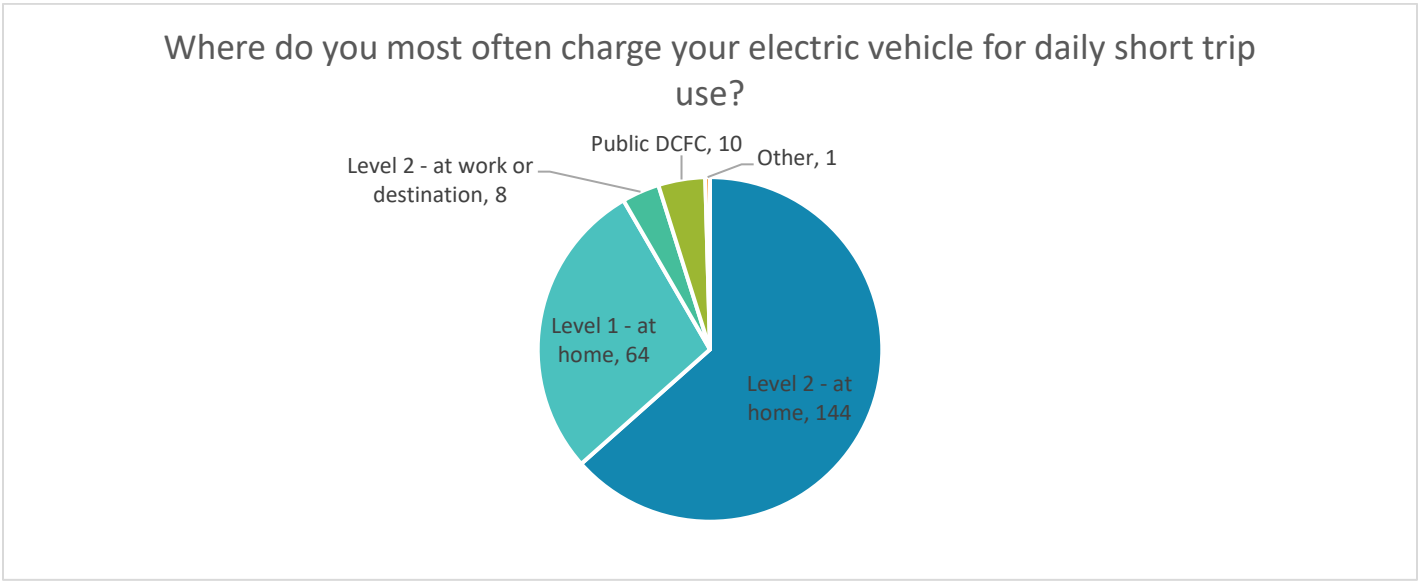
Four targeted surveys were provided to allow community members to respond with their experience and needs related to EV charging infrastructure. The number of survey responses is summarized by respondent type below.

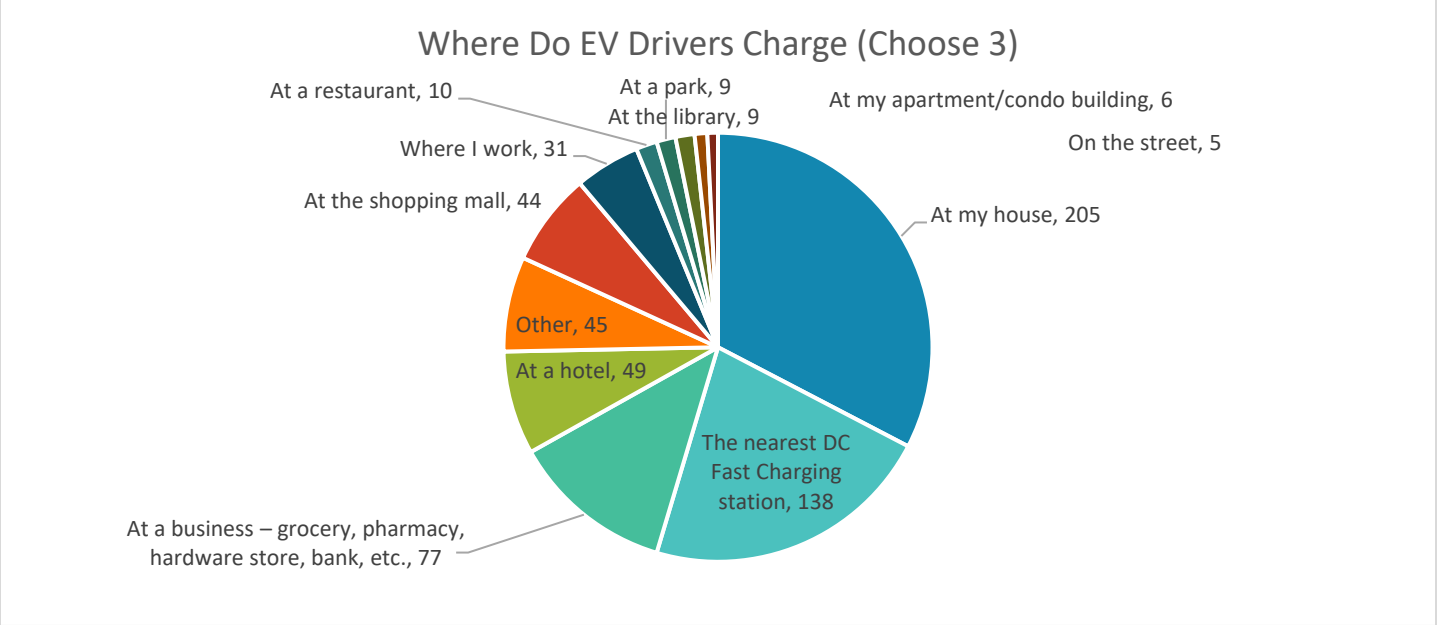


The map below shows the distribution of survey respondents throughout the state (for respondents who provided their home zip code).

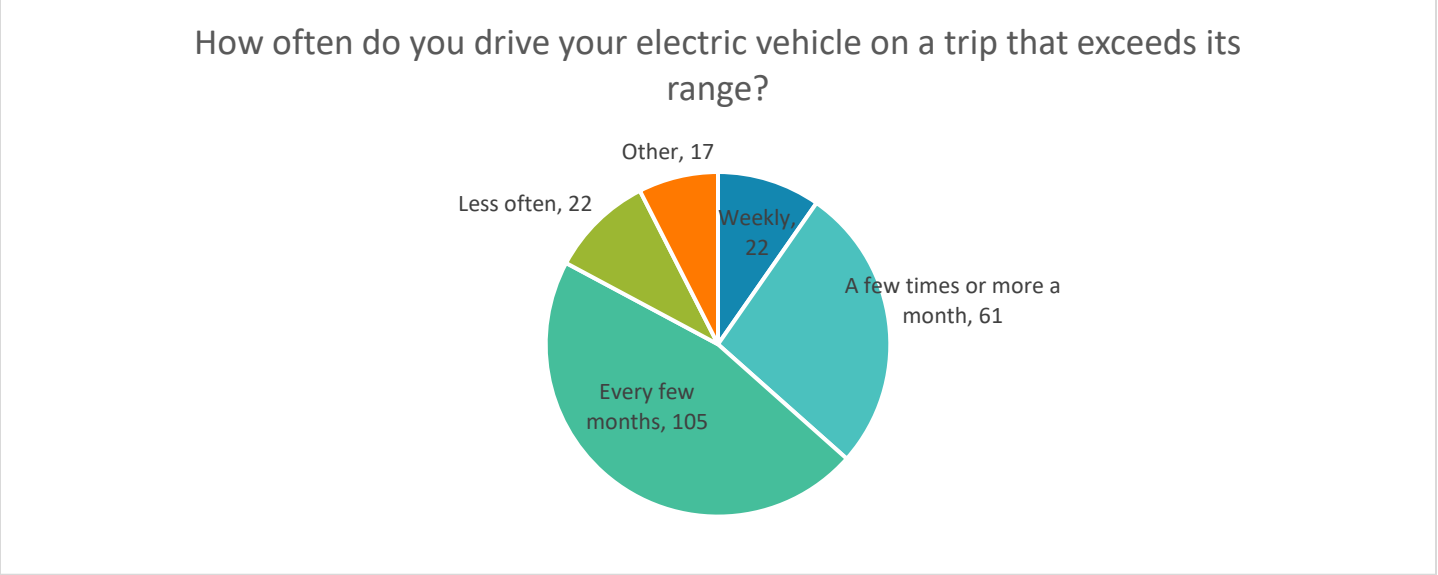


Most of the EV driver survey respondents primarily charge their vehicle at home: 208 of 227 (92%) respondents. EV drivers were also asked to identify the three most common places they charge their vehicles. Other than charging at home, EV drivers commonly charge at nearby fast chargers, chargers at businesses, and chargers at hotels. 31 of 227 respondents (14%) listed their workplace as a common charging location.

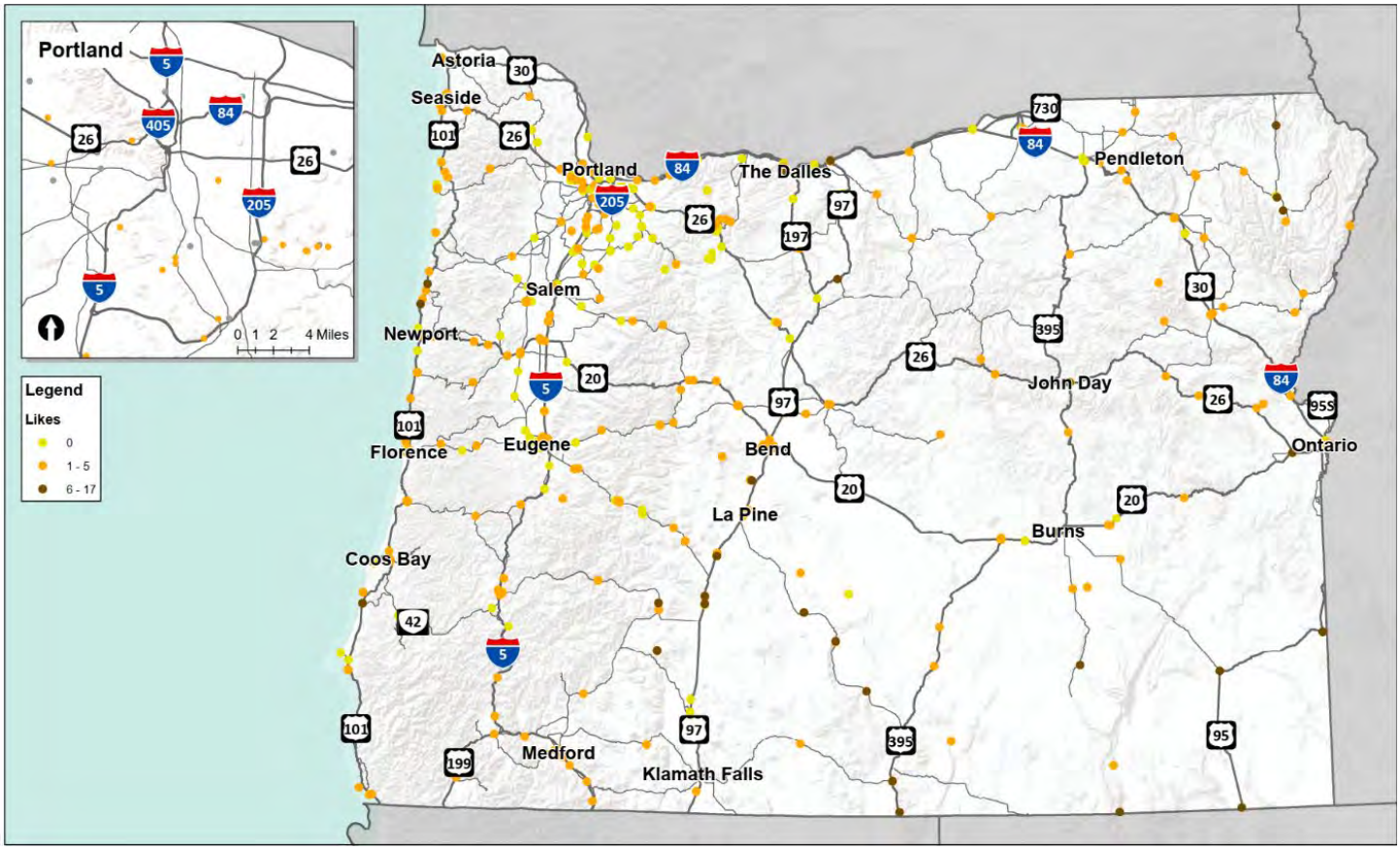




EV drivers typically do not drive their EV on trips exceeding the vehicles range. Two (1%) respondents drive their EV on trips exceeding the vehicle range daily. 203 of 227 (89%) respondents drive their EV on trips exceeding the vehicles range less frequently than weekly.



ODOT used an interactive map to collect suggested locations for EV charging infrastructure from community members. The map below shows the suggested charging station locations throughout the state. Locations with a darker dot were 'up-voted' or 'liked' by more other respondents.



The suggested charging station locations are summarized by Alternative Fuel Corridor in the table below. The most common reason cited by respondents for a particular location was that it was on a highway, however there are a few corridors with other commonly cited reasons such as being near tourist attractions.

Corridor	Existing Charging Locations	Suggested Charging Locations	Most Common Reason	Second Most Common Reason
I-5	230	45	Highways	Other
US-101	55	48	Tourist	Highways
US-20	46	39	Highways	Other
US-26	105	49	Highways	Community Center
US-97	34	24	Highways	Tourist
I-84	97	39	Highways	Restaurant
I-205	38	6	Other	Grocery
US-95	0	3	Highways	-
OR-42	1	2	Tourist	Highways
I-405	68	1	Work	-
I-82	0	0	-	-
Not Along AFC	358	220	Tourist	Highways

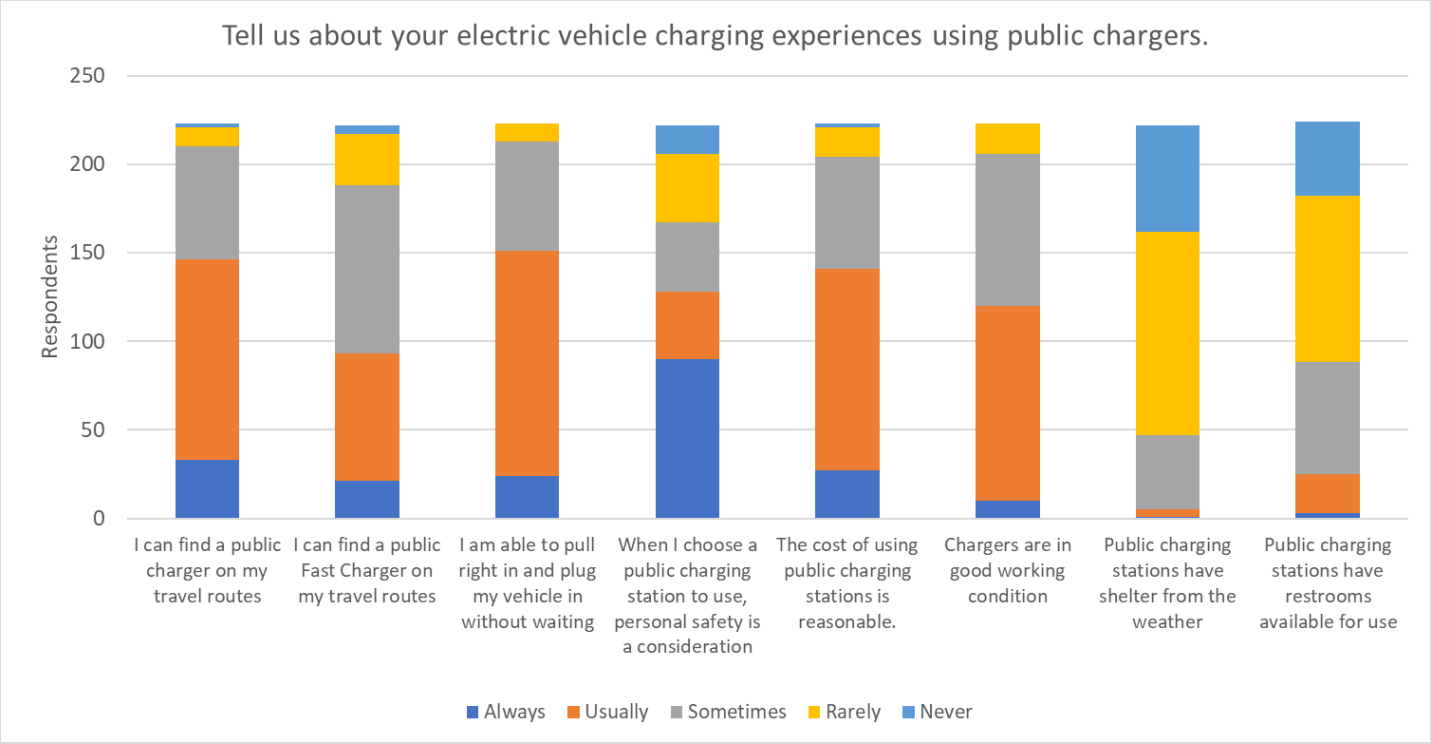
Top Concerns or Questions

25 organizations interested in hosting a charging station responded with their top concerns about hosting a charging station. Organizations are most commonly concerned about the cost of the station and funding availability (15 of 25 respondents). Organizations are also interested in understanding the responsibility for maintenance, distribution of revenue, and timeline for decision making on station location.

Three organizations who currently host charging stations responded with their experience of hosting charging stations. Respondents have had positive experiences with hosting charging stations, although one respondent noted that procurement took longer than expected.

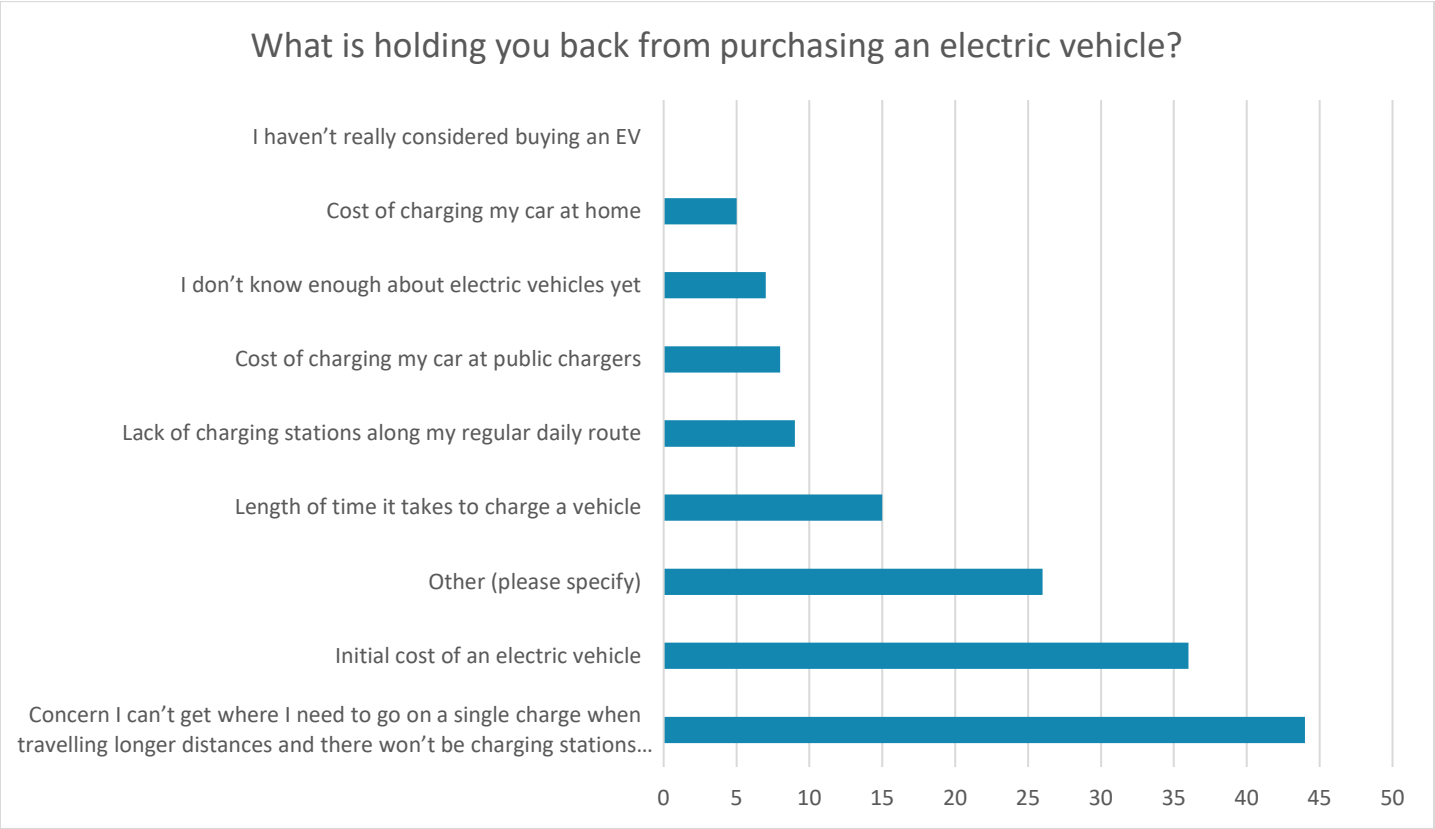
EV drivers were asked to provide their current experience with using public charging stations. Responses are summarized in the bullets below and the following chart.

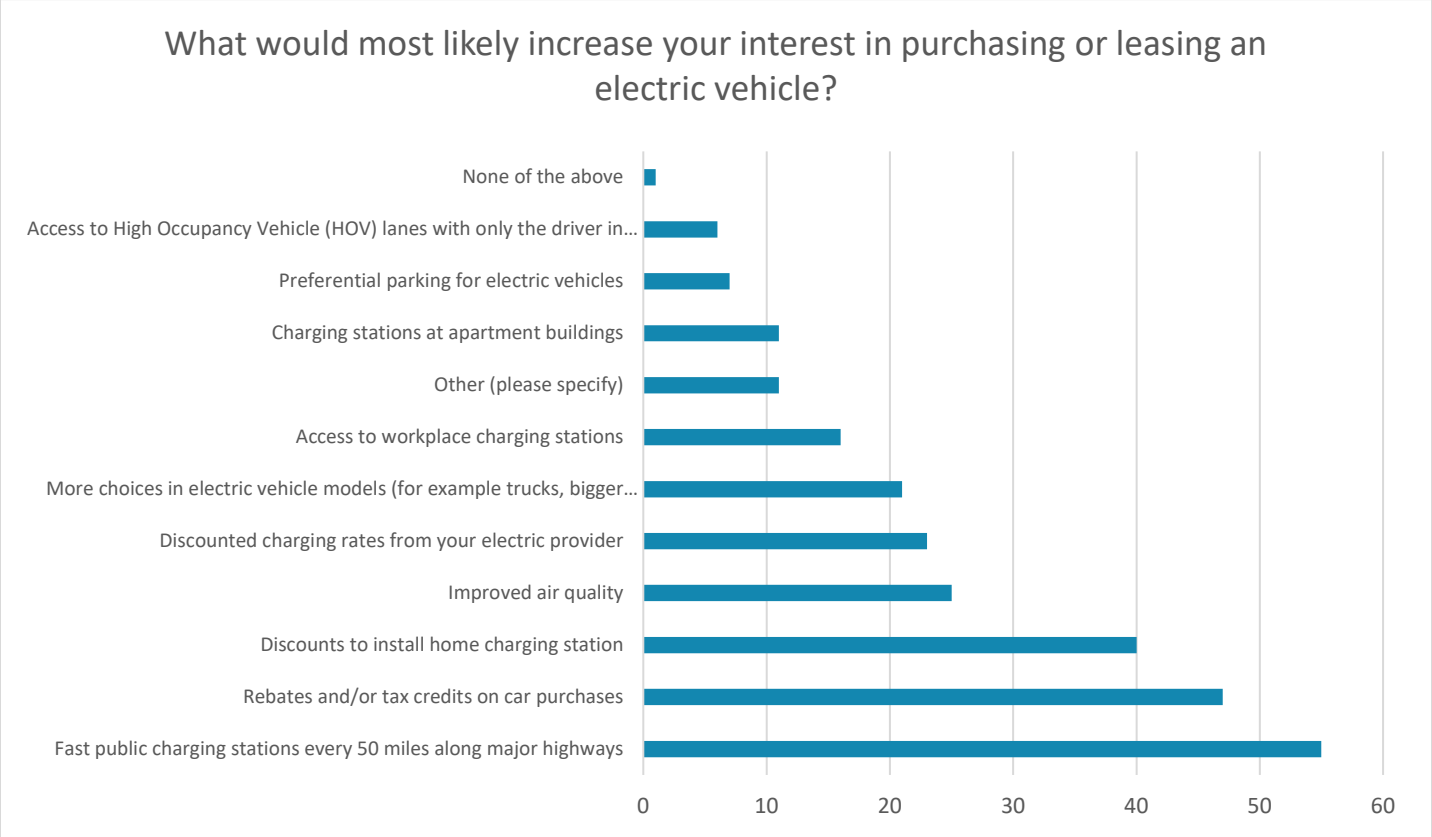
- Public charging stations typically do not have restrooms available for use
- Public charging stations typically do not have shelter from the weather
- Public charging stations usually or sometimes have chargers in good working condition
- About 40% of respondents always consider personal safety when choosing a charging station
- Drivers can usually pull right into the station they are using
- About 65% of drivers can usually or always find a public charger on their travel routes. A smaller portion of respondents (40%) can usually or always find a public fast charger along their route.



Non-EV drivers were asked to provide what was holding them back from purchasing an EV and what would increase their interest in purchasing an EV. The most common concern was not being able to get where they needed to go. 42 of the 44 (95%) respondents who cited being concerned about being able to get where they needed also identified locating stations every 50 miles along major highways as a way of increasing their interest. Non-EV drivers are also held back by the initial cost of an electric vehicle. Rebates on car purchases

and discounts on installing home charging were both identified as increasing interest in purchasing an EV. The responses of non-EV drivers to these questions are summarized in the charts below.





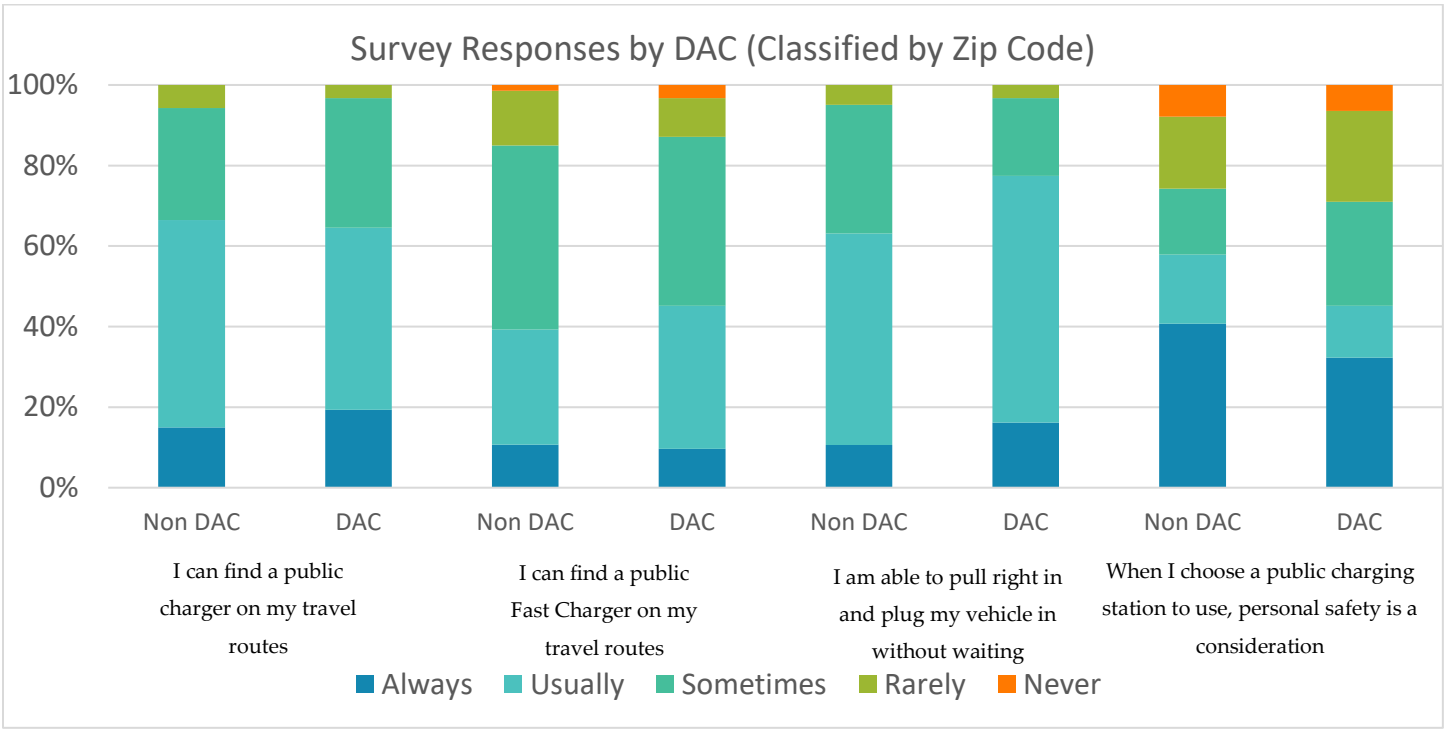
Potential Station Hosts

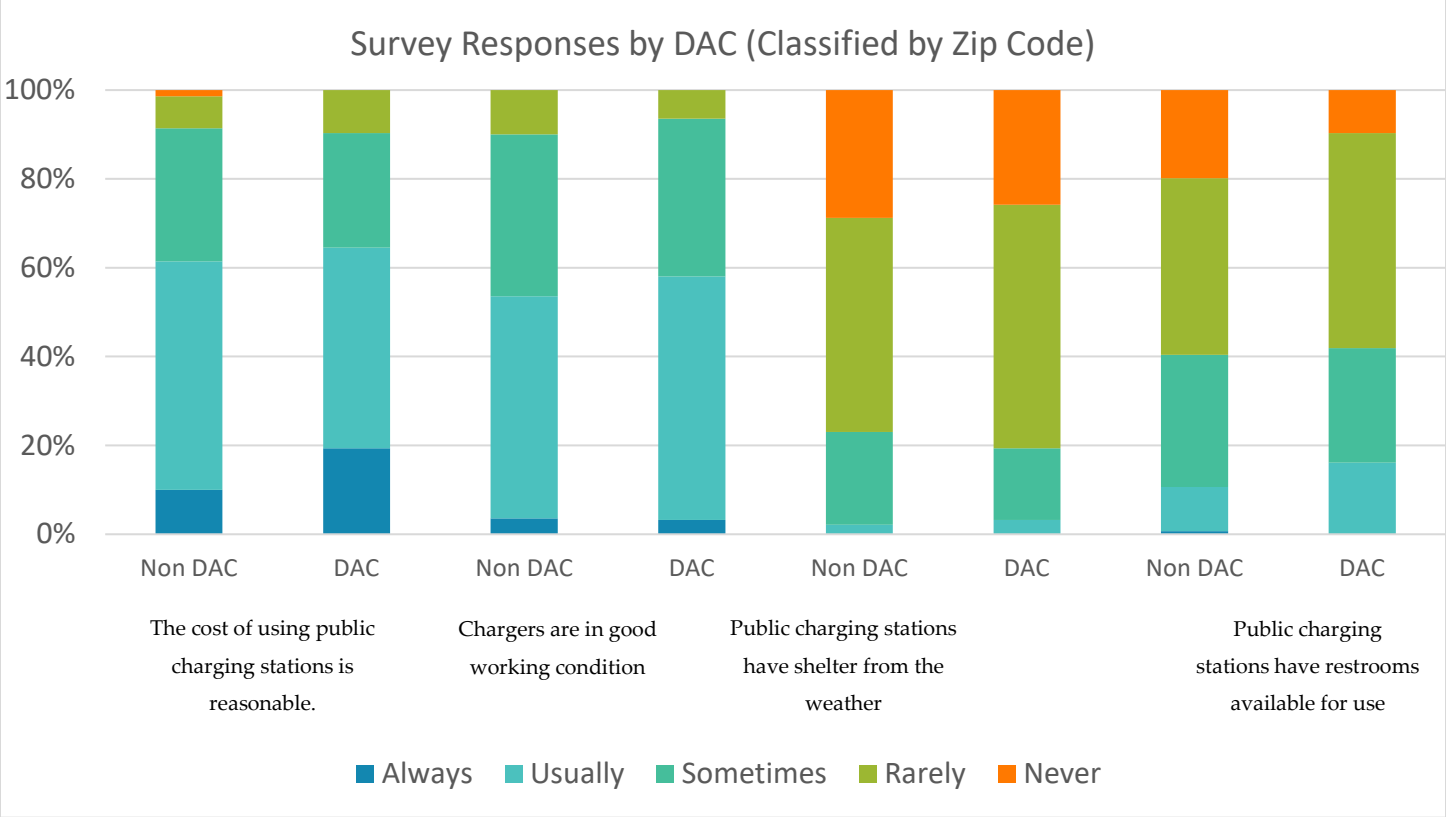
Considering the suggested station locations received through the interactive map, 39 of the 468 locations were suggested by an individual or organization willing to host the station. 23 of these locations are within one mile of an EV AFC. None of the 28 organizations that responded to the survey for organizations interested in hosting a charging station are located near the proposed station locations for the first year EV AFCs. The responding organizations will continue to be considered in the future for locating charging stations on other AFC and for community-based charging.

Equity

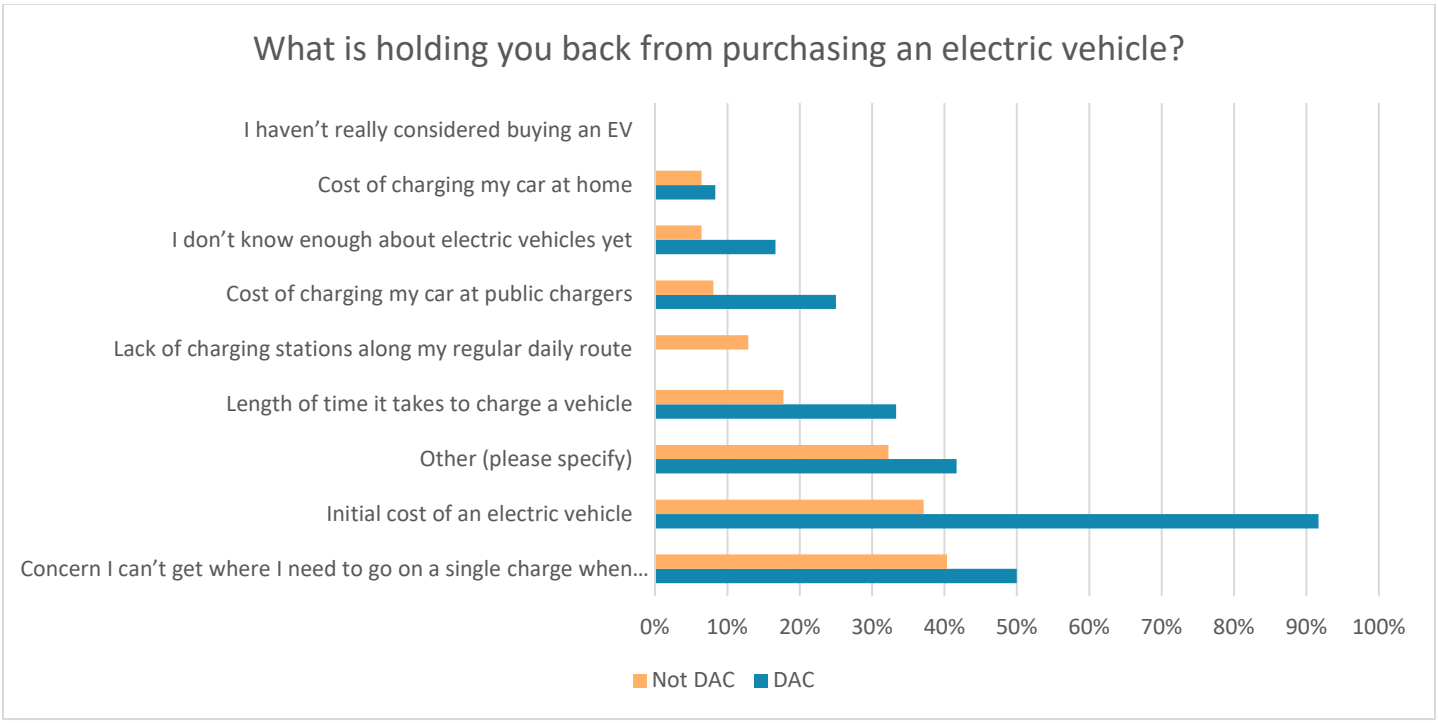
Survey respondents were given the option to provide their home zip code. 223 of 227 EV drivers provided their zip code. Zip codes were classified as being part of a Disadvantaged Community if at least 50% of the zip code overlapped with census tracts identified as disadvantaged in the JOET May 10 definition of DAC. About 22% of the population of Oregon lives in zip codes classified as DAC according to this method. 31 of the 223 (14%) EV drivers who provided their home zip code live in zip codes classified as DAC. 12 of 62 (20%) of non-EV drivers who provided their home zip code live in zip codes classified as DAC.

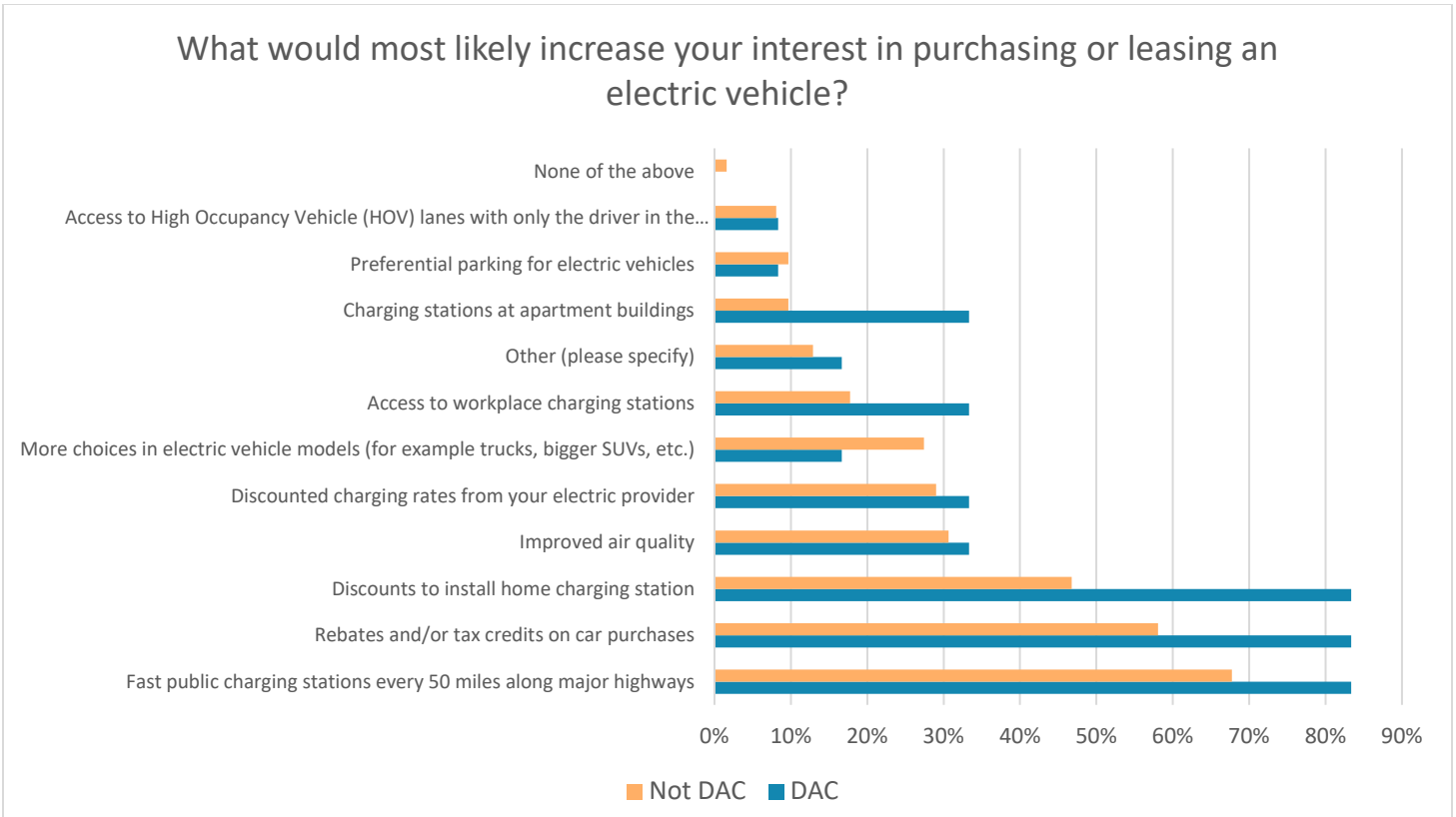
Considering the EV drivers who responded with their experience of using public charging stations, the experience of EV drivers living in zip codes classified as DAC is similar to EV drivers living in other zip codes. The responses are summarized in the figures below.





More than 90% of non-EV drivers living in zip codes classified as DAC list the initial cost of an EV as holding them back from purchasing an EV. This is substantially different from non-EV drivers living in other zip codes, 40% of whom list initial cost of an EV as holding them back. Respondents living in zip codes classified as DAC more frequently identified discounts installing home charging, installation of charging stations in apartment buildings, and rebates on car purchases as ways to increase interest in purchasing an EV, than respondents living in other zip codes. The survey includes responses from 12 people living in zip codes classified as DAC, further discussion with communities is needed before extrapolating these results to all DAC.


What is holding you back from purchasing an electric vehicle?
I haven't really considered buying an EV
Cost of charging my car at home
I don't know enough about electric vehicles yet
Cost of charging my car at public chargers
Lack of charging stations along my regular daily route
Length of time it takes to charge a vehicle
Other (please specify)
Initial cost of an electric vehicle
Concern I can't get where I need to go on a single charge when...
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Not DAC
DAC


What would most likely increase your interest in purchasing or leasing an electric vehicle?
None of the above
Access to High Occupancy Vehicle (HOV) lanes with only the driver in the...
Preferential parking for electric vehicles
Charging stations at apartment buildings
Other (please specify)
Access to workplace charging stations
More choices in electric vehicle models (for example trucks, bigger SUVs, etc.)
Discounted charging rates from your electric provider
Improved air quality
Discounts to install home charging station
Rebates and/or tax credits on car purchases
Fast public charging stations every 50 miles along major highways
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
Not DAC
DAC

Appendix C:
Utility Request for Information

Oregon Department of Transportation *Request for Information* from Electric Utilities: Grid Considerations for National EV Infrastructure Development ***CONFIDENTAL***

June 1, 2022

Introduction

Request for Information (RFI) topic: Grid capacity considerations for building out charging infrastructure on Oregon's EV Alternative Fuel Corridors (AFCs), to fulfill the National Electric Vehicle Infrastructure (NEVI) State Plan that the Oregon Department of Transportation (ODOT) is required to develop.

Recipients of RFI: Oregon's three investor-owned and 37 consumer- or publicly-owned electric utilities, with priority focus on utilities whose service territories the proposed first-year corridors pass through (utilities whose service areas encompass I-5, I-205, and US 97). We would appreciate responses from all Oregon utilities as well. However, our initial priority concerns center on those utilities whose service areas include the first-year EV Alternative Fuel Corridor build-out.

Background: In February 2022 the Federal Highway Administration (FHWA) of the US Department of Transportation (DOT) announced guidelines for a $5 billion national program (included In the Infrastructure Investment and Jobs Act, November 2021) to provide dedicated funding to states to strategically deploy EV charging infrastructure on designated EV AFCs. DC fact charging (DCFC) stations must be sited at a maximum of 50-mile increments along the AFCs and located within one mile of the highway corridor. ODOT will not build, own, or operate any of the DC fast charging stations, but will facilitate the development of stations by the private sector or others, with federal funding.

The NEVI program specifies that DCFC stations must include a minimum of four high-powered DC fast chargers, each offering at least 150 kW of power, with sufficient station power to fully engage all four DC fast chargers simultaneously (a minimum of 600 kW of power). Oregon aims to exceed this standard, fostering charging stations in many locations that have three 150 kW DC fast chargers, and one 350 kW DC fast charger (a minimum station-level power capability of 800 kW). ODOT aims to encourage "future proofing" of sites so that each offers wiring, and where possible, electrical capacity for two additional 350 kW DC fast chargers (up to 1.5 MW of power at each charging station).

States must submit the first annual deployment and implementation plan by August 1, 2022. RMI, Forth, and Kittelson & Associates are currently engaged with ODOT and ODOE in developing Oregon's State Plan, and a threshold question when considering areas for siting potential stations and station design is the availability of sufficient electrical capacity to support new and/or upgraded DCFC locations along the AFCs.

The Oregon Department of Transportation appreciates the opportunity to inquire about insights and capabilities that Oregon utilities have, and we thank you for your time responding to our questions. ODOT and its NEVI-support team will keep this information confidential and will ask permission first, should we seek to include any specific details in the State Plan.

Response to this RFI is desired by: Monday, June 13th, 2022, to Jillian.P.DiMedio@odot.oregon.gov

Questions

ODOT and its contractor team are seeking answers to the following questions with respect to the approximate locations of proposed new or upgraded DCFC stations for the NEVI program (see supporting maps showing A) first-year proposed EV Alternative Fuel Corridor possible charging station locations, and B) future-year proposed EV Alternative Fuel Corridors). We are seeking this information to better understand the feasibility and limitations of adding EV charging infrastructure at/near these possible charging station locations, or -- in general -- along the EV Alternative Fuel Corridors that will be built out over the course of the next five years. Please provide as much detail on the following questions as possible, within the constraints of our deadline. There will be further opportunities to discuss and address utility issues surrounding proposed EV charging stations along corridors during Regional Workshops that ODOT will host prior to investments in each corridor, and also once an EV service provider has been selected, and further stakeholder engagement ensues.

Hosting Capacity for New and/or Upgraded DC Fast Charging Stations

1. For utilities whose territories cover the Year 1 proposed station locations (see first map, below), do you have hosting capacity to support stations of 800 – 1,500 kW capacity at the approximate locations?[1]
    a. If not, are there locations in near proximity (within 5 miles) that could support this level of new transportation electrification load? Where are they? ODOT would appreciate identification of specific locations within the identified regions that have sufficient capacity and grid-side infrastructure to support charging stations without the need for considerable upgrades.
2. Can you provide hosting capacity maps which highlight areas of excess capacity, and/or similar GIS-based resources showing grid assets (e.g., substations) and ability to accommodate DCFC loads to help with NEVI-planning efforts?
    a. We are specifically interested in the availability of sufficient electrical capacity to support new or upgraded DCFC stations along Oregon's seven EV AFCs (I-5, I-82, I-84, US 101, US 97, US 20, US 26), and proposed new EV Alternative Fuel Corridors (I-205, I-405, US 95, and OR 42).
3. Are there any barriers or limitations to providing 480-volt, 3-phase power in your service area along the proposed routes?

Site Evaluation, Interconnection Process, and Timelines

4. Do you have dedicated staff to work with ODOT and contracted EV service providers (EVSPs) on site evaluation, fast-tracking of upgrades (if needed), interconnection processes and related development activities?
5. Who is the appropriate contact person in your organization for future coordination purposes?

[1] ODOT's planned station design for NEVI-funded DCFC includes three 150 kW chargers, one 350 kW charger, and two make-readies for additional 350 kW chargers. The total station load when fully built out could reach up to 1.5 MW.

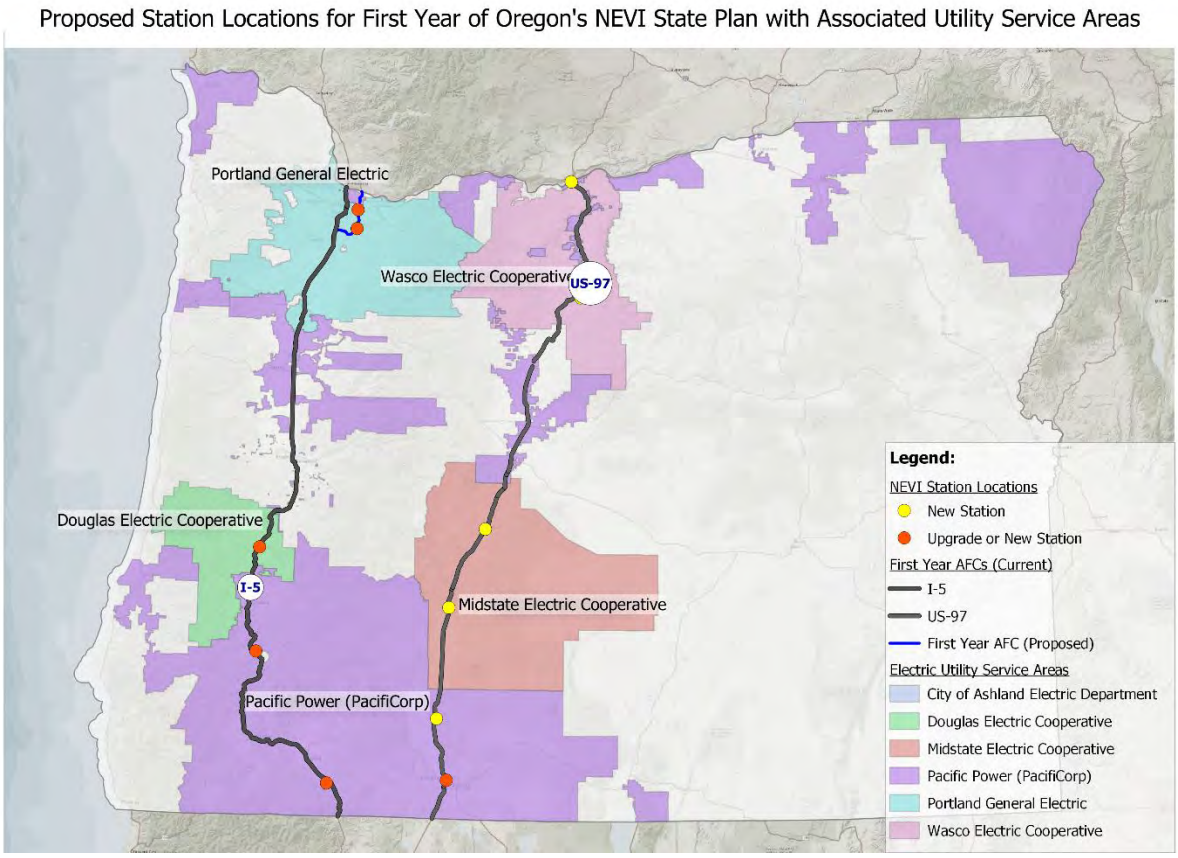
6. What is your best estimate of the timeline for interconnecting a new DCFC station with 800 – 1,500 kW capacity in your service territory?

Funding

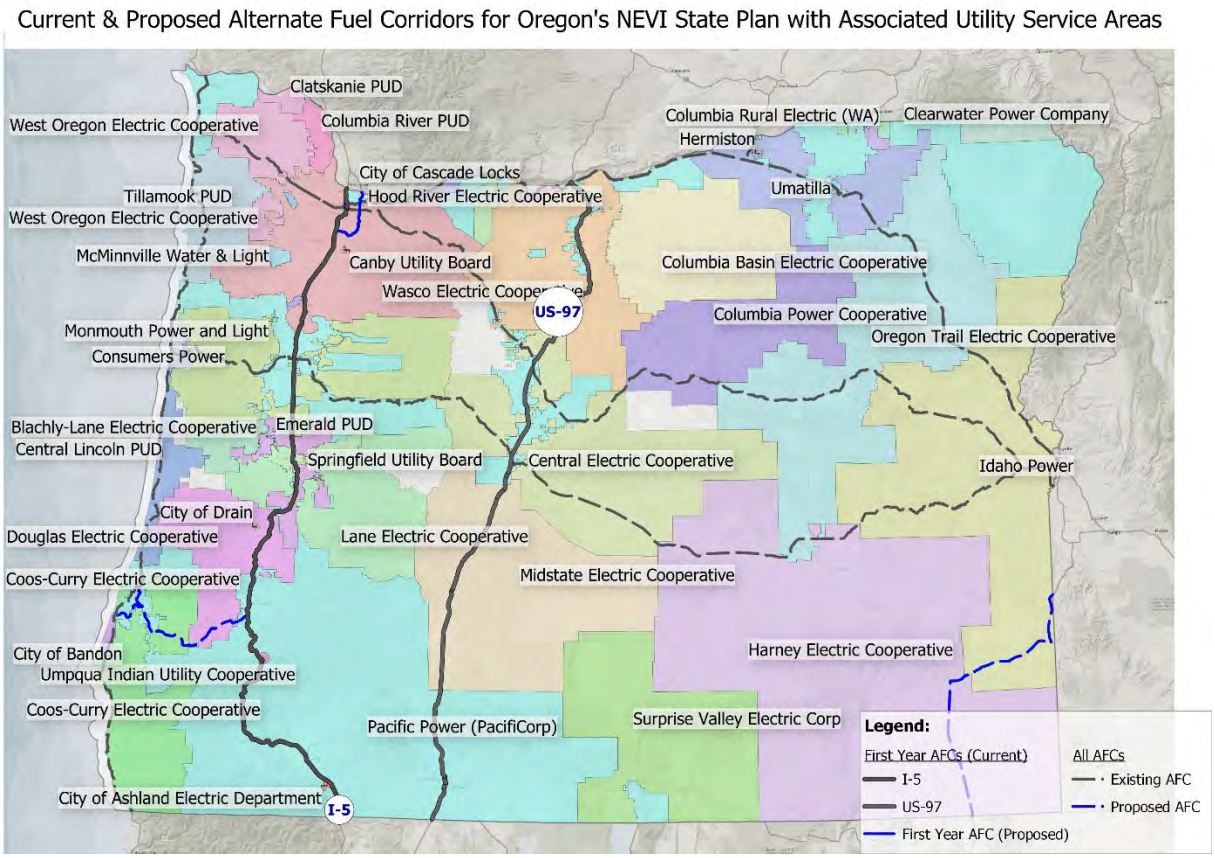
7. Do you have dedicated funding available to support utility-side and/or customer-side electrical upgrades (e.g., line extension allowances, dedicated transportation electrification programs)? Please provide details, or links to relevant documents.
8. If you are planning to propose programs that might address funding for customer-side or utility-side electrical upgrades needed for EV charging infrastructure, please share broad concepts under consideration, and timeline for when the plans might be pursued.

ODOT maps for your use, when responding to this Request for Information

A) Possible locations for proposed stations along these specific EV Alternative Fuel Corridors: I-5, US 97, and I-205, paired with utility service territories.



B) Seven current EV Alternative Fuel Corridors and four proposed EV AFCs, paired with utility service territories.



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For questions on this RFI, please contact Ben Shapiro at RMI: bshapiro@rmi.org.

Appendix D:
Technical Specs and Requirements for Operations, West Coast Electric Highway Upgrade RFP

Attachment A
Oregon West Coast Electric Highway
Technical Specifications for DCFC and Level 2 EVSE and Requirements for Operation

I. *Technical Specifications for DCFC and Level 2 Electric Vehicle Supply Equipment at WCEH charging stations:*

Oregon WCEH charging stations shall meet the following technical requirements:

Equipment and Installation Specifications

At a minimum, Direct Current Fast Charger (DCFC) and Level 2 Electric Vehicle Supply Equipment (EVSE) charging equipment and installations must fulfill these requirements:

1) DCFC and Level 2 EVSE charging stations must be installed in compliance with National Fire Protection Association (NFPA) 70, National Electric Code (NEC) Article 625 and all applicable State and local Electrical Codes currently adopted and enforced within the jurisdiction of installation, including all associated work with circuits, electrical service and meters.
2) All new installations and upgrades of EV charging equipment must be performed in a professional manner, in accordance with industry best practices and with all federal, state and local government laws, ordinances, codes and utility requirements.
3) EV charging equipment must be networked and shall include at least one of the following two options:
    a. At least one CHAdeMO DCFC (50 kW power) connector, at least one SAE CCS-1 DCFC (50 kW or higher power rating, but capable of charging at 50 kW) connector and at least one Level 2 EVSE J1772- compliant charger (7.2 kW or higher); or
    b. At least one dual unit with both CHAdeMO and SAE CCS-1 connectors (capable of 50kW charging or higher) and at least one Level 2 EVSE J1772-compliant charger (7.2 kW or higher);

    NOTE: DCFC charging equipment must be capable of 50KW shared output, if power is shared among multiple chargers. Level 2 EVSE charging equipment must be capable of 7.2 kW shared output, if power is shared among multiple chargers.
4) EV charging stations must use technology that is compatible with most currently available EV models.
5) DCFC charging equipment is best supported by 480 volt 3-phase power with adequate transformer capacity to serve the DCFC(s). “Future proofing” the site with adequate transformer capacity and panel for one or more 150 kW DCFC (or higher power) is encouraged; conduit for 150 kW DCFC (or higher power) is required.

6) All EV charging station equipment, including kiosks (if any) must be certified to operate outdoors and withstand extreme weather conditions (minimum NEMA 3R or NEMA 4), including temperature extremes, flooding, heavy rains, and high winds.
7) EV charging equipment and all display screens should be sturdy enough to withstand most types of vandalism.
8) EV charging stations must include user interfaces that are legible in both day and night time conditions, and display screens must be protected from malfunction due to condensation and any local area weather condition. Screens must be readable in bright sunlight and must be shielded to protect against degradation due to UV rays.
9) DCFC and Level 2 EVSE charging equipment must include adequate cord length (Level 2 EVSE shall have 18 – 25 feet, and DCFC shall have a minimum of 12 feet); cable coupler that complies with NEC Article 625 protection, and storage for charging cords. DCFC and Level 2 EVSE charging equipment must incorporate a cord management system to minimize the potential for cable entanglement, user injury or connector damage from lying on the ground, and be designed for operator ease-of-use. If included, 110-volt outlets must be GFCI (ground fault circuit interrupter outlets), be weather resistant, have weather-proof in-use covers, and meet National Electric Code requirements.
10) DCFC and Level 2 EVSE charging equipment must be protected from vehicle collision and other damage to ground, pedestal or wall-mounted equipment (e.g., by the inclusion of guard posts, wheel stops, curb protection, or wall-mounted barriers).
11) EV charging equipment and payment equipment must have a minimum five-year warranty (either from the manufacturer, a third party or the Contractor), including repair and replacement for vandalism.
12) All EV charging equipment (DCFC, Level 2 EVSE) must be certified by the Underwriters Laboratories, Inc. (UL) or through another Nationally Recognized Testing Laboratory (NRTL) program to demonstrate compliance with appropriate product safety standards.
13) DCFC charging equipment with power levels higher than 50kW must have the ability to be powered down to 50kW so that they are compatible for use by older light-duty EVs.
14) Level 2 EVSE charging equipment and its site controllers/gateways (if the Operator's system uses these) shall be 208/240 volt AC, single or multi-port configuration, UL Listed (or certified by another NRTL), suitable for outdoor installations and shall comply with NEMA 3R or NEMA 4 for outdoor use.
15) Level 2 EVSE charging equipment shall be Energy Star certified, or must demonstrate and verify that equipment will meet standards that are equivalent to Energy Star certification standards prior to Level 2 EVSE commissioning, and shall be designed and recommended for high traffic, outdoor, commercial charging applications.

Interoperability, Universal Roaming, and Vehicle Grid Integration

16) All EV charging station equipment (DCFC and Level 2 EVSE) must be compliant with Open Charge Point Protocol (OCPP) 1.6 (or newer) requirements. The EV charging equipment must be capable of switching networks without requiring the replacement of the DCFC or Level 2 EVSE equipment or other technological, contractual, and/or

other unreasonable restrictions, as noted in the *Requirements for Operation* section of this Attachment.

17) EV charging station equipment must enable universal roaming and be in compliance with the Open Charge Point Interface 2.1 (OPCI) as the communications protocol, as specified in the *Requirements for Operation* section of this Attachment.
18) EV charging station equipment must be compliant with Open ADR 2.0, as specified in the *Requirements for Operation* section of this Attachment.

Open Access, Payment Options, Remote Diagnostics, and Data Capture

19) EV charging stations must provide Open Access as specified in the *Requirements for Operations* section of this Attachment.
20) EV charging stations must provide clear, simple, and real-time pricing information displayed on the device or payment screen, and offer the required payment options specified in the *Requirements for Operation* section of this Attachment.
21) All WCEH EV charging equipment must be capable of charging the consumer via a "per kWh" pricing mechanism.
22) Operator must maintain appropriate hardware and software that allows for remote diagnostics, "remote start" of the charging equipment, and collecting and reporting of usage data.
23) EV charging equipment must be capable of usage data capture as well as cost recovery via payment options specified in the *Requirements for Operation* section of this Attachment.

II. Requirements for Operation of WCEH EV Charging Stations:

General Requirements

1) All WCEH EV charging stations must meet the definition of "public electric vehicle charging station" included in the Definitions section of the Contract.
2) The Operator of WCEH EV charging stations shall execute a non-exclusive trademark license agreement with the Washington State Department of Transportation (WSDOT), shall brand WCEH installations using WSDOT Marks for the WCEH, and shall agree to maintain WSDOT Quality Standards as specified in that agreement. See the West Coast Green Highway website for more information: http://westcoastgreenhighway.com/pdfs/WSDOT_LICENSE_AGREEMENT_WCEH_BRANDING.pdf. NOTE: Should this RFP require WCEH installations to comply with additional provisions that exceed, are additional to, or differ from the minimum requirements specified in the WSDOT non-exclusive trademark license agreement, this RFP's requirements prevail and must be met.
3) The Operator of WCEH EV charging stations shall demonstrate that its proposed EV charging equipment and payment mechanisms are compliant with all Technical Specifications (as described above in the *Technical Specifications* section of this Attachment).

4) The Operator of WCEH EV charging stations shall include insurance for stations and station operation.

Open Access, Payment Options, Accessibility, and Customer Service Support

The Operator of WCEH EV charging stations shall ensure:

5) **Open Access:** EV charging stations must be accessible by all drivers regardless of network membership or subscriptions, and consumers must not be required to pay a subscription fee or otherwise obtain a membership in any network, club, association, or organization as a condition of using such public EV charging stations; provided, however, that owners and operators of public EV charging stations may have separate price schedules conditional on a subscription or membership.
6) **Required Payment Options:** EV charging stations must be accessible (see *Accessibility* requirements below) and support multiple point-of-sale methods for users to pay for EV charging at DCFC charging equipment and Level 2 EVSE charging equipment. At a minimum, all EV charging equipment (or separate, adjacent payment kiosk) at WCEH EV charging stations must support the following pay-per-use options:
   (i) Payment by use of a Credit card (either Tap-and-Go, Euro MasterCard Visa (EMV) chip, or both) and Debit card, without incurring excessive fees, inconvenience or delays compared to other payment methods;
      a. At a minimum, the following Credit card and Debit card types must be supported: Visa; MasterCard; and American Express.
      b. If a Credit card reader device is incorporated, it must be physically located on either the EV charging equipment or at a separate, adjacent kiosk in service of that EV charging equipment, and it must be non-locking and must always permit customers to remove Credit/Debit cards without damage to the card, including during a fault situation or a power failure.
      c. If a Credit card reader device is incorporated, it shall comply with PCI-DSS Level 1, for security for payment processing.
   (ii) Provide and display a toll-free number on each DCFC, Level 2 EVSE, and/or kiosk used to service that charging equipment that provides the user with the option to initiate a charging session and make a payment by telephone at any time that the DCFC and/or Level 2 EVSE is operational and publicly available. (See requirements for Customer Service Support, below.)
   (iii) Provide a mobile payment device physically located on the DCFC EV charging equipment, EVSE or kiosk used to service the EV charging stations.

   Operator's point-of-sale methods and supporting network must use an open protocol to allow subscribers of other light-duty EV charging networks to access the charging stations and to access the supporting network in order to obtain information concerning the charging stations.

   In addition, if desired, Operator may offer users the option of a subscription and/or membership in proprietary payment plan(s) via a Radio-Frequency Identification (RFID) card and/or mobile app, with separate price schedules.

7) **Accessibility:** EV charging stations must be designed to be operational and publicly accessible year-round, 24 hours per day, 7 days per week. Existing stations, or proposed future stations, should not be sited in limited-access venues, such as behind a fence or in a gated parking lot closed to the public after hours. Charging station sites must be on paved surfaces, in spots clearly designated as reserved for EV charging, adequately lit from dusk to dawn, and safe from traffic circulation and ingress/egress points.
8) **Customer Service Support:** All WCEH EV charging stations shall include clear use instructions and customer support contact information. A customer service support number shall be provided that is accessible to customers 24 hours a day, 7 days a week, through a toll-free telephone number that is clearly visible and posted on or near the charging equipment or kiosk, to assist customers with difficulties accessing or operating the charging station. Both DCFC and Level 2 EVSE charging equipment must have remote diagnostics and the Operator must have the ability to "remote start" the equipment. Customer service support must be capable of dispatching or otherwise providing services to address operational problems at the charging station. A customer who calls the toll-free number must get immediate assistance, including rebooting the system if necessary.

Up time, Operations, Maintenance and Repair Obligations

The Operator of WCEH EV charging stations must adhere to the following requirements for up time, Operations, Maintenance and Repair:

9) **Up time:** Each connector on each DCFC or Level 2 EVSE charging equipment shall be operational at least 95% of the time (and Operator shall have a specific plan to strive for 99% up time) based on a period of 24-hours a day, 7 days a week. Operator must respond to any issues such as, but not limited to, malfunctions, repairs, or vandalism within 24 hours of the initial notice. For complex issues including, but not limited to, power outages, charging equipment should be repaired within 2 – 5 days. Operator is required to provide quarterly operational reports on the charging network, including up time percentages by station, for each DCFC and Level 2 charging equipment, and reports on downtime causes and resolutions. The reports shall be due by the 10th day of the month immediately following the reported quarter.
10) **Operations:** Operator, and any successor-in-interest, shall be responsible for operating and maintaining the charging equipment, charging station pedestals and casings, and all ancillary equipment including cables, awnings, canopies, shelters, payment kiosks and informational display kiosks or signage associated with the charging station, in good working order and in compliance with all manufacturer requirements and recommendations for a period of at least five (5) years following the date when all stations in Oregon's WCEH network covered by the Contract are commissioned and commence operation (incorporating the new, updated equipment specified in the Contract).
11) **Operations and Maintenance Plan:** Operator shall submit, for approval, an operations and maintenance plan for all DCFC and Level 2 EVSE charging equipment that ensures Operator is able to comply with the 95% up time requirement (and demonstrates how

Operator will strive to meet the target of 99% up time). Operator shall provide for snow removal to ensure access during inclement weather. Operator shall provide for regular (but not less frequently than quarterly) inspection, cleaning and maintenance of each charging station and all ancillary equipment, and will provide quarterly reports regarding inspection, cleaning and maintenance activities, operating status of chargers, percentage up time and down time, cause for down time and actions to redress the cause of down time. Such reports shall be due by the 10th day of the month immediately following the reported quarter.

12) **Repair:** Operator shall initiate the process for making any needed repairs immediately, within 24 consecutive hours following notice of a malfunction or other operational issue. For complex issues including, but not limited to, power outages, charging equipment should be repaired within 2 – 5 days. Operator shall develop a report, in a format mutually agreed upon by the parties, that at a minimum includes:
    1. Description of the reported problem or issue
    2. Source of report (individual/system)
    3. Date and time reported
    4. Date and time addressed/repaired
    5. Description of the actual problem or issue
    6. Date and time that problem was corrected
    7. Technician's ID

    Data shall be provided in a Pivot table format so that common problems/issues can be more easily identified.

EV Driver Operational Status Communication and Pricing Transparency Requirements

The Operator of WCEH EV charging stations must ensure:

13) **Operational Status Communication**: Operator shall effectively communicate to EV drivers as they are using a charging station and/or searching for a charging station regarding when an EV charging station is not working. Communication shall be via a mobile app, text alerts, or other similar technology. At a minimum, all EV charging stations are required to display real-time operational status on a smartphone application, either through a network-specific application or a third-party aggregator.

14) **Pricing Transparency:** It is expected that EV drivers using these charging stations are offered fair, competitive and reasonable rates. The following pricing information shall be available to drivers in advance of each charging session – through a user interface that is legible both at night and in direct sunlight, or through another form of display at or on the charging station, and via mobile app:
    - **a.** the unit of sale (per kWh, or, if applicable, per session, or per unit of time);
    - **b.** pricing per unit of sale;
    - **c.** any additional fees that may be assessed (e.g., parking fees, dwell time fees); and
    - **d.** for both DCFC and Level 2 EVSE charging equipment, the maximum power level of the station (when not sharing power) in kilowatts.

Interoperability, Universal Roaming, and Vehicle Grid Integration

The Operator of WCEH EV charging stations must ensure:

15) **Interoperability - Ability to change network service providers without having to replace charging equipment:** All EV charging stations must be networked and compliant with Open Charge Point Protocol (OCPP) 1.6 (or newer) requirements, and must be capable of switching networks without technological, contractual, or other unreasonable restrictions. (Systems that are OCPP compliant only at the network level are not permitted).
16) **Capability for universal roaming:** To enable universal roaming on all networked WCEH EV charging stations, all DCFC and Level 2 EVSE charging equipment must be in compliance with the Open Charge Point Interface (OPCI) 2.1 or newer as the communications protocol, to enable the back-end network to have the ability to exchange consumer billing data information with other networks. Operator must enable customers to seamlessly access charging stations, regardless of network or vendor, without the need for multiple cards/memberships.
17) **Managed Charging Capability and Vehicle Grid Integration:** To enable managed charging and utility-directed demand response programs, the Operator must ensure that network service providers supporting WCEH EV charging stations must be compliant with OpenADR 2.0, a common platform that utilities utilize for demand response programs.

Required elements of National Institute of Standards and Technology, Handbook 44, Specifications, Tolerances, and other Technical Requirements for Weighing and Measuring Devices (NIST Handbook 44), Section 3.40. Electric Vehicle Fueling Systems

The Operator of WCEH EV charging stations must comply with the following NIST Handbook 44 provisions:

18) **Identification and Marking:** The following identification and marking requirements must be met:
    a. The marking information requires that identification shall appear as follows:
        i. Within 60 cm (24 inches) to 150 cm (60 inches) from ground level; and
        ii. On a portion of the DCFC or Level 2 EVSE that cannot be readily removed or interchanged (e.g., not on a service access panel).
    b. Each DCFC or Level 2 EVSE shall have the following information conspicuously, legibly, and indelibly marked:
        i. Voltage rating;
        ii. Maximum current deliverable;
        iii. Type of current (AC or DC or, if capable of both, both shall be listed);
        iv. Minimum Measured Quantity (MMQ); and
        v. Temperature limits, if narrower than and within -40 degrees Celsius to + 85 degrees Celsius (- 40 degrees Fahrenheit to +185 degrees Fahrenheit).
    c. The following abbreviations or symbols may appear on a DCFC or Level 2 EVSE charging system:
        i. VAC = volts alternating current;

ii. VDC = volts direct current;
iii. MDA = maximum deliverable amperes;
iv. J = joule.

19) **Totalizers for DCFC and Level 2 EVSE charging systems:** DCFC and Level 2 EVSE charging stations shall be designed with a non-resettable totalizer for the quantity delivered through each separate measuring device. Totalizer information shall be adequately protected and unalterable. Totalizer information shall be provided by the system and readily available on site or via on site internet access.
20) **Minimum Measured Quantity (MMQ):** The minimum measured quantity shall satisfy the conditions and use of the measuring system as follows
    a. Measuring systems shall have a minimum measured quantity not exceeding 2.5 megajoule (MJ) or 0.5 kilowatt-hours (kWh).

Reporting Requirements

The Operator of WCEH EV charging stations must comply with reporting requirements, for a period of at least five (5) years following the commissioning of all EV charging equipment that is upgraded and installed under the Contract:

21) **Reporting to the National Renewable Energy Laboratory (NREL) Alternative Fuels Data Center**: The Alternative Fuels Data Center (AFDC) is a resource of the U.S. Department of Energy (DOE) Vehicle Technologies Office (VTO). The AFDC provides tools and resources to aid transportation decision makers, including the Electric Vehicle Charging Station Locator, which holds information on EV charging station locations in the United States and Canada. The Operator will be required to send EV charging station location information to the AFDC monthly, along with other useful information (which can be shared initially, and only updated as needed). Specifically, information to be shared with the AFDC shall include: Charging station name and Station ID (if any); Manufacturer of the DCFC and Level 2 EVSE, along with model names, model numbers and serial numbers; Charging Station address; Geographic coordinates of the station (e.g., latitude and longitude); Phone number to call if user has problems at a station; Access type (public); Access days/times (hours of public operation for the station); Payment methods; Operator, that is, the network service provider for each station; Nature of the composition of pricing charges and unit of measurement for pricing (e.g., $/kWh, other fees such as a parking fee or demand response pricing options); Date charging station is upgraded or opened; Date a charging station is decommissioned; Power sharing capabilities among ports; Port classification level (which indicates the rate of the battery refuel, e.g., AC Level 2 (3.3 kW – 22 kW), DC Fast Charger (23kW+); Connectors on each DCFC and each Level 2 EVSE (e.g., SAE J1772, SAE CCS-1 J1772, CHAdeMO). An Application Programming Interface with AFDC can be established to port over information every 12 – 24 hours.
22) **Reporting to ODOT on Use of the EV Charging Network:** Operator is required to provide periodic operational reports to ODOT on the charging network for a period of five (5) years following the commissioning of all new or upgraded WCEH EV charging stations, including:
    a. kWh usage, by site, separately for each Level 2 EVSE and DCFC;

b. The number of charging events, by site, separately for each Level 2 EVSE or DCFC;
c. Information (percentage) concerning how charging sessions were initiated, such as mobile app, credit card, debit card, phone call or other means, for each Level 2 EVSE and DCFC, at each site; and
d. The up-time percentages by station, for each DCFC and Level 2 EVSE, including reports on downtime causes and resolutions.

Note: Data capture is required on a monthly basis, and ODOT will require a minimum of quarterly reports that denote usage data by month, in a format that is mutually agreed upon among the parties.

23) **Specific Reporting Requirements to ODOT Prior to Installation/Upgrades:** Operator is required to provide the following information at least 45 days prior to the installation or upgrade of any DCFC or Level 2 EVSE:
a. Current contact information for the Operator installing the DCFC or Level 2 EVSE (including company name, website, name of designated contact person, e-mail of designated contact person; mobile phone number of designated contact person, and current mailing address of designated contact person);
b. Operator shall provide the following DCFC or Level 2 EVSE Model Certification information and accompanying photographs, for each DCFC or Level 2 EVSE model to be installed: Manufacturer name, model number and serial number; Type of EV charging equipment (Level 2 or DCFC); Nominal voltage; Current supported (amps); Power supported (kilowatts); Number of ports; Number of connectors and connector standard; Type of payment methods and devices installed; Manufacturer website; Operator toll-free number or numbers displayed on DCFC and/or Level 2 EVSE model; DCFC and Level 2 EVSE model photos: front, back, payment mechanisms, fee display (if display is multiple pages, include photos of complete information); kiosk model (if any) photos: front, back, payment mechanisms, and fee display (if display is multiple pages, include photos of complete information), if applicable.

24) Annual Reporting Requirements to ODOT: Operator is required to report the following information to ODOT on an annual basis, in a format that is mutually agreed upon by the parties:

a. Annual inventory of DCFC EV charging equipment and Level 2 EVSE charging equipment, including: Charging station name and Station ID (if any); Manufacturer of the DCFC and Level 2 EVSE, along with model names, model numbers and serial numbers; Charging Station address; Geographic coordinates of the station (e.g., latitude and longitude); Phone number to call if user has problems at a station; Access type (public); Access days/times (hours of public operation for the station); Payment methods; Nature of the composition of pricing charges and unit of measurement for pricing (e.g., $/kWh, other fees such as a parking fee or demand response pricing options); Date charging station is upgraded or opened; Date a charging station is decommissioned; Power sharing capabilities among ports; Port classification level (which indicates the rate of the battery refuel, e.g., AC Level 2 (3.3 kW – 22 kW), DC Fast

Charger (23kW+); Connectors on each DCFC and each Level 2 EVSE (e.g., SAE J1772, SAE CCS-1 J1772, CHAdeMO);

b. Documentation of routine inspection, cleaning and maintenance activities of each charging station and all ancillary equipment (undertaken on an annual basis, at a minimum) with accompanying photographs, noting vandalism (if any) and actions to redress;

c. Operating status of each charger, percentage up-time and down-time, cause for down-time and actions to redress the cause of down-time. A specific description of repairs is to be provided, in a format mutually agreed upon by the parties that at a minimum includes:

- Description of the reported problem or issue;
- Source of report (individual/system);
- Date and time reported;
- Date and time addressed/repaired;
- Description of the actual problem or issue;
- Date and time that problem was corrected;
- Technician's ID.

Data shall be provided in a Pivot table format so that common problems/issues can be more easily identified.

d. Anonymized, annual charging session data by payment method. Data shall include information from each WCEH DCFC and Level 2 EVSE charging station installed, and at a minimum will be aggregated statewide, including:

i. Total number of charging sessions started with a Credit card;
ii. Total number of charging sessions started with a Debit card;
iii. Total number of charging sessions started with a mobile payment option;
iv. Total number of charging sessions started with a toll-free number;
v. Total number of charging sessions started with a membership RFID card or membership mobile app ;
vi. Total number of charging sessions started with an application via the Operator;
vii. Total number of charging sessions initiated with any other methods of payment.

Attachment B
Oregon West Coast Electric Highway
Requirements for Use of WCEH Branding and Logo, found in West Coast Electric Highway Non-Exclusive Trademark License Agreement

NON-EXCLUSIVE TRADEMARK LICENSE AGREEMENT Attachment B: Requirements for Use of WCEH Branding and Logo

The states of Washington, Oregon and California, and the Province of British Columbia, are collaborating on deployment of electric vehicle quick-charging stations at key locations throughout the Interstate 5/Highway 99 corridor (Highway) to support interurban, interstate or interregional travel. Consumers who are considering the purchase of an Electric Vehicle (EV) need assurances that charging stations are located where the services are most needed. They expect charging stations to be safe, convenient, reliable, easily identified, simple to use, and any fees collected for the service fairly priced. Finally, consumers expect consistency in their EV charging experience from station to station, regardless of governmental jurisdiction.

For the right for a Licensee to use the trademarks for the West Coast Electric Highway (WCEH) to promote a network of Electric Vehicle Supply Equipment (EVSE) along a Highway corridor, the Licensee must ensure that the following requirements are met:

1. **Charging Station Host Sites**

   All host sites, whether public or privately owned, must comply with all laws, federal, state, and local electrical and building codes for construction and must be fully licensed to use the equipment in a public accessible venue.

2. **Charging Station Locations**

   Host sites must be located within three miles of the Highway. Host sites must be easily accessible via a route that can safely and conveniently accommodate electric vehicles of the types, sizes and weights that would be traveling to the facility, entering and leaving the facility, and returning to the Highway.

3. **EV Charging Station Accessibility and Availability**

   All charging station components must be operational and publicly accessible 24 hours per day, every day of the year. Stations should not be located in locations with limited access or availability such as behind a fence or in a gated parking lot closed to the public after hours. The host sites must have paved parking spaces available to render electric charging services. These

spaces must be adequately lit, and in a location safe from traffic circulation and ingress/egress points.

4. Charging Equipment Offerings

The charging stations must utilize technology that is compatible with most currently available electric vehicles. Host sites should ideally have 480V 3-phase power available with a transformer that has adequate capacity to provide power to the DC Quick Charger(s).

The equipment must be networked and include at least one CHAdeMO fast charger, one SAE Combined Charging System (CCS) fast charger (or dual unit with both CHAdeMO and SAE CCS), and one J1772-compliant EVSE Level 2 pedestal. The operator must have remote diagnostics and the ability to "remote start" the equipment.

The equipment must be industrial strength and able to withstand extreme weather conditions including rain, snow, and mist. Any screens must be protected from malfunctions due to condensation and should be sturdy to withstand vandalism.

5. Operations and Maintenance

The Licensee must ensure payment of all operating costs, including but not limited to payment of leases, rents, royalties, licenses, fees, taxes, revenue sharing, utilities, and electric power supply for the charging equipment and supporting elements, such as area lighting.

The Licensee is responsible for maintaining the charging station pedestals, ancillary equipment, and any awnings, canopies, shelters and information display kiosks or signage associated with the charging station. "Maintain," as used in this agreement shall mean "to provide all needed repairs or desired and approved alteration, as well as to clean the equipment and keep it safe, clean, and presentable."

The Licensee must address any issues such as but not limited to malfunctions, repairs, or vandalism within 48 hours of the initial notice. For complex issues including but not limited to power outages, the equipment should be repaired in 2-5 days. If the equipment is out of commission for more than two weeks or if the equipment is not operating at least 95% of the time, the operator may forfeit the right to use the West Coast Electric Highway branding.

6. Payment Options

The charging equipment must support multiple point-of-sale methods, such as pay per use and monthly subscription methods. Subject to equipment and software availability, the Licensee must ensure that the charging station is equipped to accept a credit and/or debit card without incurring any additional fees, inconvenience or delays versus other payment or access control methods. Licensee may offer additional payment mechanisms, such as Radio frequency identification (RFID) cards that are linked to a credit card or payment through mobile apps. The point-of-sale and supporting network must use an open protocol to allow subscribers of other EV charging system networks to access the charging station. The station signage must clearly inform drivers of the prices per unit of measure and applicable charging voltages.

7. Customer Service

The Licensee must provide customer support service that is accessible twenty-four hours a day, seven days a week (24/7) via a toll-free telephone number clearly posted near the charging equipment that is available to EV drivers accessing the charging equipment. The customer support service must be capable of providing or dispatching services to address customer concerns at the charging station. The Licensee must have remote diagnostics and the ability to "remote start" the equipment. When someone calls the toll free number due to an issue, that person should get immediate assistance including rebooting the system.

8. Highway and On-Site Signage

The vendor must coordinate with the applicable state's Department of Transportation to have directional signage produced and installed along the Highway. The symbol signs, D9-11b (alternate), must meet MUTCD standards and be placed along the roadways at the exit approaches and on the off-ramps. The vendor shall coordinate with cities and counties on follow-through signage on local roads leading to the charging location. See www.westcoastgreenhighway.com/evsigns.htm for sign specifications.

Alternate Electric Vehicle Charging Symbol sign (D9-11b Alternate)

A host site must comply with the policies, procedures and project-related rules concerning signage of the state in which the host site is located, including but not limited to signage and advertising that touches or concerns the electric vehicle charging station, nearby interpretive signage, directional signage, use of logos, advertising, etc.

9. Marketing, Media Relations, and Public Outreach

The Licensee must use the West Coast Electric Highway logo and branding in accordance with the style guide for use of the WSDOT Mark(s) as set forth in Exhibit C and online at www.westcoastgreenhighway.com/evsigns.htm. The Licensee shall have flexibility in the sizes, quantities and application of the Marks. Co-branding is acceptable.

10. Optional Preferred Practices

Although not mandatory to qualify as a West Coast Electric Highway station, the Licensee should attempt to incorporate these desired practices when possible:

- Site stations as close as possible to a Highway exit, preferably within a half mile of a Highway interchange.
- Site stations where restrooms are available to the public at all times of operation. Restrooms must be modern, sanitary and have drinking water. The restrooms and drinking water should be available at no charge or obligation.
- Host sites that offer products and ancillary services to the public while charging are preferred. Consumer options may include amenities such as vending, snacks, fast food and/or full service restaurants within safe walking distance of the charging station; traveler information (tourist, hotels, maps); reading/entertainment in waiting area; and retail shopping.
- Site stations where host sites are open for operations at least 17 consecutive hours (e.g., 6 a.m. to 11 p.m.), each day of the week and where staff is on duty and could render assistance to disabled persons if necessary.
- Site stations where a combination of two or more businesses are located in close proximity to each other and easily accessible on foot from each other's parking lots via pedestrian walkways compliant with the ADA and that do not require crossing a public highway.
- Provide a location offering shelter from inclement weather for drivers to wait while their electric vehicle is charging.
- In mountainous areas where it snows, radiant heating should be used in concrete pads to melt the snow surrounding the equipment.

Attachment C
Oregon West Coast Electric Highway
Recommended Oregon Host Site Attributes and Selection Criteria

Oregon is working collaboratively, along with Washington, California and the Province of British Columbia, to deploy electric vehicle charging stations with DC fast charging equipment and Level 2 EVSE along key corridors that cross borders, to create a consistent experience for EV drivers along the West Coast Electric Highway (WCEH).

Common expectations for EV charging up and down the West Coast via the WCEH include charging stations being safe, convenient, with equipment that operates reliably, is easily identified, simple to use, with fair, competitive pricing. Consistent and comfortable EV charging experiences for EV drivers as they travel across states or international borders along the West Coast is an important goal of the WCEH.

To achieve this goal of consistent charging experiences, outlined below are recommended attributes for Host Sites for Oregon's West Coast Electric Highway, which will enable the creation of a consistent network of EV charging stations meeting the following requirements:

- **Compliance with laws:** Comply with all laws, federal, state, and local electrical and building codes for construction and be fully licensed to use the equipment in a publicly accessible venue.
- **Location:** As close to a highway as possible, preferably within ½ mile, but at a maximum within 3 miles.
- **Access:** Ideally, sites are open to the public 24 hours per day, 365 days per year, but under no circumstances are sites open less than 17 consecutive hours/day (e.g., 6 am – 11 pm).
- **Siting:** Locations should enable safe ingress and egress, with sufficient space for light-duty EV DCFC and Level 2 EVSE charging, and include parking spaces that are paved, adequately sized, and demonstrate compliance with ADA requirements.
- **Parking Spaces**: Paved parking spaces are required, with adequate lighting from dusk until dawn.
- **Amenities**: Ideally, sites offer EV travelers convenient access to restrooms (available during all hours of operation, if at all possible). Restrooms are expected to be modern and sanitary. In addition, the Host Sites are expected to provide access to drinking water. Ideal locations include access to other amenities such as snack food, dining and shopping options, and/or entertainment and recreation.
- **Shelter**: Where possible, select sites that offer shelter from inclement weather.
- **ADA**: Configure EV charging stations to provide ample room for those with disabilities to enter and exit their EVs comfortably, provide access ramps for wheelchair use, place charging connectors and payment mechanisms at a height that enables comfortable access for those in wheelchairs, to enable EV charging to better achieve ADA goals.

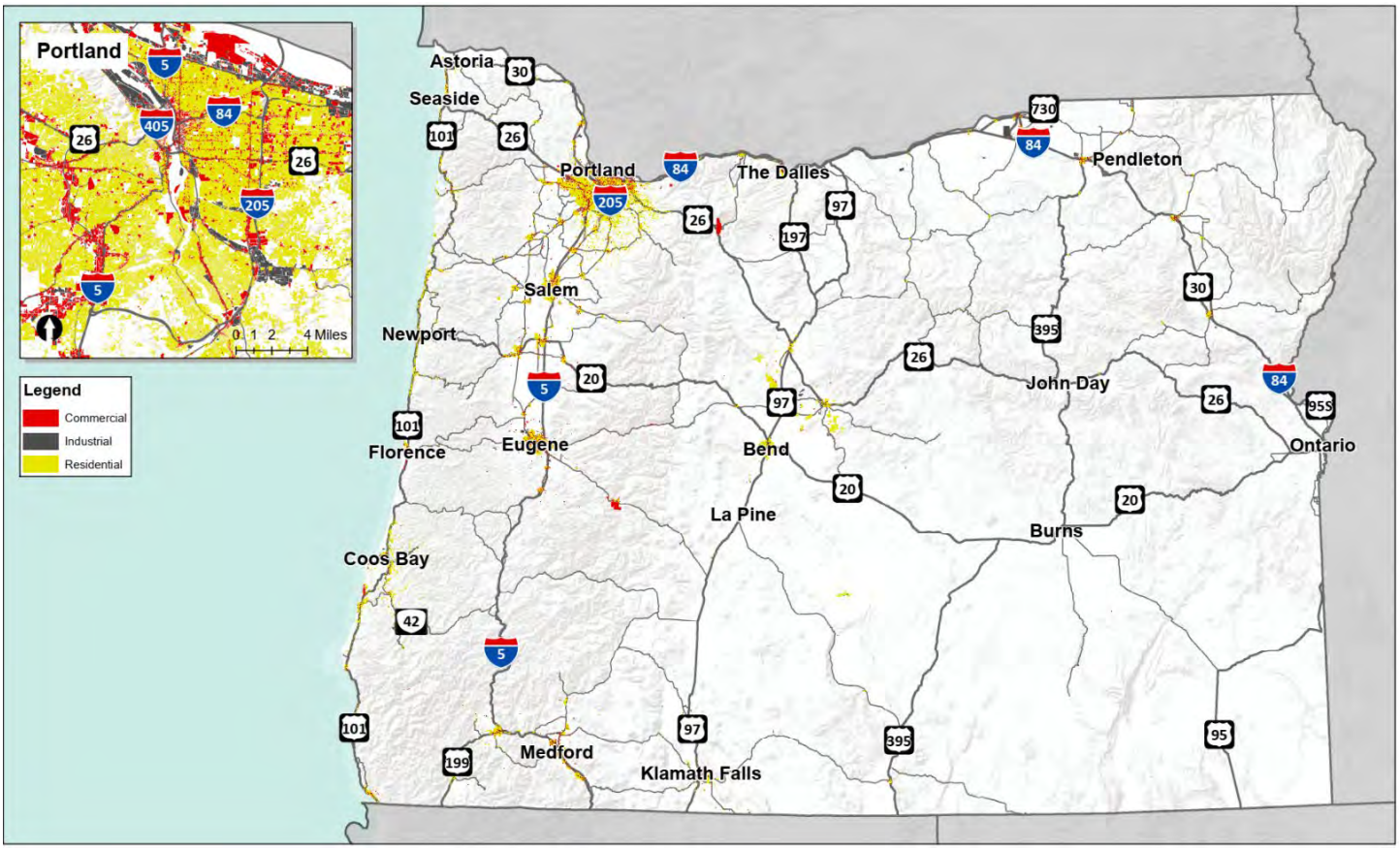
- **Customer support**: Offer clear use instructions and customer support contact information, on the equipment and/or easily accessible at the charging site location, available 24 hours per day, 7 days per week.
- **Reliability**: Be operational at least 95% of the time (striving for 99%).
- **Pricing information**: Provide clear, simple and real-time pricing /fee information prior to the start of an EV charging session. Pricing and fee information should be displayed in an easily readable matter on the charging equipment or a payment screen, and also be displayed on Operator's web page, any proprietary mobile app and public mobile apps, such as PlugShare, Apple/Google Maps and other commonly used public EV charging access sites.
- **Multiple Payment Options**: WCEH stations must offer customers multiple payment options (as specified in Attachment A, *Oregon West Coast Electric Highway Technical Specifications for DCFC and Level 2 EVSE and Requirements for Operation* of the Contract).
- **Signage:** Provide clear signage from the Highway to the EV charging site, and within the charging station Host Site, provide signage to note "EV Charging Only" parking locations.
- **Hosts:** Preference should be given to hosts who seek to attract EV drivers to their locations, and who may provide funding or amenities targeted to the needs of EV drivers.

Appendix E: Additional Supporting Analysis

Land Use

Commercial, industrial, and residential parcels throughout Oregon are shown in Figure 33. Oregon's population is primarily located in the Willamette Lowland, along the I-5 corridor. Major metropolitan areas along the corridor include Medford, Eugene, Salem, and Portland. Commercial and industrial land use patterns largely mirror this population density, with the largest concentrations in the Portland area and along the I-5 corridor. Residential parcels are also distributed along US 101, to a greater extent than most other corridors in the State.

Figure 35: Commercial, Industrial, and Residential Land Use



Weather

Snowfall

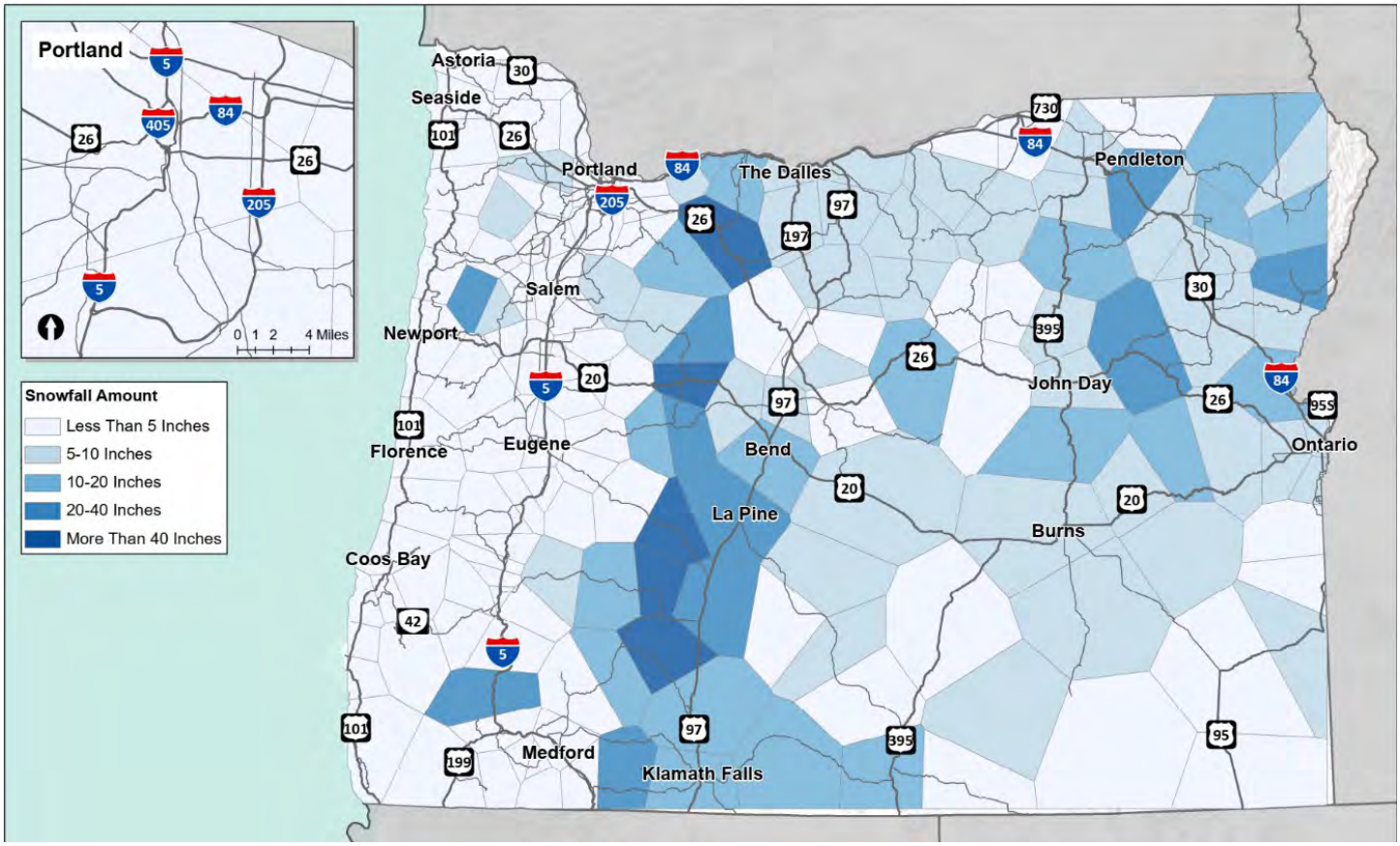
The average January snowfall throughout the State is shown in the following figure. The highest snowfall occurs throughout the Cascade Mountains, around Klamath Falls, and in northeast Oregon.

DCFC stations located along US 97 are expected to need the most snow removal and management efforts compared to the other AFCs. This is most notable along US 97 from Bend to Klamath Falls which has a relatively high level of snowfall.

I-84, US 26, and US 20 cross the Cascade Mountains and travel across Eastern Oregon, which tends to have higher levels of snowfall. Stations located along mountain passes are expected to need snow removal and management. US 26 travels along a route between Bend and Ontario that has more snowfall than US 20, which takes a route south of US 26 between Bend and Ontario.

Stations located along I-5 and US 101 are not expected to be commonly impacted by snowfall. An exception to this is on I-5 around Sexton Summit north of Grants Pass.

Figure 36: Snowfall in Oregon



Temperature

Batteries in EVs function less efficiently under very hot or very cold conditions. Temperatures west of the Cascade Mountains tend to be moderate with average low temperatures above freezing and highs in the 80s F. Temperatures east of the Cascade Mountains tend to be more extreme with low temperatures below 20 F's and high temperatures about the 90s F.

The average temperature of the coldest and hottest months across the state are shown in Figure 35 and Figure 36, respectively. Several findings emerge which ODOT and contracted EVSPs may consider relative to NEVI planning:

- I-84, US 26, and US 20 cross the Cascade Mountains and travel across Eastern Oregon, which tends to have more extreme temperatures than other areas.
- US 97 connects La Pine, Chemult, and Klamath Falls all of which have average low temperatures below 17 degrees during the coldest month of the year.
- US 101 and I-5 experience relatively moderate temperatures. An exception is on I-5 is the Sexton Summit area north of Grants Pass and the Rogue Valley/Medford area which have average low temperatures below freezing during the coldest month of the year.

Figure 37: Average Low Temperatures in Oregon

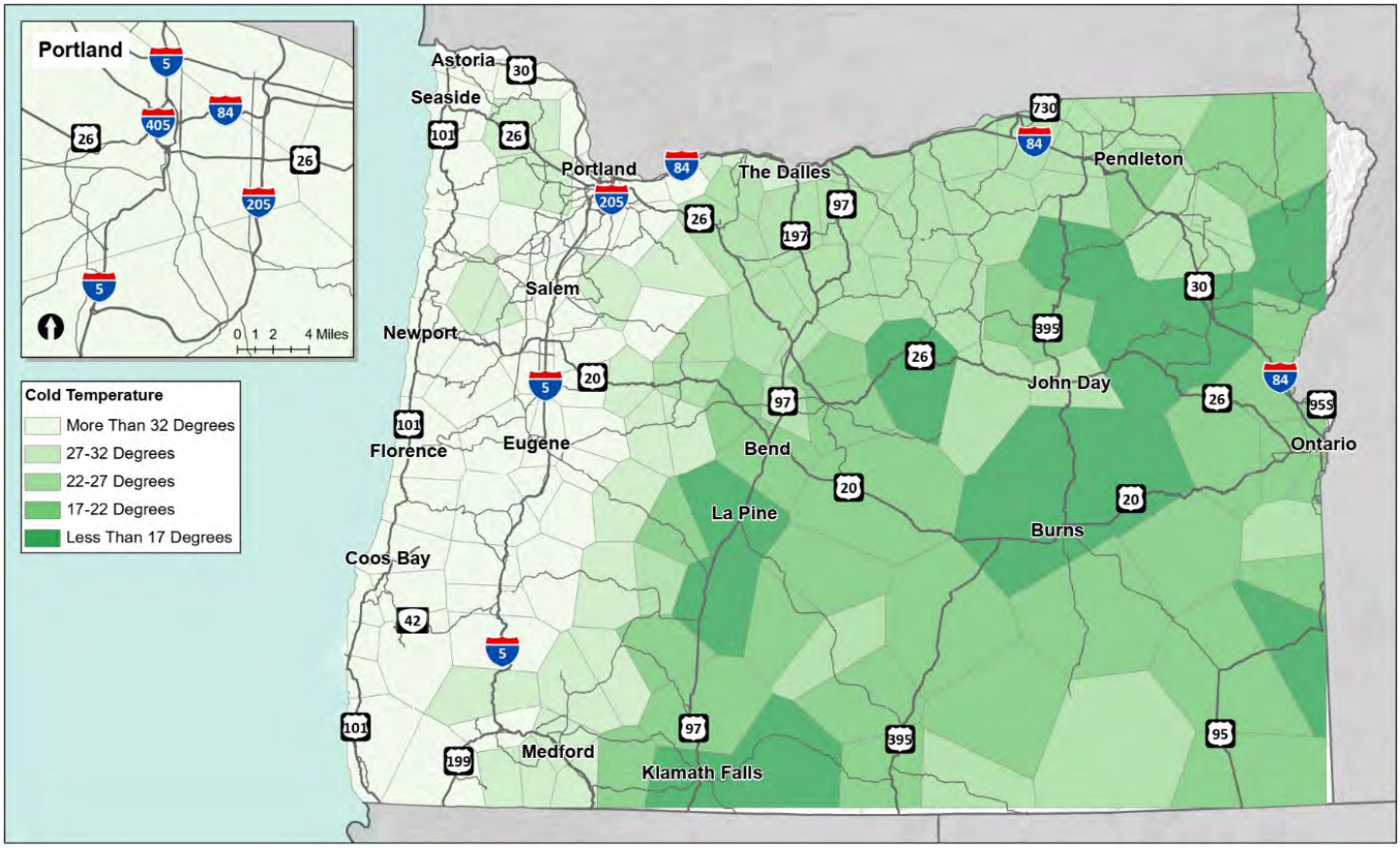
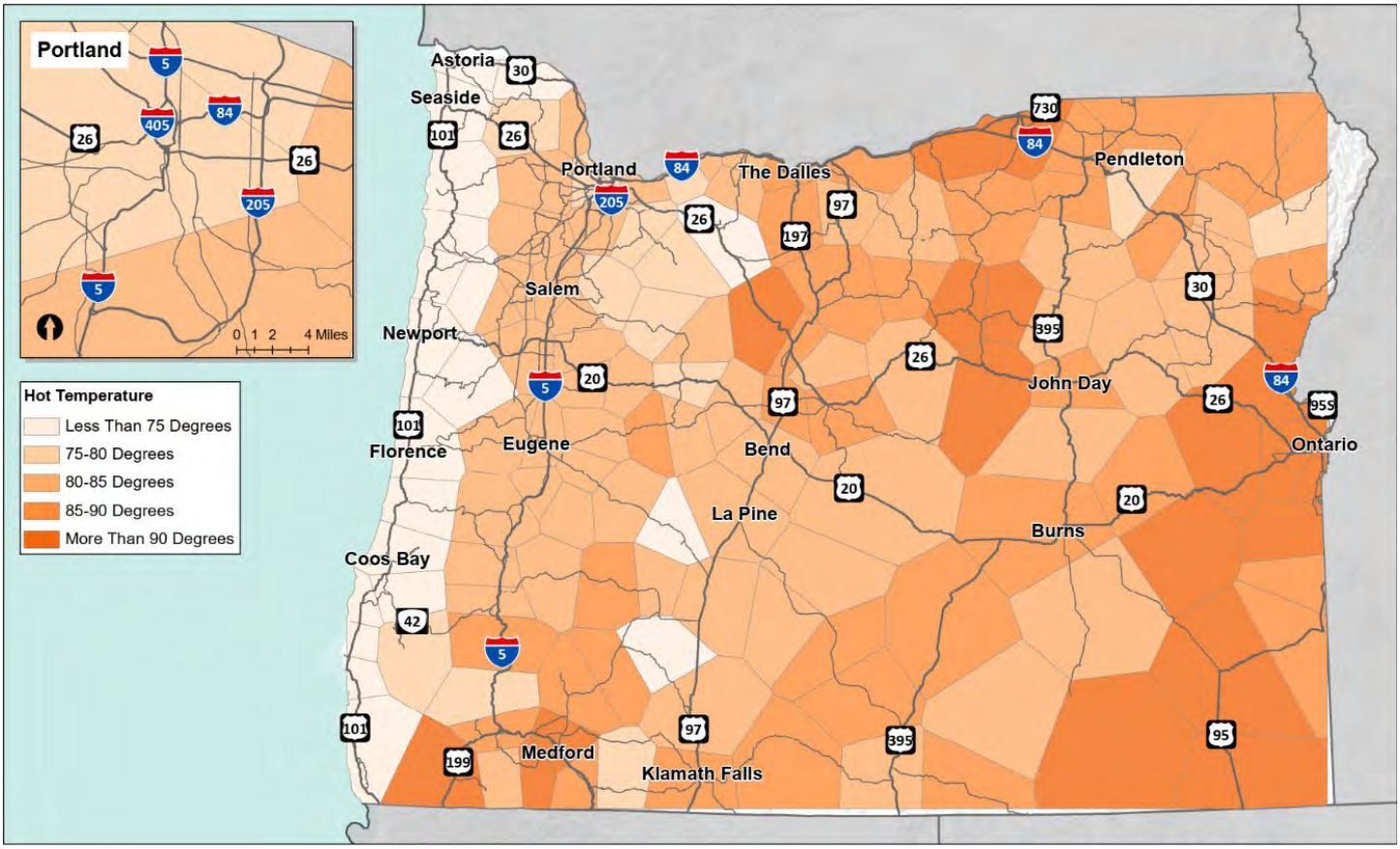


Figure 38: Average High Temperatures in Oregon



Road Grade

As with vehicles powered by an internal combustion engine, EVs must expend more energy to go uphill.

As shown in the table below, as the slope (grade) of the roadway increases, EVs expend larger amounts of energy and can be expected to need to recharge more frequently considering miles travelled. Along portions of corridors with a lot of uphill segments, charging infrastructure may need to be located more frequently or signage may need to inform drivers of upcoming steep inclines.

Slope	Equivalent Miles of Level Ground
0%	1.0
1%	1.2
2%	1.5
3%	1.8
4%	2.0
5%	2.3

To identify areas where the intervals between stations may need to be shorter to account for this, and/or locations where additional ports might be valuable to meet larger energy needs, ODOT has conducted analyses of the slope of different segments of the current EV Alternative Fuel Corridors (AFC). The chart

below summarizes this analysis, highlighting the proportion of each 50-mile segment which falls into different average slope categories.

ODOT does not expect slope to play a major role in siting EV charging stations along its FY22 corridors, given the relatively mild average slope, and will continue to assess these considerations for future year deployments along the other existing and newly-proposed AFCs. The following table describes steeper sections of AFCs that ODOT will consider when working with contractors in NEVI planning decisions to ensure that the developed network sufficiently meets EV travel needs.

AFC	Section
I-5	California border to Ashland
	Grants Pass to Canyonville
I-84	Pendleton to LaGrande
US 20	Sweet Home to Sisters
US 26	US 101 to Banks
	Sandy to Madras
	Around Mitchell (between Bend and John Day)
	Prairie City to Unity

Transportation

Heavy Vehicles

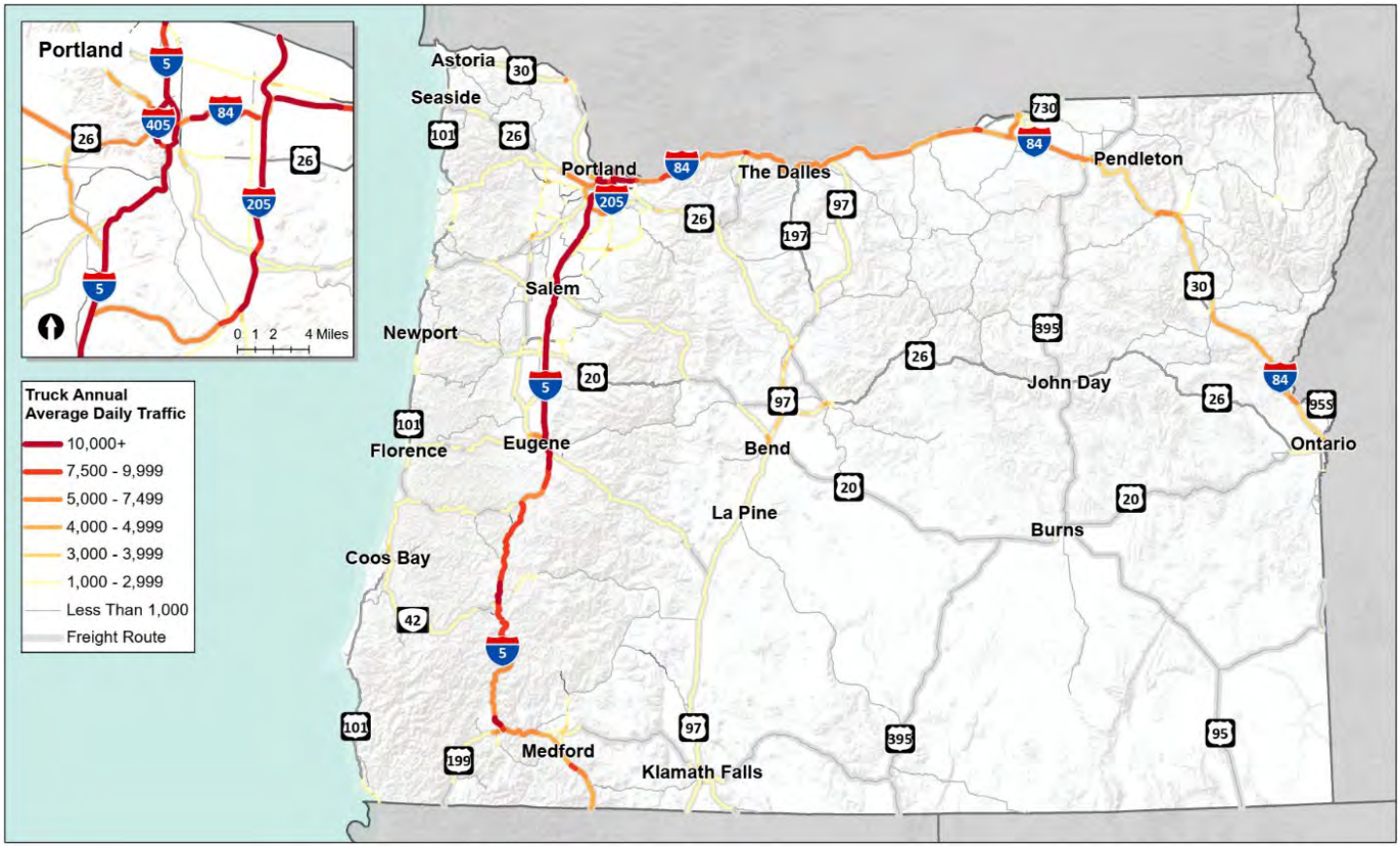
While NEVI funding is primarily focused on LDV charging, ODOT is considering how best to plan for electrified MHD vehicles as well, as highlighted in the non-LDV use cases analyzed in its 2021 TEINA report: local commercial and industrial vehicles, heavy-duty freight trucks, and both transit and school buses. One way in which ODOT envisions NEVI funding helping to address future charging needs of these vehicles is by designing stations to include pull-throughs to accommodate larger vehicles, such as the lighter and/or smaller end of the MD classes.

Additionally, the Oregon Freight Plan, most recently amended in 2017, defines the I-5, I-84, US 20, and US 97 corridors as strategically significant for major freight dependent industries. About 70% of industry outputs in ton-miles travels along I-5 and I-84, as shown in the following map of heavy vehicle AADT by highway segment across the state. The build out of these corridors with LDV charging over the next several years will help to lay the groundwork for the larger capacity charging needs these vehicles are likely to require in the coming years.

In addition to LDV AADT, ODOT also tracks AADT for heavy vehicles across the state, which shows that:

- I5, I-84, I-405, and I205 have portions of the corridor with 10,000+ daily heavy vehicle trips.
- In the Portland metropolitan area, there is more heavy vehicle traffic on I5 than I205. Nearly all of I5 from Portland to Roseburg sees 7,500+ daily heavy vehicles, whereas only a small handful of short segments on I-84 between Portland and Boardman meet this threshold.
- I-84 has the highest heavy vehicle AADT of east-west routes across the State.
- US 26, OR 22 in the Santiam River canyon, and OR 58 have the highest heavy vehicle AADT across the Cascade Mountains. East of Bend, there are more heavy vehicles on US 20 than on US 26.
- US 101 has relatively low heavy vehicle AADT.

Figure 39: Heavy Vehicle AADT



Public Transit

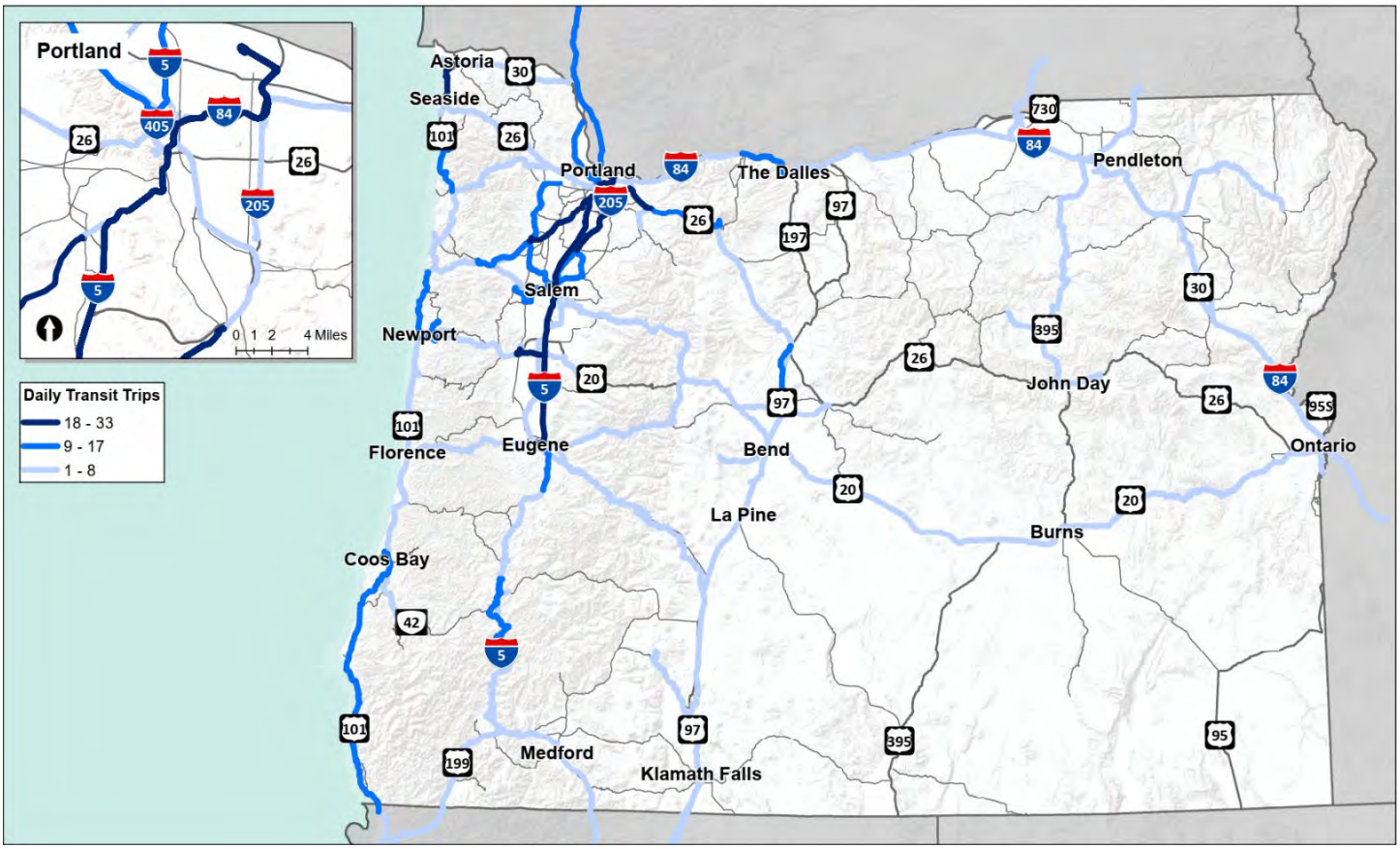
There are 64 distinct transit providers in Oregon. These include public and private services, local transit, intercity bus, rail service, trams, and streetcar. Transit service includes intracity and intercity trips. These routes are important regional connections for people living throughout the state.

Findings related to Alternative Fuel Corridors (AFC):

- Intercity transit routes travel along most of the AFCs.
- The most frequent intercity transit routes travel along the I-5 corridor between Eugene and Portland.
- Sections of US 101 are frequently served by intercity transit routes.
- As transit buses electrify in the coming years, charging infrastructure to support these routes will be needed largely in the same areas of high LDV traffic volumes.

The map below shows intercity transit routes in Oregon, along with their frequency.

Figure 40: Intercity Transit Trips



- Thirty-one providers provide a combination of local and regional service. These include large providers (such as TriMet in Portland, Cherriots in Salem, and Rogue Valley Transportation District in Medford), small community services (such as Woodburn Transit and the Malheur Council on Aging & Community Services in Ontario), and county-based services (such as Tillamook County Transportation District and Yamhill County Transit Area).

- Fourteen providers focus exclusively on intercity service. These providers are a mixture of public (such as the Columbia Gorge Express) and private (such as Bolt Bus). They also operate at various scales, from shorter intercity trips (such as the Florence Yachats Connector) to longer routes (such as the Central Oregon Breeze between Portland and Bend). Additionally, there are four different POINT intercity bus services run by ODOT (NorthWest between Portland and Astoria, Cascades between Portland and Eugene, Eastern between Bend and Ontario, and SouthWest between Klamath Falls and Brookings).

- Twelve providers focus on local shuttle service. These services are varied and serve specific destinations (such as the Washington Park Shuttle), provide service that falls outside of existing service hours for the local transit agency (Swan Island Evening Shuttle), provide connections between community college campuses (CCC Xpress), or connect small communities (Klamath Shuttle and Ride Connection).

- Three Amtrak routes (Cascades, Coast Starlight, and Empire Builder).

The following table provides a snapshot of several Oregon transit agencies pursuing electrification.

Figure 41: Transit Agencies in Oregon Pursuing Electrification (2020)[10]

Transit Agency	TriMet	South Metro Area Regional Transit (SMART)	Lane Transit District	Josephine Community Transit
Service Area	Portland Metropolitan Area	Wilsonville	Lane County	Josephine County and part of Jackson County
Electric Bus Manufacturer	New Flyer	Proterra	BYD/New Flyer*	Gillig retrofit
Number of Electric Buses	5	2	2 (2 year pilot)*	2
Type of Charging	Depot plug-in, en route pantograph	Depot plug-in	Depot plug-in	Depot plug-in, planning for inductive charging at depot

***Note:** Lane Transit District has concluded their BYD pilot test and has begun the process to acquire a total of 11 New Flyer battery electric buses that will be added to their fleet.*

[10] https://www.oregon.gov/odot/RPTD/RPTD%20Document%20Library/Transit-Electrification-Guide.pdf

Appendix F: Existing Public EV Charging on Round 1-5 Electric Alternative Fuel Corridors

The following table shows all 543 existing chargers located within one mile of Oregon's seven electric Alternative Fuel Corridors approved by FHWA in Rounds 1-5. Due to intersections between corridors, some locations are attributed to multiple routes. 125 total DCFC locations exist within one mile of electric AFCs, offering 403 ports. Additionally, there are 418 existing public L2 charging locations within one mile of these corridors, offering 988 ports. Of these, Tesla operates 19 DCFC charging stations accounting for 167 of the total DCFC ports (41%). There are also 58 Tesla Destination charging locations, where non-Tesla site hosts provide 172 Level 2 ports (17% of L2 ports along the electric AFCs).

State EV Charging Location Unique ID	Charger Level (DCFC, L2)	Route (s)	Location	Number of EV Connectors	EV Network[11]
165272	L2	US 20	Bend	2	ChargePoint
165325	L2	US 101	Seaside	4	Sema Connect
164712	L2	US 26, I-5, I-84, I-405	Portland	3	Blink
164772	DCFC	I-84	Portland	3	Blink
165589	L2	I-84	Portland	2	OpConnect
165590	L2	I-405, I-5, US 26	Portland	4	OpConnect
165501	L2	I-84	The Dalles	2	ChargePoint
165584	DCFC	I-5	Salem	2	OpConnect
165591	L2	I-405, I-5, I-84, US 26	Portland	2	OpConnect
165593	L2	I-405, I-5, US 26	Portland	2	OpConnect
166180	DCFC	US 97	Klamath Falls	1	ChargePoint
166357	L2	I-405, US 26, I-5, I-84	Portland	4	EV Connect
166179	L2	US 97	Klamath Falls	2	ChargePoint
166704	DCFC	I-84	Ontario	8	Tesla
168215	L2	I-405, I-5	Portland	2	ChargePoint
167141	L2	US 26	Gresham	1	ChargePoint
168093	L2	I-5	Keizer	2	Blink
168220	DCFC	I-205	Happy Valley	2	Blink
168226	DCFC	I-5	Wilsonville	2	Blink
168216	L2	I-405, I-5	Portland	2	ChargePoint

[11] Note that Sema Connect was recently acquired by Blink Charging.

State EV Charging Location Unique ID	Charger Level (DCFC, L2)	Route (s)	Location	Number of EV Connectors	EV Network[11]
168279	DCFC	I-5	Salem	12	Tesla
168280	DCFC	US 26	Beaverton	12	Tesla
168248	L2	US 26	North Plains	2	Blink
168278	DCFC	I-5	Medford	12	Tesla
168632	L2	US 20	Sisters	2	Tesla Destination
168823	L2	I-205	Clackamas	2	Tesla Destination
168485	DCFC	I-205	Clackamas	3	Electrify America
168512	L2	I-84	Portland	1	Blink
169217	L2	US 26	Mitchell	2	Tesla Destination
169269	L2	I-5, I-84	Portland	3	Tesla Destination
168990	L2	I-84	Portland	1	Tesla Destination
169205	L2	US 101	Tillamook	2	Tesla Destination
169458	L2	I-5	Wilsonville	2	ChargePoint
169519	L2	I-405, I-5, I-84	Portland	5	Blink
169413	DCFC	I-5	Woodburn	4	Electrify America
169520	L2	I-405, I-5, I-84	Portland	4	Blink
169989	L2	I-405, I-5, I-84, US 26	Portland	4	OpConnect
169961	L2	I-5	Salem	1	Non-Networked
170359	DCFC	I-5	Sutherlin	4	Electrify America
170369	DCFC	I-5	Springfield	4	Electrify America
170379	L2	I-84, US 26, I-405, I-5	Portland	2	OpConnect
147451	L2	I-84, I-405, I-5	Portland	1	Blink
147631	L2	I-5	Roseburg	2	ChargePoint
147850	L2	I-405, I-5, I-84	Portland	10	Sema Connect
147849	L2	I-5, I-84	Portland	4	Sema Connect
147891	L2	I-5	Wilsonville	1	Sema Connect
147920	L2	I-5	Keizer	3	Sema Connect
147886	L2	US 101	Cannon Beach	4	Sema Connect
148084	L2	I-5	Roseburg	1	Sema Connect
149409	L2	I-5	Roseburg	2	ChargePoint
147946	L2	I-5	Turner	2	Sema Connect
148082	L2	I-5	Roseburg	2	Sema Connect
149589	DCFC	US 26, I-205	Portland	6	Shell Recharge Solutions (Greenlots)
149740	DCFC	I-5	Salem	4	Electrify America
149416	L2	US 20	Corvallis	2	ChargePoint
149769	DCFC	US 26, US 97	Madras	1	ChargePoint
149754	L2	I-205, US 26	Portland	1	ChargePoint

State EV Charging Location Unique ID	Charger Level (DCFC, L2)	Route (s)	Location	Number of EV Connectors	EV Network[11]
150673	L2	US 101	Lincoln City	2	Tesla Destination
150726	L2	US 101	Yachats	2	Tesla Destination
149871	L2	I-84	Portland	2	Blink
150463	L2	US 26	Gresham	1	Blink
151869	L2	US 26	Portland	2	Volta
151890	L2	I-205	Happy Valley	2	Volta
151800	L2	I-205	Portland	2	Volta
151868	L2	I-205	Gladstone	2	Volta
154071	DCFC	US 20, US 97	Bend	1	ChargePoint
153493	L2	I-84	The Dalles	1	Non-Networked
154070	DCFC	US 20	Burns	1	ChargePoint
154413	L2	US 101	Reedsport	2	ChargePoint
154549	L2	US 26	Beaverton	19	Non-Networked
154072	L2	I-5	Central Point	2	ChargePoint
154242	L2	US 26	Portland	1	ChargePoint
155505	L2	I-84	Mosier	1	Non-Networked
156081	DCFC	US 101	Otis	1	ChargePoint
155309	DCFC	I-5	Tigard	8	Electrify America
155346	L2	I-84	Hood River	2	ChargePoint
156270	L2	I-5	Medford	1	Blink
157954	L2	US 26	Portland	2	Non-Networked
156141	L2	US 26	Portland	1	ChargePoint
156211	L2	US 20	Corvallis	2	ChargePoint
163461	L2	US 101, US 20	Newport	2	ChargePoint
163343	DCFC	I-5	Portland	4	Electrify America
163460	L2	US 101	Newport	2	ChargePoint
164091	L2	I-5	Cottage Grove	2	Sema Connect
164092	L2	I-5	Cottage Grove	2	Sema Connect
163462	L2	I-5	Salem	2	ChargePoint
164060	L2	US 26	Hillsboro	3	Blink
164423	L2	I-5, I-84, I-405	Portland	1	ChargePoint
164393	L2	US 97	Redmond	1	EV Charging Solutions
164640	L2	I-5	Eugene	2	ChargePoint
175248	DCFC	US 20, US 97	Bend	1	ChargePoint
175247	L2	US 20, US 97	Bend	2	ChargePoint
175637	DCFC	US 101	Otis	1	ChargePoint
175638	DCFC	US 101	Otis	1	ChargePoint

State EV Charging Location Unique ID	Charger Level (DCFC, L2)	Route (s)	Location	Number of EV Connectors	EV Network[11]
175527	L2	I-84	Hood River	2	ChargePoint
175636	L2	US 101	Otis	2	ChargePoint
181178	DCFC	US 97	Klamath Falls	1	ChargePoint
182480	L2	I-5	Wilsonville	2	ChargePoint
181176	DCFC	US 97	Klamath Falls	1	ChargePoint
181177	DCFC	US 97	Klamath Falls	1	ChargePoint
182854	L2	I-205	Clackamas	1	ChargePoint
182855	L2	I-205	Clackamas	1	ChargePoint
182492	L2	I-5	Lake Oswego	2	ChargePoint
182525	L2	I-5	Lake Oswego	2	ChargePoint
183037	L2	I-205, US 26	Portland	1	ChargePoint
183036	L2	I-205, US 26	Portland	1	ChargePoint
183445	L2	I-5	Salem	2	ChargePoint
183446	L2	I-5	Salem	2	ChargePoint
183151	L2	US 26	Hillsboro	2	ChargePoint
183152	L2	US 26	Hillsboro	2	ChargePoint
183449	L2	US 26	Beaverton	2	ChargePoint
183450	L2	US 26	Beaverton	2	ChargePoint
183447	L2	I-5	Medford	2	ChargePoint
183448	L2	I-5	Medford	2	ChargePoint
183627	L2	I-84	Portland	2	Blink
183650	L2	I-5	Eugene	2	ChargePoint
183613	L2	US 20, US 97	Bend	2	Blink
183653	L2	I-5	Eugene	2	ChargePoint
183654	L2	I-5	Eugene	1	ChargePoint
183651	L2	I-5	Eugene	2	ChargePoint
183652	L2	I-5	Eugene	2	ChargePoint
183737	DCFC	US 26	John Day	1	ChargePoint
183879	L2	I-405, I-5, US 26	Portland	3	Non-Networked
183655	L2	I-5	Eugene	1	ChargePoint
183670	DCFC	I-5	Wilsonville	6	Shell Recharge Solutions (Greenlots)
183962	L2	I-5	Portland	1	Blink
184042	L2	US 101	Warrenton	2	EV Connect
184333	L2	I-5	Eugene	1	Non-Networked
184334	L2	I-5	Roseburg	1	Non-Networked
184073	L2	US 101	Florence	1	ChargePoint
184137	L2	I-5	Wilsonville	2	Blink

State EV Charging Location Unique ID	Charger Level (DCFC, L2)	Route (s)	Location	Number of EV Connectors	EV Network[11]
184510	L2	US 20, US 97	BEND	4	Non-Networked
184443	L2	US 97	Bend	2	Non-Networked
184444	L2	US 20	Sisters	2	Non-Networked
184512	L2	I-84, I-5	Porland	4	Non-Networked
185410	DCFC	I-205	Happy Valley	2	Volta
184511	L2	US 97	Crescent	4	Non-Networked
185633	L2	I-205	Happy Valley	1	Blink
186307	L2	I-5, OR-42, OR-42/OR-99	Roseburg	4	Blink
185446	L2	I-5, I-84	Portland	2	ChargePoint
186410	L2	US 26	Hillsboro	7	Blink
186629	L2	I-205	Clackamas	2	ChargePoint
170922	DCFC	I-5, I-84, I-405, US 26	Portland	3	Shell Recharge Solutions (Greenlots)
170454	DCFC	US 26	Hillsboro	2	Blink
170955	L2	US 97, US 20	Bend	2	ChargePoint
171262	L2	I-5, I-84	Portland	2	ChargePoint
171478	L2	US 101	Florence	1	ChargePoint
171720	L2	I-405, I-5, US 26	Portland	1	ChargePoint
171416	L2	I-5	Roseburg	2	Blink
171722	L2	I-405, I-5, I-84, US 26	Portland	2	ChargePoint
171887	L2	I-405, I-5, I-84, US 26	Portland	2	ChargePoint
171989	L2	I-5	Salem	2	ChargePoint
171990	L2	I-5	Salem	2	ChargePoint
172062	L2	I-405, I-5, I-84, US 26	Portland	2	ChargePoint
171991	L2	I-5	Salem	2	ChargePoint
172057	L2	I-5	Portland	2	ChargePoint
172063	L2	I-405, I-5, I-84, US 26	Portland	2	ChargePoint
172233	L2	I-5, I-84	Portland	2	ChargePoint
172651	L2	I-84, I-5	Portland	2	ChargePoint
172652	L2	I-5, I-84	Portland	2	ChargePoint
172422	L2	I-5	Woodburn	2	ChargePoint
174496	L2	US 97	Redmond	2	ChargePoint
174511	L2	I-5	Salem	2	ChargePoint
173614	L2	I-5	Woodburn	1	ChargePoint
174514	L2	I-5	Salem	2	ChargePoint
174515	L2	I-5	Salem	2	ChargePoint
174512	L2	I-5	Salem	2	ChargePoint
174513	L2	I-5	Salem	2	ChargePoint

State EV Charging Location Unique ID	Charger Level (DCFC, L2)	Route (s)	Location	Number of EV Connectors	EV Network[11]
174771	L2	I-205, US 26	Portland	1	ChargePoint
174516	L2	I-5	Salem	2	ChargePoint
174517	L2	I-5	Salem	2	ChargePoint
174779	DCFC	US 26, US 97	Madras	1	ChargePoint
174778	DCFC	US 26, US 97	Madras	1	ChargePoint
174781	L2	US 26, US 97	Madras	2	ChargePoint
174780	DCFC	US 26, US 97	Madras	1	ChargePoint
175246	DCFC	US 20, US 97	Bend	1	ChargePoint
175245	DCFC	US 20, US 97	Bend	1	ChargePoint
195298	L2	I-205, I-84	Portland	1	Sema Connect
194988	L2	US 101	Newport	3	OpConnect
195170	L2	I-5	Medford	1	Sema Connect
195420	L2	I-405, I-5, I-84, US 26	Portland	2	Sema Connect
195300	L2	US 26	Portland	2	Sema Connect
195317	L2	I-5	Cottage Grove	6	Sema Connect
195421	L2	US 26	Hillsboro	2	Sema Connect
195500	L2	I-405, I-5, I-84	Portland	1	Sema Connect
195501	L2	I-5, I-84	Portland	2	Sema Connect
195556	L2	US 26, I-405, I-5	Portland	2	Sema Connect
195557	L2	I-405, I-5, US 26	Portland	6	Sema Connect
195560	L2	I-5	Tigard	2	Sema Connect
195566	L2	US 20	Lebanon	1	Sema Connect
195917	L2	US 20	Corvallis	2	ChargePoint
195938	L2	I-205, I-5	Tualatin	1	Blink
195579	L2	I-5	Medford	2	Sema Connect
195849	L2	US 20	Bend	1	OpConnect
195939	L2	I-5, I-205	Tualatin	2	Blink
196153	L2	I-84	Portland	1	Blink
196421	L2	I-5, US 26, I-405	Portland	1	Blink
196234	L2	US 20	Corvallis	2	ChargePoint
197608	L2	I-5, I-84, I-405, US 26	Portland	2	ChargePoint
196560	L2	I-5	Roseburg	2	ChargePoint
198234	DCFC	I-5	Portland	2	EVgo
198642	DCFC	I-84	Portland	2	EVgo
198005	DCFC	I-5	Myrtle Creek	8	Tesla
198649	DCFC	I-5	Portland	2	EVgo
199422	L2	US 20, US 97	Bend	2	ChargePoint

State EV Charging Location Unique ID	Charger Level (DCFC, L2)	Route (s)	Location	Number of EV Connectors	EV Network[11]
198645	DCFC	I-405	Portland	1	EVgo
198646	DCFC	I-84	Wood Village	1	EVgo
199560	L2	I-205	West Linn	2	Non-Networked
200559	L2	I-5, I-84	Portland	2	ChargePoint
199491	L2	US 26	Portland	2	ChargePoint
200955	DCFC	I-84	Hood River	8	Tesla
201424	DCFC	I-84	Portland	4	Electrify America
200571	L2	I-5	Wilsonville	2	ChargePoint
202011	L2	US 26	Hillsboro	2	Blink
202555	L2	US 26	Gresham	2	ChargePoint
201875	L2	US 26	Portland	3	Blink
201882	L2	I-5	Salem	2	Sema Connect
203110	L2	I-405, I-5, US 26	Portland	1	Blink
202556	L2	US 26	Gresham	2	ChargePoint
202557	L2	US 26	Gresham	2	ChargePoint
186860	DCFC	US 101	Newport	4	Electrify America
186907	L2	US 26	Hillsboro	4	Volta
186834	L2	I-84	Pendleton	2	ChargePoint
186835	DCFC	I-84	Pendleton	1	ChargePoint
187216	L2	I-84, I-405, I-5	Portland	1	Blink
187749	L2	I-405, I-5, I-84	Portland	7	Blink
189287	L2	US 20	Corvallis	2	ChargePoint
189288	L2	US 20	Corvallis	2	ChargePoint
189778	L2	I-5	Eugene	2	Non-Networked
190100	DCFC	US 101	Warrenton	4	Electrify America
189318	L2	I-5	Portland	3	Sema Connect
189776	L2	I-5	Eugene	6	Non-Networked
190708	L2	I-405, I-5, I-84, US 26	Portland	2	ChargePoint
190192	DCFC	US 97	Bend	4	Electrify America
190363	L2	US 97	Klamath Falls	2	ChargePoint
190729	L2	US 101	Tillamook	1	ChargePoint
190801	DCFC	US 101	Tillamook	1	ChargePoint
190895	L2	I-5	Medford	2	ChargePoint
190899	L2	US 20	Toledo	2	ChargePoint
190807	DCFC	US 20	Hines	8	Tesla
190853	L2	I-84	Hood River	1	OpConnect
191225	L2	I-84, I-5	Portland	2	ChargePoint

State EV Charging Location Unique ID	Charger Level (DCFC, L2)	Route (s)	Location	Number of EV Connectors	EV Network[11]
191226	L2	I-5, I-84	Portland	2	ChargePoint
191044	L2	I-84	Hood River	1	OpConnect
191431	L2	I-405, I-5	Portland	2	ChargePoint
191401	L2	US 20	Toledo	2	ChargePoint
191671	L2	US 20	Toledo	2	ChargePoint
192710	L2	US 26	Portland	1	Blink
191470	L2	I-405, I-5	Portland	2	Blink
193051	L2	I-5	Portland	2	ChargePoint
193052	L2	I-5	Portland	2	ChargePoint
193043	L2	I-205	Milwaukee	2	Blink
193050	L2	I-5	Portland	2	ChargePoint
193062	L2	I-5	Portland	2	ChargePoint
193063	L2	I-5	Portland	2	ChargePoint
193060	L2	I-5	Portland	2	ChargePoint
193061	L2	I-5	Portland	2	ChargePoint
193067	L2	US 101	Tillamook	1	ChargePoint
193114	DCFC	US 101	Tillamook	1	ChargePoint
193064	L2	I-5	Portland	2	ChargePoint
193065	L2	I-5	Portland	2	ChargePoint
193445	L2	I-5	Lake Oswego	2	ChargePoint
193446	L2	I-405, I-5, US 26	Portland	2	ChargePoint
193268	L2	US 20	Corvallis	6	Blink
193270	L2	US 20	Corvallis	6	Blink
193503	L2	I-205	Clackamas	2	ChargePoint
193504	L2	I-5	Salem	2	ChargePoint
194204	L2	I-5, I-84, I-405	Portland	2	OpConnect
193982	L2	I-5	Eugene	2	Blink
204404	L2	I-5, I-84, I-405, US 26	Portland	2	ChargePoint
204650	L2	I-84, I-5	Portland	1	Sema Connect
205108	L2	I-5	Portland	1	Blink
205577	L2	I-405, I-5, US 26	Portland	3	Sema Connect
205154	DCFC	I-5	Wolf Creek	2	EVCS
205567	DCFC	I-84	Troutdale	8	Tesla
71851	DCFC	I-5	Medford	1	ChargePoint
71852	DCFC	I-5	Grants Pass	1	ChargePoint
66525	L2	US 20	Corvallis	2	ChargePoint
71288	L2	US 20	Corvallis	1	ChargePoint

State EV Charging Location Unique ID	Charger Level (DCFC, L2)	Route (s)	Location	Number of EV Connectors	EV Network[11]
72279	DCFC	I-84, I-5	Portland	1	ChargePoint
72280	DCFC	I-5, US 20	Albany	1	ChargePoint
71917	DCFC	I-5	Roseburg	1	ChargePoint
73406	DCFC	I-5	Halsey	2	EV Charging Solutions
73407	DCFC	I-5	Cottage Grove	2	EV Charging Solutions
73276	L2	I-5	Woodburn	2	ChargePoint
73411	DCFC	I-84	Hood River	2	EV Charging Solutions
73416	DCFC	US 101	Astoria	2	EV Charging Solutions
73408	DCFC	I-5	Grants Pass	2	EV Charging Solutions
73410	DCFC	US 20	Sisters	2	EV Charging Solutions
73424	DCFC	US 101	Lincoln City	2	EV Charging Solutions
73425	DCFC	I-84	Cascade Locks	2	EV Charging Solutions
73419	DCFC	US 101	Florence	2	EV Charging Solutions
73423	DCFC	US 26	Welches	2	EV Charging Solutions
73429	DCFC	US 101	Reedsport	2	EV Charging Solutions
73436	DCFC	US 101	Tillamook	2	EV Charging Solutions
73426	DCFC	US 101	Yachats	2	EV Charging Solutions
73428	DCFC	US 26	Warm Springs	2	EV Charging Solutions
73440	DCFC	I-5	Albany	2	EV Charging Solutions
73441	DCFC	US 97	Redmond	1	EV Charging Solutions
73438	DCFC	US 101	Cannon Beach	2	EV Charging Solutions
73439	DCFC	US 101	Coos Bay	2	EV Charging Solutions
73472	L2	I-5	Grants Pass	1	Non-Networked
73916	L2	I-5, I-84	Portland	2	ChargePoint
73443	DCFC	I-84	The Dalles	2	EV Charging Solutions
73444	DCFC	US 26	Government Camp	2	EV Charging Solutions
74212	DCFC	US 97, US 26	Madras	3	OpConnect
74696	DCFC	I-205	Portland	1	ChargePoint
77347	DCFC	US 26, US 97	Madras	2	EV Charging Solutions
74705	L2	I-405, US 26	Portland	2	ChargePoint
77350	DCFC	US 101	Brookings	2	EV Charging Solutions
78953	L2	I-5, I-84	Portland	2	ChargePoint
77348	DCFC	US 101	Port Orford	2	EV Charging Solutions
77349	DCFC	I-5	Woodburn	2	EV Charging Solutions
79135	L2	I-5, I-84, I-405, US 26	Portland	6	Non-Networked
79184	L2	US 26, I-405	Portland	2	ChargePoint
79220	L2	I-5	Salem	2	ChargePoint

State EV Charging Location Unique ID	Charger Level (DCFC, L2)	Route (s)	Location	Number of EV Connectors	EV Network[11]
81378	L2	I-5, I-84	Portland	2	ChargePoint
79303	L2	US 101	Seaside	2	ChargePoint
80057	DCFC	US 26	Portland	1	ChargePoint
82087	L2	I-84, US 26, I-405, I-5	Portland	2	ChargePoint
86878	L2	I-405, I-5, I-84, US 26	Portland	2	ChargePoint
85386	L2	US 26	Portland	2	ChargePoint
85666	L2	I-5	Portland	2	ChargePoint
33378	L2	I-5, US 26, I-405	Portland	2	Non-Networked
35557	L2	I-5, I-84, I-405, US 26	Portland	1	Non-Networked
35258	L2	US 101	Lincoln City	2	ChargePoint
37651	L2	I-405, I-5, US 26	Portland	1	Non-Networked
36371	L2	I-5	Eugene	10	Non-Networked
39830	L2	US 20	Corvallis	1	Non-Networked
39832	L2	I-205	Gladstone	1	Non-Networked
39828	DCFC	US 20	Bend	3	Non-Networked
39840	DCFC	I-84	The Dalles	3	Non-Networked
39841	L2	I-5	Wilsonville	2	Non-Networked
39838	L2	I-84	Portland	1	Non-Networked
39839	L2	I-5	Salem	1	Non-Networked
40777	L2	I-205	Clackamas	1	Non-Networked
41085	L2	I-5	Ashland	3	Non-Networked
40752	L2	I-5	Ashland	3	Non-Networked
40765	L2	I-5	Wilsonville	1	Non-Networked
44247	L2	I-84	Portland	1	Non-Networked
44251	L2	I-5	Salem	1	Non-Networked
44228	L2	US 20	Corvallis	1	Non-Networked
44233	L2	I-205	Gladstone	1	Non-Networked
50714	L2	I-405, I-5, I-84, US 26	Portland	2	OpConnect
44255	L2	I-5	Wilsonville	3	Non-Networked
47064	L2	I-5	Portland	1	Non-Networked
53039	L2	I-84	Hood River	1	ChargePoint
53694	L2	US 101	Seal Rock	1	Non-Networked
56771	L2	US 26, I-405, I-5	Portland	1	ChargePoint
58336	L2	US 101	Coos Bay	1	ChargePoint
60919	L2	I-84, US 26, I-405, I-5	Portland	2	ChargePoint
60943	L2	I-84, US 26, I-405, I-5	Portland	2	ChargePoint
62984	DCFC	I-84	Arlington	3	OpConnect

State EV Charging Location Unique ID	Charger Level (DCFC, L2)	Route (s)	Location	Number of EV Connectors	EV Network[11]
63646	L2	US 26	Sandy	2	Non-Networked
62810	L2	US 97	Bend	2	ChargePoint
62982	DCFC	I-5	Tigard	3	OpConnect
65857	DCFC	I-5	Ashland	2	EV Charging Solutions
65858	DCFC	I-5	Wolf Creek	2	EV Charging Solutions
65855	DCFC	I-5	Central Point	2	EV Charging Solutions
65856	DCFC	I-5	Roseburg	2	EV Charging Solutions
65867	DCFC	US 20, US 101	Newport	2	EV Charging Solutions
65871	DCFC	I-5	Oakland	2	EV Charging Solutions
65863	DCFC	I-5	Springfield	2	EV Charging Solutions
65927	L2	I-5, I-405	Portland	2	OpConnect
65944	L2	I-5	Wilsonville	2	Non-Networked
65872	DCFC	I-5	Canyonville	2	EV Charging Solutions
102370	DCFC	I-84	Baker City	8	Tesla
102371	DCFC	US 97	Bend	8	Tesla
99177	L2	US 26, I-5, I-84, I-405	Portland	8	Shell Recharge Solutions (Greenlots)
99778	L2	US 101	Tillamook	1	Shell Recharge Solutions (Greenlots)
102377	DCFC	I-84	Pendleton	8	Tesla
102379	DCFC	US 26	Sandy	8	Tesla
102373	DCFC	I-5	Grants Pass	8	Tesla
102375	DCFC	US 101	Lincoln City	8	Tesla
102384	DCFC	I-5	Woodburn	8	Tesla
103921	L2	US 20	Burns	1	Non-Networked
102380	DCFC	US 101	Seaside	8	Tesla
102382	DCFC	I-5	Springfield	14	Tesla
103976	L2	I-5	Medford	2	Non-Networked
103996	L2	US 20	Sisters	1	Non-Networked
103959	L2	US 101	Cannon Beach	1	Non-Networked
103974	L2	I-84	La Grande	1	Non-Networked
104257	DCFC	I-5, US 20	Albany	1	Non-Networked
103997	L2	I-5	Talent	2	Non-Networked
104060	L2	I-84	Portland	4	Blink
104259	DCFC	US 20, US 101	Newport	2	Non-Networked
104260	L2	US 101, US 20	Newport	1	Non-Networked
104258	L2	US 101	Bandon	1	Non-Networked
104264	L2	US 101	Reedsport	1	Non-Networked
104743	L2	US 26	Mitchell	1	Non-Networked

State EV Charging Location Unique ID	Charger Level (DCFC, L2)	Route (s)	Location	Number of EV Connectors	EV Network[11]
104261	L2	US 101	North Bend	1	Non-Networked
105364	DCFC	I-5	Medford	4	Non-Networked
115345	L2	I-5	Ashland	2	Tesla Destination
105038	L2	US 101	Tillamook	6	Non-Networked
105207	L2	I-5	Woodburn	1	ChargePoint
115350	L2	US 97, US 20	Bend	3	Tesla Destination
115352	L2	US 20, US 97	Bend	2	Tesla Destination
115349	L2	US 101	Bandon	2	Tesla Destination
115355	L2	US 20, US 97	Bend	2	Tesla Destination
115354	L2	US 97	Bend	3	Tesla Destination
115361	L2	US 101	Cannon Beach	5	Tesla Destination
115362	L2	US 101	Cannon Beach	5	Tesla Destination
115359	L2	US 97	Bend	4	Tesla Destination
115360	L2	US 101	Cannon Beach	2	Tesla Destination
115365	L2	US 20	Corvallis	4	Tesla Destination
115366	L2	US 20	Corvallis	3	Tesla Destination
115363	L2	US 101	Cannon Beach	2	Tesla Destination
115364	L2	US 101	Coos Bay	2	Tesla Destination
115376	L2	US 101	Florence	4	Tesla Destination
115380	L2	US 101	Gleneden Beach	8	Tesla Destination
115371	L2	US 101	Depoe Bay	1	Tesla Destination
115375	L2	US 101	Florence	4	Tesla Destination
115392	L2	I-5	Medford	3	Tesla Destination
115397	L2	US 101	Port Orford	2	Tesla Destination
115381	L2	I-84	Hood River	3	Tesla Destination
115382	L2	US 26	John Day	1	Tesla Destination
115399	L2	I-5	Portland	5	Tesla Destination
115400	L2	I-405, US 26, I-5, I-84	Portland	6	Tesla Destination
115398	L2	I-5, I-84	Portland	5	Tesla Destination
115401	L2	I-405, I-5, US 26	Portland	2	Tesla Destination
86879	L2	I-405, I-5, I-84, US 26	Portland	2	ChargePoint
86955	L2	US 101	Lincoln City	2	ChargePoint
93767	L2	I-5	Ashland	1	Non-Networked
95067	L2	I-5, I-84	Portland	4	Blink
94513	L2	US 97	Bend	1	ChargePoint
94873	L2	I-205	Clackamas	2	EV Connect
95161	L2	US 26	Gresham	1	Blink

State EV Charging Location Unique ID	Charger Level (DCFC, L2)	Route (s)	Location	Number of EV Connectors	EV Network[11]
95226	L2	I-405, I-5, I-84	Portland	4	Blink
95158	L2	I-405, US 26	Portland	2	Blink
95299	DCFC	I-205, I-5	Tualatin	2	Blink
95628	L2	US 26	Hillsboro	2	Blink
95750	L2	I-405, US 26, I-5, I-84	Portland	2	Blink
95357	L2	I-84	Hood River	2	Blink
95404	DCFC	US 26	Sandy	2	Blink
95751	L2	I-405, US 26, I-5, I-84	Portland	1	Blink
95918	L2	US 20	Corvallis	2	Blink
95943	L2	I-205	Oregon City	4	Blink
95944	L2	US 26	Hillsboro	2	Blink
95938	L2	US 26	Portland	4	Blink
95940	L2	I-84	Portland	2	Blink
96083	L2	I-5	Salem	2	Blink
96129	L2	I-205	Happy Valley	1	Blink
95946	L2	I-5	Tigard	2	Blink
95947	L2	I-84	Portland	4	Blink
96302	DCFC	I-5	Salem	3	Blink
96386	L2	I-5	Portland	3	Blink
96150	L2	US 26	Beaverton	1	Blink
96198	L2	I-5	Medford	2	Blink
96417	L2	US 20	Corvallis	2	Blink
96490	L2	US 20	Corvallis	2	Blink
96408	DCFC	I-5	Tigard	2	Blink
96409	L2	US 26	Portland	1	Blink
96564	L2	I-405, I-5, I-84, US 26	Portland	3	Blink
96491	L2	I-5, I-84	Portland	1	Blink
96565	L2	I-405, I-5, I-84, US 26	Portland	7	Blink
98387	L2	I-84	Wood Village	2	Blink
98546	L2	US 97	Redmond	1	Non-Networked
98753	L2	I-405	Portland	2	ChargePoint
121708	DCFC	I-84	Hermiston	4	Electrify America
121710	DCFC	I-84	Island City	4	Electrify America
118929	L2	US 26, I-5, I-84, I-405	Portland	2	Blink
121124	DCFC	I-5	Wilsonville	1	ChargePoint
121714	DCFC	I-84	Huntington	4	Electrify America
121724	DCFC	I-5	Grants Pass	4	Electrify America

State EV Charging Location Unique ID	Charger Level (DCFC, L2)	Route (s)	Location	Number of EV Connectors	EV Network[11]
121713	DCFC	I-5, US 20	Albany	4	Electrify America
122262	DCFC	I-84	The Dalles	5	Tesla
122520	L2	US 101	North Bend	2	Tesla Destination
122244	DCFC	OR-42S, US 101	Bandon	8	Tesla
122869	L2	I-5, I-84, I-405, US 26	Portland	4	Blink
122521	L2	US 101	Tolovana Park	4	Tesla Destination
123149	L2	US 97, US 20	Bend	4	EV Connect
123150	L2	I-5	Lake Oswego	3	EV Connect
123284	L2	US 26	Hillsboro	2	Non-Networked
123290	L2	US 26	Hillsboro	4	Non-Networked
123276	L2	US 26	Beaverton	8	Non-Networked
123280	L2	US 26	Beaverton	10	Non-Networked
123297	L2	US 26	Beaverton	12	Non-Networked
123304	L2	I-405, I-5, I-84	Portland	3	Non-Networked
123291	L2	US 26	Hillsboro	2	Non-Networked
123296	L2	US 26	Beaverton	3	Non-Networked
123406	L2	I-205, I-84	Portland	1	Non-Networked
137157	L2	US 26	Beaverton	2	Volta
137158	L2	US 26	Beaverton	2	Volta
123768	DCFC	I-84	Hood River	4	Electrify America
125761	L2	US 97	Bend	6	Blink
137160	L2	I-205, I-5	Tualatin	2	Volta
137159	L2	I-205, I-5	Tualatin	2	Volta
145284	L2	US 20	Corvallis	1	Non-Networked
145302	L2	I-5	Lake Oswego	3	EV Connect
143409	L2	I-5	Canyonville	2	ChargePoint
143468	DCFC	I-205	Gladstone	1	ChargePoint
145305	L2	I-5	Lake Oswego	4	EV Connect
145306	L2	I-5	Lake Oswego	3	EV Connect
145303	L2	I-5	Lake Oswego	3	EV Connect
145304	L2	I-5	Lake Oswego	3	EV Connect
145309	L2	I-205	Portland	4	Tesla Destination
145310	L2	I-205	Portland	1	Non-Networked
145307	L2	I-5	Lake Oswego	3	EV Connect
145308	L2	I-5	Lake Oswego	4	Non-Networked
145623	L2	US 20	Lebanon	2	Non-Networked
145624	L2	I-5	Woodburn	2	Non-Networked

State EV Charging Location Unique ID	Charger Level (DCFC, L2)	Route (s)	Location	Number of EV Connectors	EV Network[11]
145507	L2	US 20	Philomath	2	ChargePoint
145563	L2	US 97	Redmond	2	ChargePoint
145688	L2	US 20	Bend	1	Non-Networked
145689	L2	US 97	Bend	2	Non-Networked
145626	L2	US 26	Hillsboro	4	Non-Networked
145631	L2	US 20	Lebanon	2	Non-Networked
146971	L2	US 101	Newport	2	ChargePoint
147028	DCFC	I-84	Troutdale	4	Electrify America
145742	L2	I-5	Salem	2	ChargePoint
146656	L2	I-5	Myrtle Creek	2	ChargePoint
115402	L2	I-5, I-84	Portland	4	Tesla Destination
115403	L2	US 26, I-405, I-5	Portland	3	Tesla Destination
115404	L2	I-405, US 26, I-5, I-84	Portland	2	Tesla Destination
115405	L2	I-405, US 26, I-5, I-84	Portland	1	Tesla Destination
115406	L2	I-405, US 26, I-5, I-84	Portland	2	Tesla Destination
115407	L2	I-405, I-5, US 26	Portland	2	Tesla Destination
115408	L2	I-405, US 26	Portland	4	Tesla Destination
115409	L2	I-84, US 26, I-405, I-5	Portland	2	Tesla Destination
115411	L2	I-84, US 26, I-405, I-5	Portland	6	Tesla Destination
115413	L2	I-5, I-84, I-405, US 26	Portland	8	Tesla Destination
115412	L2	I-5	Portland	2	Tesla Destination
115417	L2	I-5	Salem	3	Tesla Destination
115421	L2	US 20	Sisters	1	Tesla Destination
115415	L2	US 26	Prairie City	2	Tesla Destination
115425	L2	US 101	Tillamook	2	Tesla Destination
115426	L2	US 101	Waldport	5	Tesla Destination
115423	L2	I-5	Springfield	2	Tesla Destination
115424	L2	I-5	Sutherlin	3	Tesla Destination
115429	L2	US 101	Yachats	3	Tesla Destination
117115	L2	US 26	Gresham	2	Volta
115427	L2	US 101	Waldport	3	Tesla Destination
115428	L2	US 26	Welches	1	Tesla Destination
117118	L2	I-205	Happy Valley	2	Volta
117119	L2	I-205	Happy Valley	2	Volta
117116	L2	I-205	Happy Valley	2	Volta
117117	L2	I-205	Happy Valley	2	Volta
117121	L2	I-84, I-205	Portland	2	Volta

State EV Charging Location Unique ID	Charger Level (DCFC, L2)	Route (s)	Location	Number of EV Connectors	EV Network[11]
117124	L2	I-5	Tigard	2	Volta
117120	L2	I-205	Happy Valley	2	Volta
117276	L2	I-405, I-5, US 26	Portland	6	Non-Networked
117125	L2	I-5	Tigard	2	Volta
117126	L2	I-84	Troutdale	2	Volta