

Electric vehicle charging in the public right-of-way

Portland City Council

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PBOT
PORTLAND BUREAU OF TRANSPORTATION

Overview

- Transportation decarbonization strategy
- Electric Vehicles 101
- PBOT's EV Charging in the Right-of-Way project:
 - City-wide framework for where EV chargers would be permitted
 - City Council action amends Title 16, directs PBOT to update Administrative Rules, and directs PBOT to implement policy
 - Installation of EV chargers begins to occur later in '23-'24
- Questions and testimony

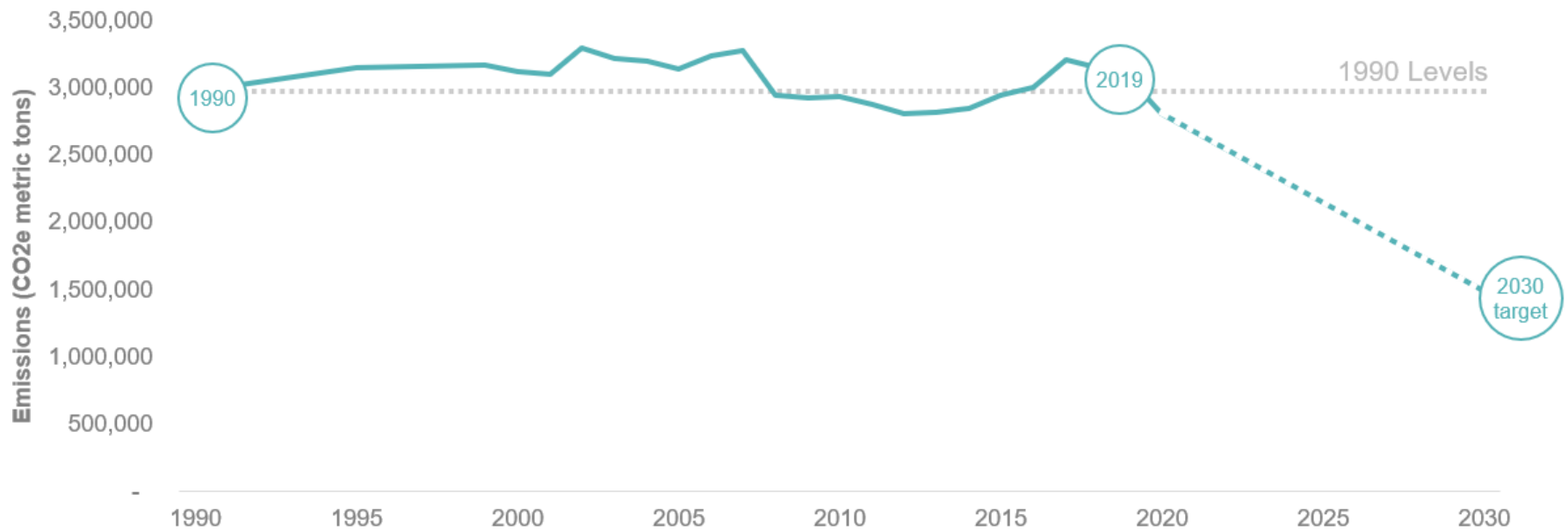


Source: BPS

Transportation decarbonization strategy

Portland's transportation emissions are up 3% since 1990 – we're off track and need to change trajectory fast

Transportation Emissions Trends (1990-2019)
Multnomah County

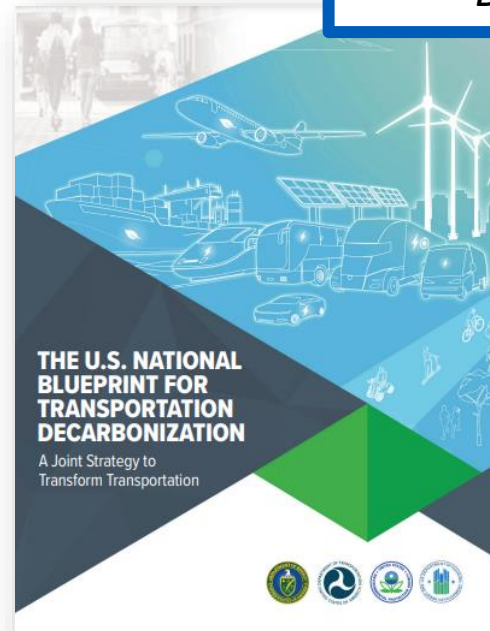


Source: PBOT

U.S. Federal government has prioritized electrification above all else

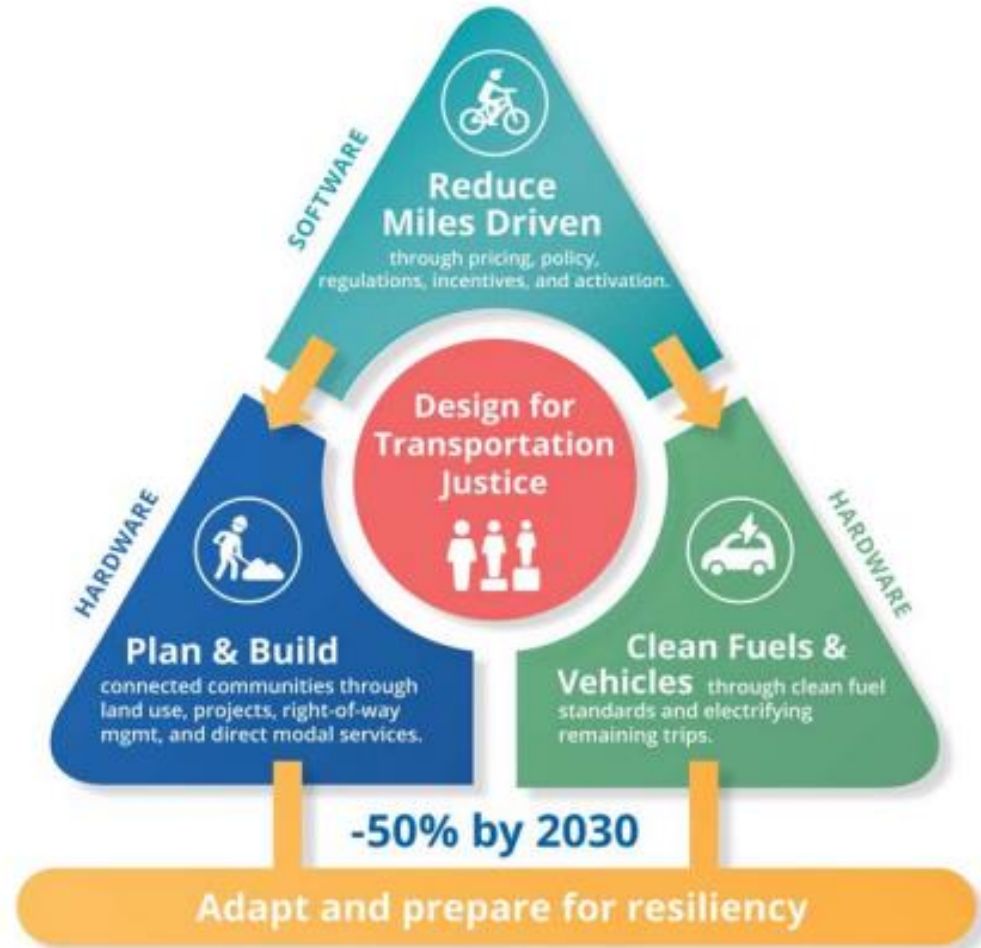
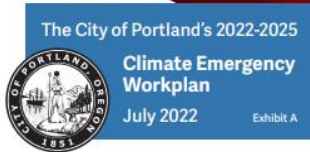
- Bipartisan Infrastructure Law allocated **\$7.5 billion for EV charging throughout the U.S.**
- Oregon Department of Transportation will spend **at least \$100 million for EV charging** in Oregon
- Changes to Portland City Code and Administrative Rule changes will **position the city to benefit from these funds and continue to be a national leader in transportation decarbonization**

*"...transitioning to clean options is expected to drive the majority of emissions reductions."
- The U.S. National Blueprint for Transportation Decarbonization*



Policy mandates guide the City in pursuing electrification and EV charging

We are living in a **climate emergency**.
It's time for Portland to act like it.



Source: PBOT, BPS

Citywide toolbox of transportation electrification solutions



Sources: BPS, PGE, City of Vancouver B.C., Streetcar, TriMet, BIKETOWN

Electric Vehicle 101

Speeds of electric vehicle charging infrastructure

Level 1



Level 2



Level 3: "DC Fast Charging"



Source: Forth, U.S Dept. of Transportation

Speeds of electric vehicle charging infrastructure

Level 1



- **Use case:** At-home charging
- **Power:** Uses a typical 110-volt grounded outlet; 1 kW output
- **Charging time:** 30-50 hours

Level 2



- **Use case:** Suited for home, work, and public settings
- **Power:** Uses a 208 to 240-volt outlet; 7-19 kW output
- **Charging time:** 4-8 hours

Level 3: "DC Fast Charging"



- **Use case:** Public settings
- **Power:** Uses a 480-volt outlet
- **Charging time:** Up to 80% within 20-30 minutes

Source: Forth, U.S Dept. of Transportation

Types of Level 2 EV chargers allowed curbside



Pedestal L2 charger in Kansas City, MO



Pole-mounted L2 charger in SE PDX

Source: Metro Energy, PGE

The cost of electric vehicles is coming down

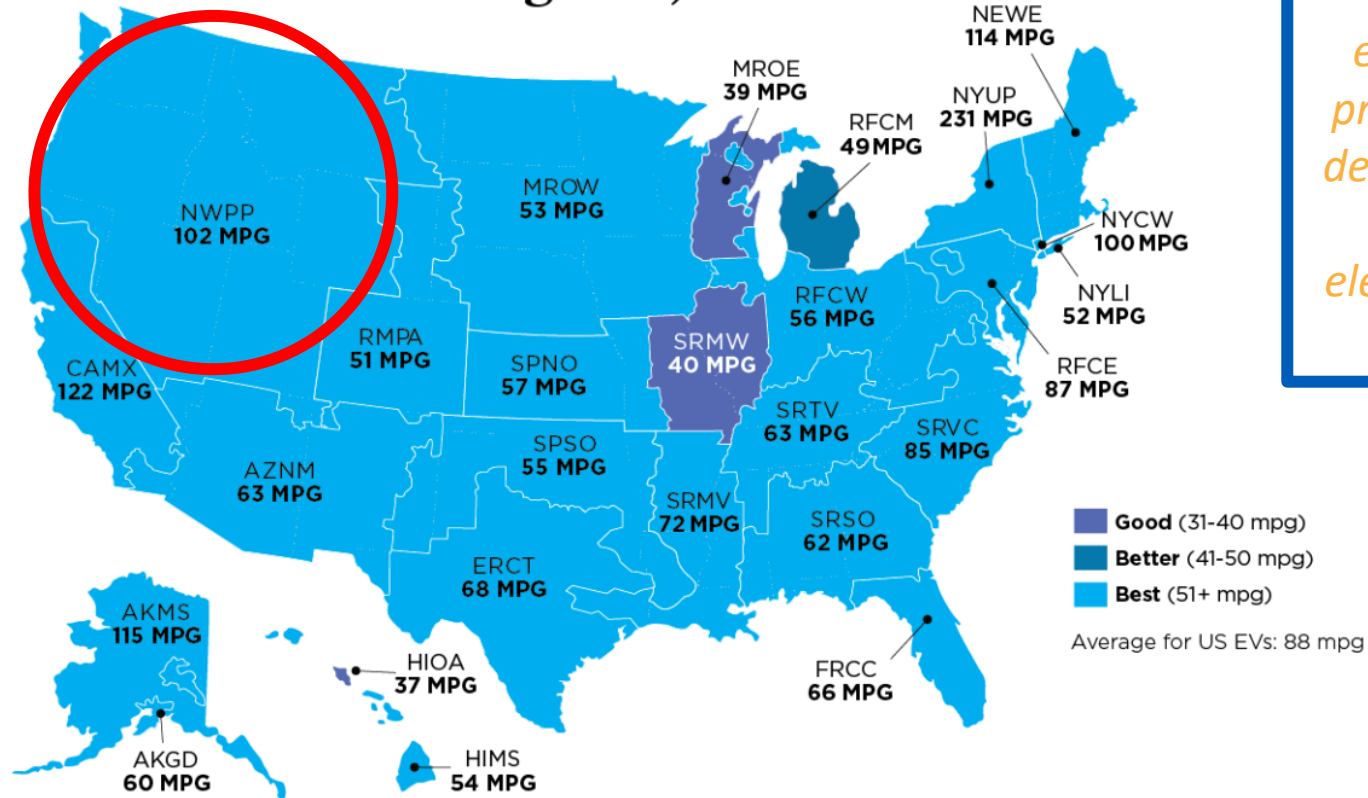


In late 2022, you could buy...	Used Nissan Leaf 2016 with 55,000 miles	Used Chevrolet Sonic 2016 with 55,000 miles
Dealer price	\$16,990	\$10,995
Oregon Charge Ahead Rebate	-\$5,000	- \$0
Inflation Reduction Act used EV federal tax credit	-\$4,000	- \$0
TOTAL	\$7,990	\$10,995

Source: Dealerships

EVs reduce emissions today, even if electrical grid still uses fossil fuels

EV Emissions as Gasoline MPG Equivalent Average EV, 2018

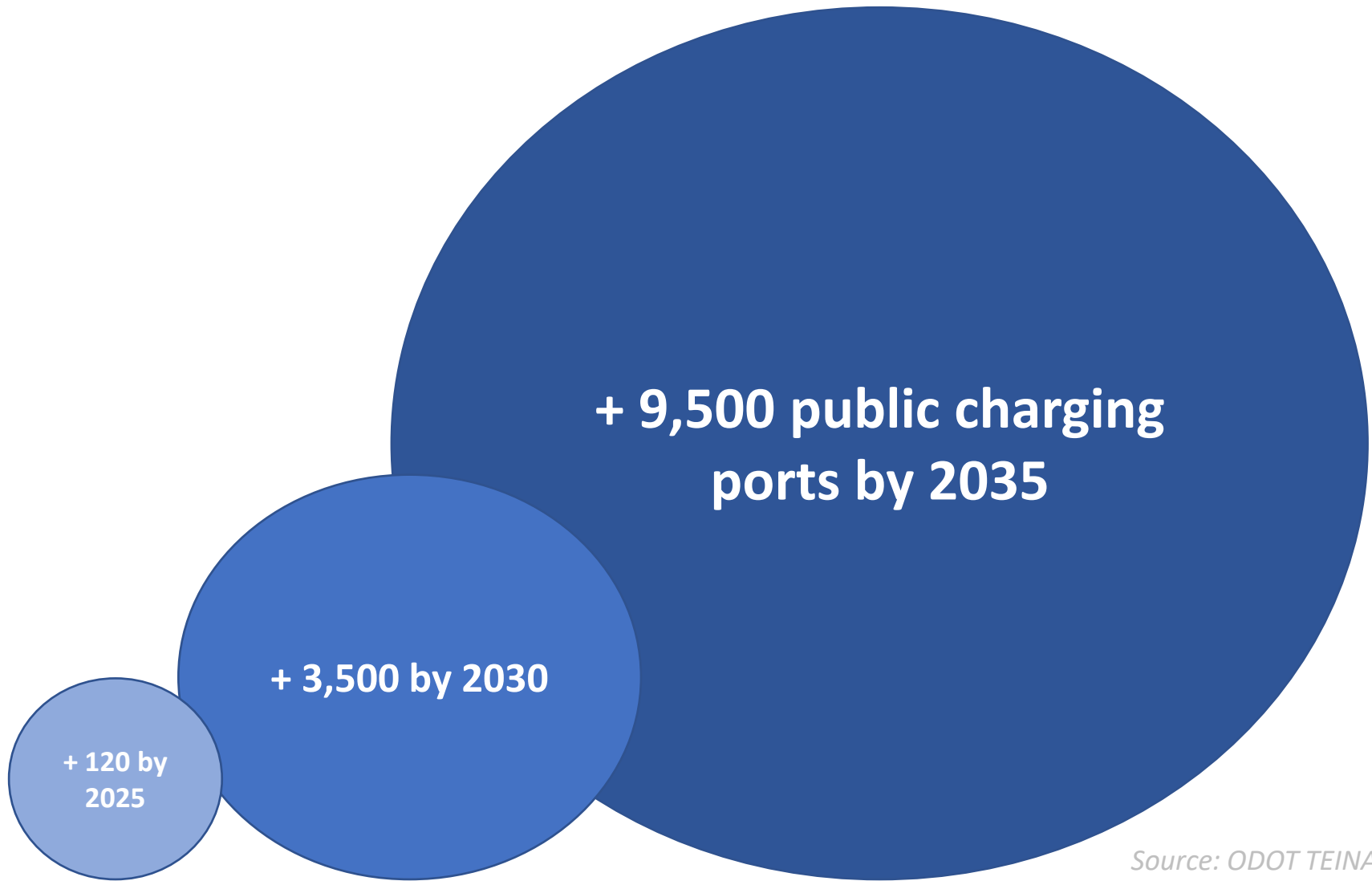


HB 2021 requires Oregon electricity providers to deliver 100% clean electricity by 2040

© Union of Concerned Scientists

Avg gas truck: 19 mpg Avg gas car: 32 mpg EV in the PNW: 102 mpg equivalent

Additional public charging ports needed in Portland to meet estimated demand



Source: ODOT TEINA Report

PBOT's EV Charging in the ROW project

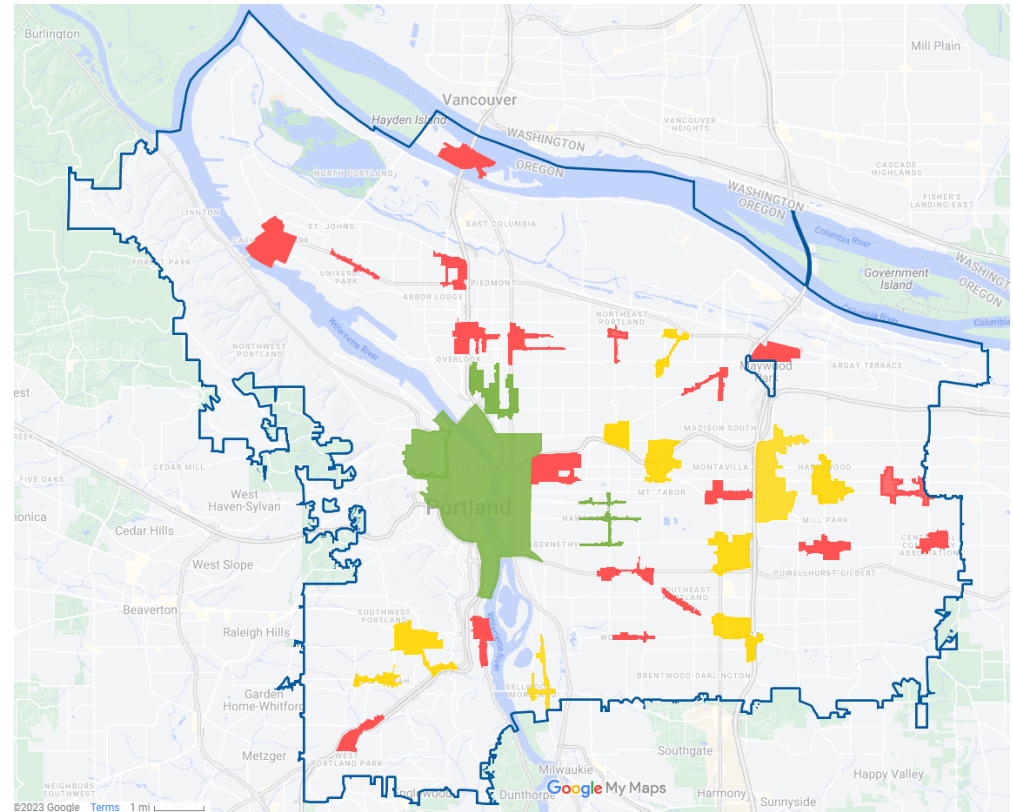
Access to EV chargers in Portland is not currently equitable

Current public EV charging infrastructure in Portland:

- Over 1/3 of public chargers are in the Central City
- Fewer chargers near multi-unit dwellings & other parts of City

PBOT wants to support the growth of a citywide EV charging network with a focus on areas that:

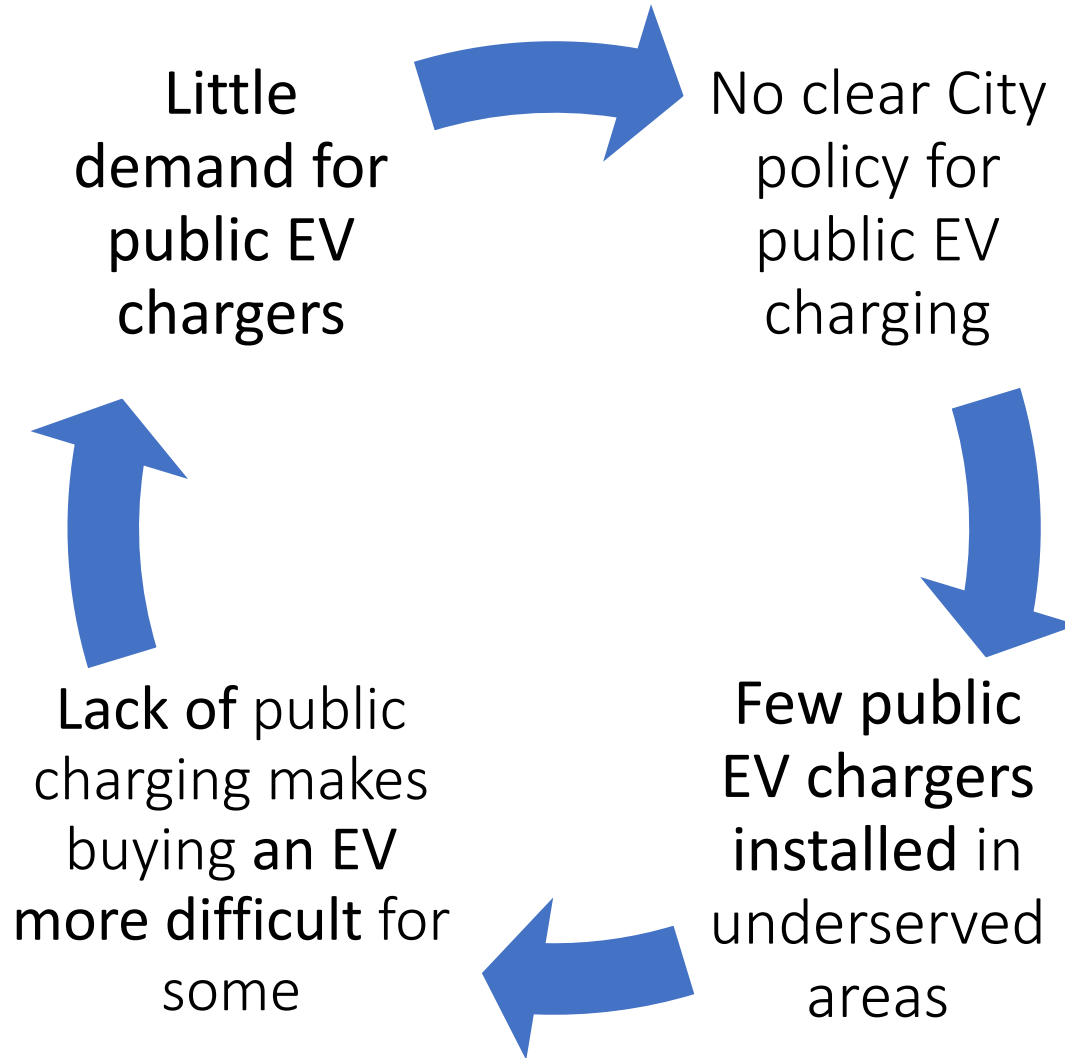
- Currently lack charging infrastructure
- Are likely to continue relying on personal vehicles
- Renters and other Portlanders who cannot charge at home



Centers in **red** have 0 (zero) public EV chargers
Centers in **yellow** have 1-5 public EV chargers
Centers in **green** have 5+ public EV chargers

Source: PBOT

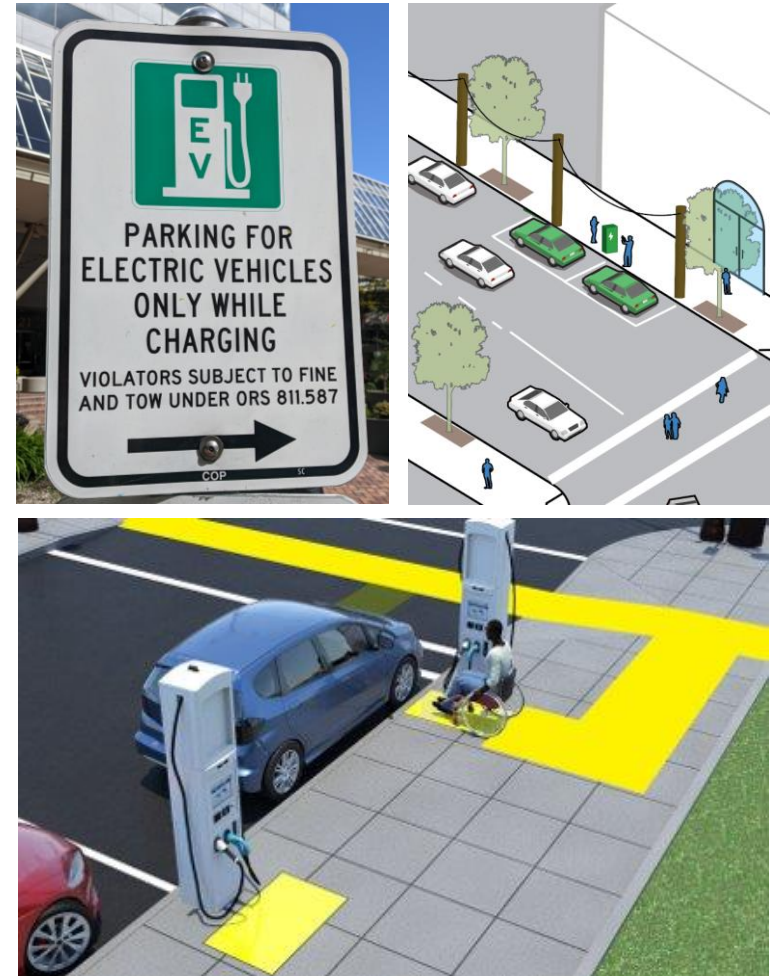
"Chicken & Egg" problem creates equity issues – which City can solve



EV Charging in the Right-of-Way project provides clarity to market

Level 2 EV chargers will be allowed curbside and on poles if they meet the following requirements:

- Within a Center, excluding the Central City
- On a Local Service Street
- Clearance requirements for health, life, safety
- Design for accessibility by all Portlanders
- Parking standards to ensure clarity for public and to promote turnover



Source: PBOT, U.S. Access Board

Next steps and questions

- **PBOT's next steps:**
 - Amend Administrative Rules and finalize permit process
 - Negotiate legal agreements with charging companies
 - Open application for permits and start installing EV chargers
 - Continue to compete for federal infrastructure funds
 - Provide progress report to Council in 2024
- **Questions from City Council**
- **Invited & Public Testimony**



Questions and discussion