City of Renton

Electric Vehicle Implementation Plan

June 2023

Prepared by Cascadia Consulting Group

CITY OF RENTON
WASHINGTON

Acknowledgments

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Glossary

Acronym/Key Term	Definition
Charging Station	Infrastructure designed specifically to charge batteries within electric vehicles. A charging station consists of one or more individual chargers.
Clean Economy Strategy (CES)	Renton's climate action and adaptation plan, aimed at transitioning towards a sustainable and low-carbon economy. The original plan was adopted in 2011 and the City's update to the plan is anticipated in 2023.
Environmental Health Disparity (EHD)	Differences in health outcomes due both to exposure to environmental hazards and to social factors, such as age, race, and income, that predict community vulnerability to health risks.
Electric Vehicle (EV)	Vehicles powered by electricity. This report does not consider hybrid vehicles or electric bikes in its definition of EVs.
Greenhouse Gas (GHG) Emissions	Heat-trapping gases, such as carbon dioxide (CO2), methane (CH4), and nitrous oxide (N2O), that cause climate change.
Hybrid Vehicle	Vehicles that have both an internal combustion engine and an electric motor. They can be fueled by both gasoline and electricity.
Level 1 Charger	The simplest electric vehicle charger. Level 1 chargers operate on a standard 120-volt alternating current (AC) power outlet and are the slowest type of electric vehicle charger. Level 1 chargers are commonly used in residential settings.
Level 2 Charger	Produces a faster charging rate compared to Level 1 chargers. Level 2 chargers require a dedicated 240-volt AC power outlet and are commonly found in public locations; sometimes they are found in residential settings.
Level 3 Charger	Also known as Direct Current Fast Charger (DCFC), Level 3 chargers are the fastest type of charger commonly available for electric vehicles. Level 3 chargers are typically found in public locations.
Puget Sound Energy (PSE)	The energy utility company that serves most of Renton. PSE offers several tools to assist cities with EV infrastructure build-out.
Seattle City Light (SCL)	The public utility providing electricity to Seattle and parts of its metro area. It serves only a small part of Renton, but Renton is eligible for some electrification assistance.
Washington State Department of Transportation (WSDOT)	The state agency tasked with managing transportation infrastructure. This includes planning for EV charging infrastructure, alongside the Department of Commerce and EV Council. WSDOT published the Washington State Plan for Electric Vehicle Infrastructure Deployment in 2021.

Executive Summary

Transitioning to electric vehicles (EV) is a key strategy to address climate change. In June 2022, the City of Renton was awarded funding from the Washington State Department of Commerce to identify strategies that reduce greenhouse gas emissions and vehicle miles travelled.[1] The purpose of the Renton Electric Vehicle Implementation Plan (Plan) is to support future public EV infrastructure investments and support the City in reducing its GHG emissions. The Plan contains recommendations across two broad components:

- **Community EV Charging Plan:** Identifies areas of Renton where the City can install community EV charging stations to meet demand for charging and reduce barriers to EV adoption. This Plan does not address ongoing management of EV chargers or recommend incentives or specific strategies to promote community EV adoption.
- **City Fleet EV Transition Plan:** Provides recommendations for a strategic, phased transition of the City fleet from gasoline-powered vehicles to EVs. It summarizes information about the current City fleet, lists potential EV options, and includes a decision-making tool to identify candidate vehicles for transition.

Community EV Charging Plan

To develop the Community EV Charging Plan, the project team summarized local EV charging infrastructure and EV-related plans and policies; engaged the community and the City to hear their priorities for new charging stations; analyzed criteria; and made recommendations.

Key Findings

The planning process revealed three key reasons why investing in EV charging stations can help Renton meet its GHG emissions reduction goals.

- **Forty percent of Renton's GHG emissions come from transportation.** Most (62%) of these come from on-road vehicles (see Introduction and Purpose section).
- **State legislation requires a transition to EVs and points to a need for more EV infrastructure.** In 2022, the state adopted rules that by 2035, 100 percent of passenger cars and light- and medium-duty vehicles sold will be EVs (see State Planning Landscape section).[2]
- **Survey respondents rated vehicle range and charging concerns as key barriers to EV ownership.** The top obstacles preventing respondents from buying EVs are: the number of miles the vehicle can go before it needs to be charged (59.4%); costs involved with buying, owning, and maintaining an EV (56.5%); and charging logistics, "where and when I'd be able to charge it" (50.7%) (see Barriers to EV Charging and Ownership section).

[1] *Climate Change - Washington State Department of Commerce*
[2] *WAC173-423-400Jan18 - Washington State Department of Ecology, 2022*

There are some EV chargers in Renton already. Most are functional and accessible (see Existing Infrastructure section).

- **There are 45 publicly available charging stations and 143 total chargers in Renton.** One is a Level 1 charger, 126 are Level 2 chargers, and 16 are Level 3 chargers. These numbers are expected to increase when new development is proposed, as required by recent updates to the Washington State Building Code.
- **Most chargers in Renton (127, 89%) have J1772 plugs**, a type of Level 1 or Level 2 plug that all EVs except Teslas can use. In addition, 9 plugs are CCS Combo, which is becoming the industry standard Level 3 plug; 5 plugs are CHAdeMO, an older type of Level 3 charger; and 2 plugs are Tesla/Tesla Supercharger.
- **Ten percent of the total EV charging stations that appear on online applications for EV drivers are slow, broken, or not publicly available.**

Summary of Recommendations

Based on community and City staff feedback, we recommend installing chargers to:

- **Support equity** by prioritizing areas near multifamily housing and in areas with high Environmental Health Disparity ratings,
- **Support EV charging at points of interest** for the community, particularly in commercial areas that can support retail areas and local jobs.

We also recommend installing chargers at City-owned properties for ease of installation, including publicly accessible City buildings, parks, parking lots, and rights-of-way.

There are 34 recommended charging sites listed in Table 1. The table describes whether community members and City staff members expressed support for each site and which goal each site supports (equity and/or points of interest). Gene Coulon Park and Sunset Neighborhood Park have votes from both community members and City staff and achieve both EV charging goals (see Recommendations for Community EV Charging Sites section).

In addition to the recommended sites, rights-of-way are an excellent option for EV charging stations. These can be highly visible and accessible locations for chargers and can lead to significant installation cost savings. In addition, streetlight poles are likely to have electrical connections. It was not in scope for this project to evaluate specific rights-of-way for feasibility.

The recommended locations to site EV charging stations to meet both charging infrastructure goals overlap significantly, particularly in the downtown area. The City may want to further strategize how many charging stations to site within the areas highlighted in this document.

Table 1. Recommended EV charging sites

Site Name	Address	Community vote?	City vote?	Support equity?	At point of interest?
Burnett Linear Park	502 Burnett Ave S	Yes			Yes
Cedar River Natural Area	1500 Houser Way S	Yes		Yes	
Cedar River Park	1715 SE Maple Valley Hwy	Yes		Yes	
City Center Parking Garage	655 S 2nd St		Yes	Yes	Yes
Don Persson Renton Senior Activity Center	211 Burnett Ave N	Yes	Yes		Yes
Downtown Parking Lot	218 Main Ave S		Yes	Yes	Yes
Downtown Parking Lot	255 Logan Ave S (approx.)		Yes	Yes	Yes
Downtown Parking Lot	321 Burnett Ave S (approx.)		Yes	Yes	Yes
Downtown Parking Lot	416 Burnett Ave S (approx.)		Yes	Yes	Yes
Downtown Parking Lot	320 Wells Ave S		Yes	Yes	Yes
Downtown Parking Lot	200 Mill Ave S (approx.)		Yes	Yes	Yes
Edlund/Korum Park	17600 103rd Ave SE	Yes	Yes	Yes	
Gene Coulon Memorial Park	1201 Lake Washington Blvd N	Yes	Yes	Yes	Yes
Henry Moses Aquatic Center	1717 SE Maple Valley Hwy		Yes	Yes	
Highlands Library	2801 NE 10th Street	Yes			Yes
Highlands Park Neighborhood Center	800 Edmonds Ave NE		Yes	Yes	
Kennydale Beach Park	3601 Lake Washington Blvd N	Yes			Yes
Liberty Park	1101 Bronson Way N	Yes		Yes	
Maplewood Golf Course	4050 SE Maple Valley Hwy	Yes	Yes		Yes
Meadow Crest Early Learning Center	1800 Index Ave NE	Yes			Yes
Philip Arnold Park	720 Jones Ave S	Yes		Yes	
Renton City Hall	1055 S Grady Way		Yes	Yes	Yes
Renton Civic Theater	507 S 3rd St		Yes		Yes
Renton Community Center	1715 SE Maple Valley Hwy	Yes	Yes		Yes
Renton High School	400 S 2nd St	Yes			Yes
Renton Library	100 Mill Ave S	Yes	Yes		Yes
Renton Memorial Stadium	405 Logan Ave N	Yes	Yes		Yes
Renton Pavilion Event Center	233 Burnett Ave S		Yes		Yes
Renton Visitor Center at Chamber of Commerce	625 S 4th St		Yes		Yes
Ron Regis Park	1501 Orcas Ave SE	Yes	Yes		Yes
Southport	1133 Lake Washington Blvd N		Yes		Yes
Sunset Neighborhood Park	2680 Sunset Ln NE	Yes	Yes	Yes	Yes
Talbot Hill Reservoir Park	1900 Talbot Rd S		Yes	Yes	
The Landing	828 N 10th Pl	Yes	Yes	Yes	Yes

Recommended next steps for the City include: 1) further assess feasibility of each of these sites; 2) continue to engage community, both broadly and around individual EV charging sites; and 3) plan for installation and ongoing use and maintenance of each site (see Next Steps for Community Charger Implementation section).

City Fleet EV Transition Plan

To develop the City Fleet EV Transition Plan, the project team summarized the City's fleet, engaged the City around staff priorities for a fleet transition and EV charger siting, researched charging infrastructure needs and EV replacement options, analyzed criteria that align the EV transition with city priorities and practices, and made recommendations.

Key Findings

The majority of Renton's fleet are viable candidates to transition within the next five years.

- **Sixty percent of the fleet are viable candidates to transition to EVs within the next five years**, out of Renton's total fleet of 611 vehicles and equipment.
- **The most common types viable to transition to EVs in the next five years (making up 50% of viable vehicles) are police vehicles, pick-up trucks, and standard SUVs**. Police vehicles make up 20 percent of Renton's fleet and will require specialized assessment to transition effectively.
- **Thirty-eight percent of Renton's fleet is recommended for transition by the start of 2027,** with three percent of the fleet transitioning in 2023/2024 and 35 percent transitioning in 2026.

The following criteria are used to prioritize vehicles for the City fleet transition:

Fleet Inventory Criteria
Vehicle/Equipment Age: Age of the vehicle/equipment, calculated as 2023 - model year.
Impact: Fuel Efficiency: A proxy for absolute emissions reduction for a single vehicle/ equipment, based on federal CAFE standards by type.
Impact: Bulk Opportunity: Number of similar vehicles/equipment in current fleet that could be transitioned to EVs together.

EV Market Criteria
Supply: Number of comparable EV options available during year of interest, by type.
Range: Miles per full charge; a way to evaluate whether a work shift may be disrupted by needing to charge.
Purchase Cost: Cost difference between vehicle/equipment and comparable EV type (original cost - average cost of EV type, in 2023 dollars).
EV Efficiency: MPGe (mpg of gasoline-equivalent), averaged by type.

Vehicle and charging infrastructure options are available for the City to choose from.

- There are one or more EV alternatives for 15 of the City's 28 vehicle/equipment types, all of which are available now or in 2024. We focused on alternatives that are cost competitive with Renton's current fleet vehicles.
- **Renton is eligible for fleet EV charging infrastructure incentive programs** from Seattle City Light (SCL) and Puget Sound Energy (PSE). Each has different types of incentives and funding amounts, with PSE's program offering greater alignment with City priorities and goals.

Summary of Recommendations

We recommend the following phased approach to transition the City fleet to EV. Importantly, we recommend a re-assessment of the market in 2025, when EV supply is expected to have increased significantly and costs to have further leveled out.

1. **In 2023, purchase two EVs** in order to leverage PSE and SCL incentive programs, which require the city own 1-2 EVs depending on the incentive. The following EVs are comparable replacements for most of the fleet vehicles identified for replacement in 2023/2024: Ford Mustang Mach-e, Hyundai Kona EV, Kia Niro EV Wind, Volvo EX30, Hyundai IONIQ 5, and Hyundai IONIQ 6.

2. **In 2023, enroll in PSE and SCL incentive programs and begin infrastructure build-out plan.** Both utilities offer significant per-site incentives to install EV chargers; their programs have funding in 2023 and perhaps in 2024 and beyond. PSE also offers incentives to purchase EVs: $7,500 per light-duty EV, $100,000 per medium-duty EV, and $150,000 per heavy-duty EV. With 38 percent of the fleet identified for transition in 2023-2026, a comprehensive infrastructure build-out plan is also recommended to ensure infrastructure is in place.

3. **In 2024, purchase 15 EVs** to replace existing sedans, SUVs, and hybrid vehicles prioritized for 2023/2024 transition, at an estimated 29 percent cost savings compared to the original purchase cost. Also in 2024, we recommend a more detailed assessment for the transition of police vehicles and consideration of an EV purchase preference to help ease the transition to EVs in the coming years.

4. **In 2025, update the EV market assessment to confirm the 2026 plan for EV transition and pilot police EV for patrol.** At current market values, the vehicles identified for replacement in 2026 require an estimated 43 percent investment ($12.9 million) compared to

the original purchase cost of the fossil-fuel vehicles, which is inconsistent with city goals for a cost-conscious EV transition. However, most of the vehicles identified for 2026 replacement represent types that are just coming on the market and may decrease in cost over time (e.g., pick-up trucks). With the infrastructure expected to be in place by 2025, we also recommend a pilot of EV for police patrol and consideration of piloting EV for police pursuit.

5. **In 2025/2026, purchase the EVs identified for 2026 replacement.** At the current estimated $12.9 million investment, the city will need a funding plan to complete the transition. This plan could include leveraging PSE and other incentives, rollover of previous years fleet replacement budget (average of $3-4 million annually), grant funding, and purchasing additional EVs in 2024 and 2025 to replace vehicles that are near the end of their service life (provided infrastructure is sufficient).

Introduction

Electric vehicles are already part of Renton's day-to-day life, and their numbers will increase drastically in the next several years. As of May 10, 2023, there were 3,311 EVs and plug-in hybrids registered to addresses in the city.[3] Already, EVs make up 11.7 percent of new car sales in King County and 7.8 percent in Washington.[4] These numbers are expected to continue to rise as Washington state phases out the sale of gasoline-powered cars by 2035; Puget Sound Energy, the utility that serves most of Renton, estimates that by 2030, 29 percent of vehicles sold in its service territory will be EVs.[5]

In June 2022, the City of Renton was awarded funding from the Washington State Department of Commerce to plan reductions in greenhouse gas emissions.[6] The City of Renton is among the first cities in Washington, and even among the first in the nation, to develop an EV infrastructure plan. This innovative planning effort has had limited opportunity to build on the research, knowledge, and implementation work of peer jurisdictions, but the City hopes to inform and inspire collective action towards an EV transition.

Renton is aspiring to be an EV-friendly city beyond installing EV chargers and following state requirements. The City aims to collaborate interdepartmentally to create policy that enhances private investment in EV infrastructure, as well as encourage and assist EV adoption among residents. This Plan is a first step towards a sweeping local transition towards EVs – bringing cleaner air and a more climate-friendly future with it.

Renton's Climate Goals

This plan represents the City's firm commitment to climate action. The Renton Clean Economy Strategy 2.0 (CES 2.0), which is planned for adoption this year, recommends that the City create an electric vehicle plan as an action to reduce community-wide GHG emissions. The City secured funding for this action even before the CES 2.0 has been formally adopted.

A GHG inventory conducted during the CES 2.0 process revealed that 40 percent of Renton's emissions came from transportation in 2019. Most of these emissions (62%) came from on-road vehicles: gasoline and diesel passenger vehicles. The makeup of Renton's emissions, including those from transportation and other sources, is shown in Figure 1.

Additional analysis showed that if 100 percent of new passenger vehicles purchased to drive in Renton are electric, this would achieve a 5 percent overall emissions reduction by 2035.

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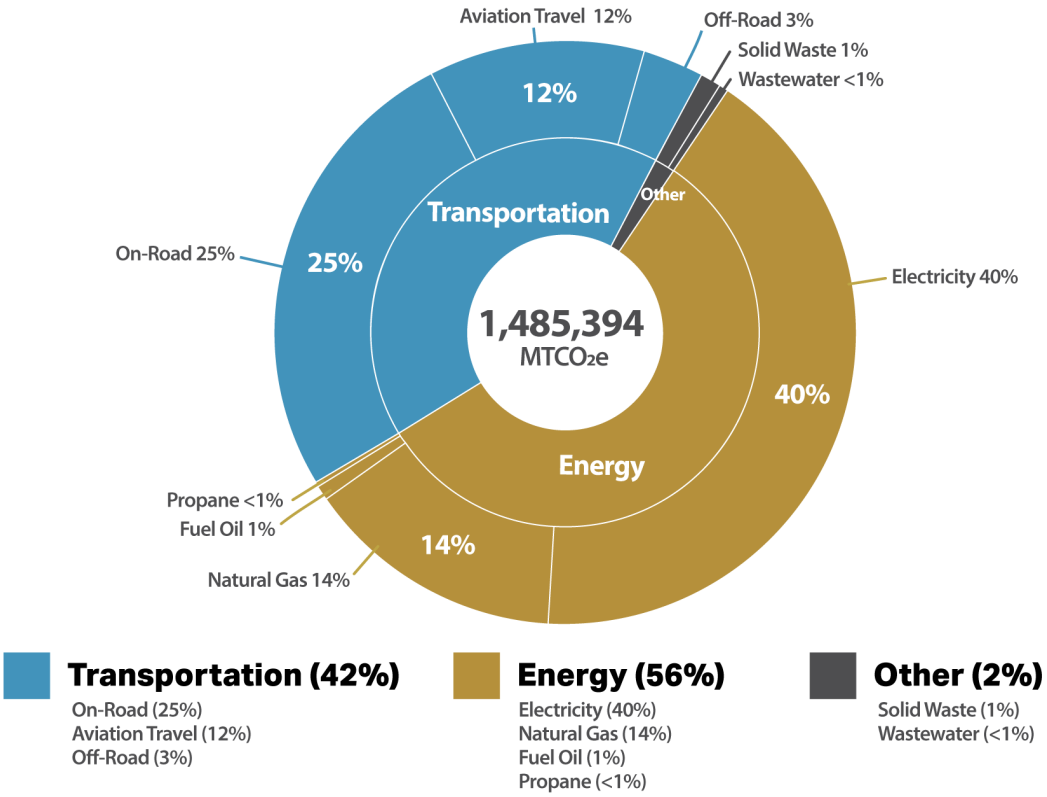
[3] *Electric Vehicle Population Data, Washington State Department of Licensing, 2023.* https://data.wa.gov/Transportation/Electric-Vehicle-Population-Data/f6w7-q2d2

[4] *"Electric vehicles have surged in Washington state. But gas cars still dominate," KUOW.org, 2022.* https://www.kuow.org/stories/electric-vehicle-sales-have-surged-in-wa-but-gas-cars-still-dominate

[5] *Transportation Electrification Plan, Puget Sound Energy, 2021,* https://www.pse.com/-/media/PDFs/7473_Transportation_Electrification_Plan.pdf

[6] *Climate Change, Washington State Department of Commerce,* https://www.commerce.wa.gov/serving-communities/growth-management/growth-management-topics/climate-change/

Figure 1. Renton's community-wide GHG emissions



Purpose

The purpose of this Plan is to support future electric vehicle infrastructure investments. This Plan is composed of two elements, which are presented in separate sections in the rest of this document.

Community EV Charging Plan

This component of the Plan identifies areas for the City to install publicly available EV charging stations and recommends high-level next steps. It is primarily intended to guide the City in siting charging stations independently, while recognizing that opportunities to work in partnership with other entities to site and install charging stations may arise. Goals of this component are to meet demand for charging and reduce barriers to EV adoption.

This Plan does not address ongoing management of EV chargers, recommend incentives or specific strategies to promote community EV adoption, nor provide a detailed feasibility study of the recommended sites.

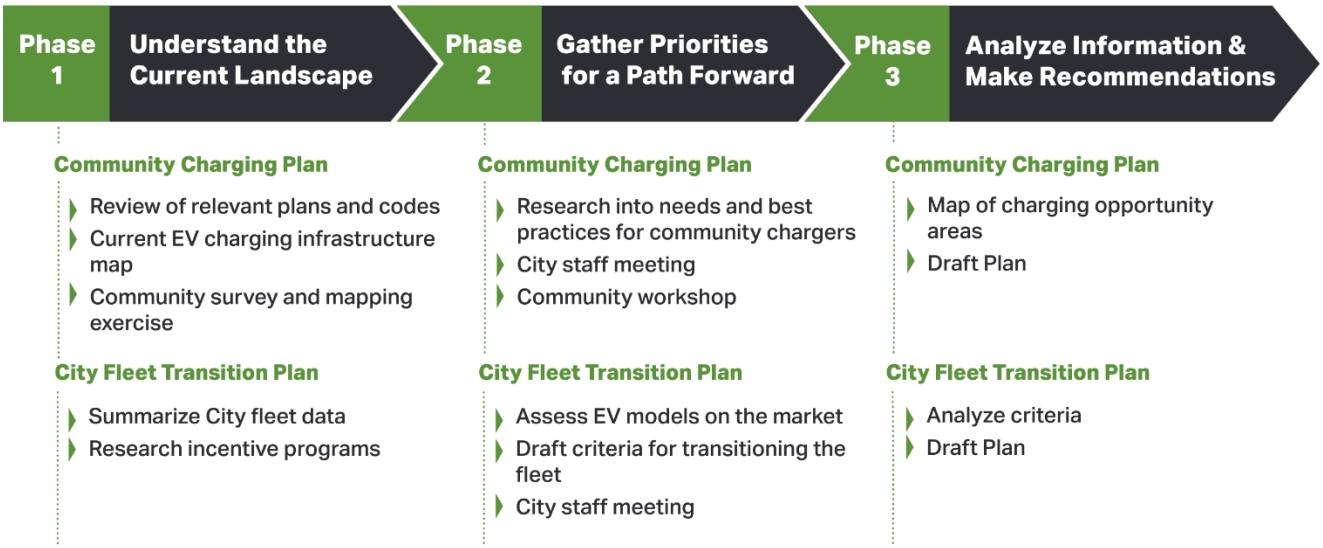
City Fleet EV Transition Plan

This component of the Plan provides the City with recommendations for a strategic, phased transition of the City fleet to electric vehicles. It summarizes information about the current City fleet, lists potential EV options, and includes a decision-making tool to identify types of vehicles in the fleet to transition.

Planning Process and Timeline

The planning process ran from December 2022-June 2023 and included three phases, as described in Table 2.

Table 2. Renton Electric Vehicle Implementation Plan process



Community EV Charging Plan

The next sections describe the methodology, findings, and recommendations of the Community EV Charging Plan.

Community EV Charging Plan Methodology

To develop the Community EV Charging Plan, across three phases of planning, we reviewed EV-related plans and policies, mapped existing and planned chargers, engaged the community and City staff, and mapped criteria to create recommendations.

Phase 1. Understand the Current Landscape

Reviewed EV-related Plans and Policies

We reviewed City, state, and regional documents to understand the current landscape of EV planning and relevant codes in Renton and beyond. The list of reviewed plans is below.

City documents:

- 2022-2027 Business Plan (2021)
- Rainier/Grady Junction Subarea Plan (2021)
- Housing Action Plan (2021)
- Parks, Recreation, & Natural Areas Plan (2020)
- Trails and Bicycle Master Plan (2019)
- Civic Core Vision and Action Plan (2018)
- Comprehensive Plan (2015)

Regional EV-related plans:

- Washington State Plan for Electric Vehicle Infrastructure Deployment, 2022
- Puget Sound Energy Transportation Electrification Plan, 2021
- Seattle Curbside Level 2 EV Charging: Minimum Requirements for Charging Stations, 2022
- Seattle City Light EV Public Charging – Site Selection Process, 2018
- City of Bellevue Smart Mobility Plan, 2018

EV infrastructure-related municipal codes:

- Bellevue
- Bainbridge Island
- Seattle
- Edmonds
- Olympia (November 2022 draft)

We also reviewed state policies (See Appendix A: Current State Memo section for the full scope and results of the review).

Mapped Current and Planned EV Chargers

We collected information about existing charging stations from open-source, publicly available online applications designed for EV drivers: ChargeFinder, ChargePoint, and PlugShare. We added information about planned, permitted chargers received from the City in April 2023 to this list. We used results of our online survey to verify the data (see Community EV Charging Stations section).

Phase 2. Gather Priorities for a Path Forward

We collected community input via an online survey and mapping tool and an online community workshop:

- **The survey and mapping exercise** were hosted on Social Pinpoint. From March 6 to March 31, 2023, the survey was open for community members to answer questions about their priorities and concerns related to EV charging. Using the interactive mapping tool, respondents indicated where EV charging stations are needed in the City and where there are barriers or broken chargers within the City (see Appendix B: Social Pinpoint Summary)
- **The community workshop** took place online on May 4, 2023, from 6:00-7:00 pm. Attendees provided input about where they would like to see more charging stations, as well as their local EV charging experiences (see Appendix C: Community Workshop Summary).

1 Social Pinpoint website	1 Community Workshop
• **111** Interactive map comments • **116** survey responses	• **16** participants

We met with staff twice: on April 11 to better understand past and current EV planning efforts and listen to their priorities for new community charging stations, and on May 23 to hear which City properties are potential candidates for new community charging stations.

Phase 3. Analyze Information and Make Recommendations

To determine where to site new community EV chargers, we compiled the input from the community and City staff and identified considerations for new community chargers based on the priorities we heard (see Siting Criteria section). We also created maps to show areas that reflect these considerations (see Community Charging Sites section).

Community EV Charging Plan Gaps and Limitations

An equity lens ensures that benefits of a transition to EVs are fairly distributed throughout the community, including low-income communities and communities of color. While this project applied an equity lens in some aspects, including stating equity as an explicit goal for new charging stations and making broad recommendations to support equity in charger siting, this lens can be further applied to future EV infrastructure and adoption planning.

For example, we encourage the City to continue broad community engagement, as the community feedback we collected may not reflect the opinions of the entire Renton community (see Next Steps for Community Charger Implementation section). Most participants in the community engagement process for this Plan reported that they already own or lease an electric vehicle, and of those who already own or lease an EV, over 80 percent of respondents in the survey indicated that they are able to charge their EV at home. In addition, some groups, including people with annual incomes of over $150,000, people who identify as white, people with college or graduate degrees, and

homeowners, were overrepresented as participants in this process compared to the demographics of Renton overall.

In addition, EV adoption and incentives are mostly out of scope for this plan but are fundamentally related to EV infrastructure planning. In this planning process, we did not have access to metrics to describe which areas are well-served by chargers; we also know that this will likely change as EV adoption progresses. Critical issues to consider with an equity lens include financial accessibility to EV ownership, and therefore access to charging infrastructure, and financial resilience to fluctuations in electricity supply and pricing.

Community EV Charging Findings

State Planning Landscape

Renton's efforts to support EVs and EV charging infrastructure support ambitious state goals to increase EV adoption. Washington state's policies related to EV adoption are outlined by the Department of Commerce State Energy Office. The policies govern and incentivize vehicle adoption, regulate use of EVs in state business, and authorize charging pilot programs for WSDOT. Washington's 2021 State Energy Strategy also prioritizes EVs, with goals to set ambitious statewide targets, improve planning and oversight of charging infrastructure, and accelerate the transition to EVs.[7]

Overarching State Goals

- **In 2022, the Washington Department of Ecology adopted rules that by 2035, zero-emission vehicles will make up 100 percent of new sales** of passenger cars and light-duty and medium-duty vehicles.[8]
- **In 2015, Washington state committed to putting 50,000 electric vehicles on the road by 2020.** Since then, Washington has surpassed this goal, with approximately 66,500 EVs on the road as of January 2021.[9]

Key State Policies

- **2021: Healthy Environment for All (HEAL) Act (E2SSB 5141)**

  Defines environmental justice in state law and embeds it in state agency work. WSDOT is required to create a community engagement plan and use the Washington Environmental Health Disparities Map in decision-making processes.

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[7] *2021 State Energy Strategy, Washington State Department of Commerce, 2021. https://www.commerce.wa.gov/growing-the-economy/energy/2021-state-energy-strategy/*

[8] *WAC173-423-400Jan18 - Washington State Department of Ecology, 2022. https://ecology.wa.gov/Regulations-Permits/Laws-rules-rulemaking/Rulemaking/WAC173-423-400Jan18*

[9] *Transportation Electrification Plan, Puget Sound Energy, 2021. https://www.pse.com/-/media/PDFs/7473_Transportation_Electrification_Plan.pdf*

- **2021: Clean Fuel Standard (HB 1091)**

  Requires cleaner fuels, either by using cleaner fuels directly or by purchasing clean fuel credits from cleaner producers, such as those providing electricity as fuel.

- **2021: EV Preparedness (HB1287)**

  Requires the Department of Transportation to develop a publicly available tool to find EV charging locations around the state. The bill also extended the Clean Building Act's requirement for EV readiness to new single-family construction. This bill also requires electric utilities of a certain size to plan electricity capacity to support the expected number of electric vehicles on the roads.

- **2021: EV Charging Station Fees (SB 5192)**

  All public charging infrastructure must display charges related to charger operation. Those who park at an EV charger but do not connect to the charger are subject to a $124 fine.

- **2019: Clean Energy Transformation Act (SB 5116)**

  By 2045, utilities must supply Washington customers with electricity that is 100 percent renewable or non-emitting, with no provision for offsets. This bill describes specific milestones to reach this goal and will result in reduced emissions from EV's in Washington.

- **2009: Electric Vehicle Bill (2SHB 1481)**

  Supports EV use and infrastructure investments by local jurisdictions of a certain size. Also authorized an alternative fuels corridor pilot project.

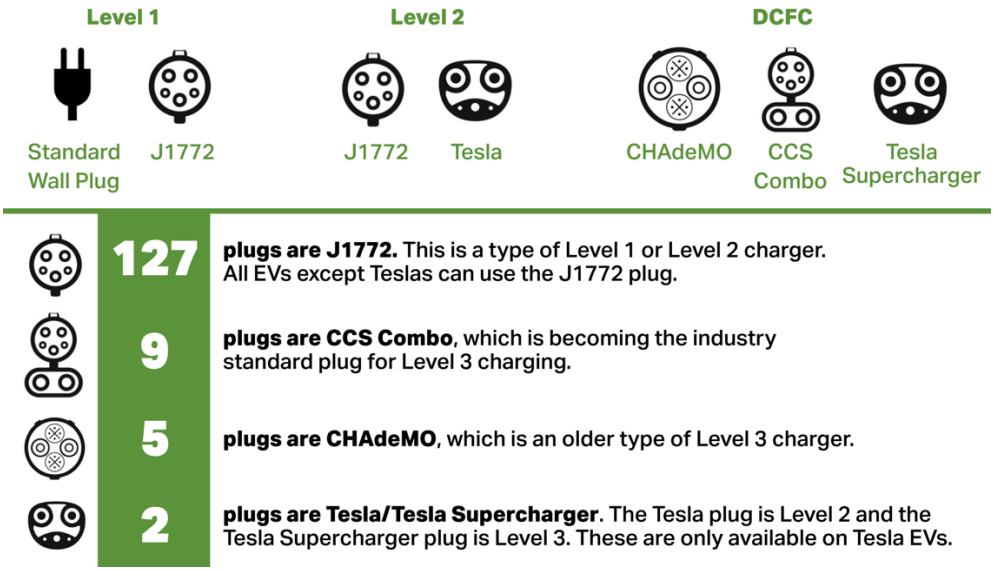
Existing Infrastructure

Charging Speeds and Plug Types

Within Renton, there are 50 total existing EV charging stations, encompassing 143 total chargers. Out of these, one charger is a Level 1 charger, 126 are Level 2 chargers, and 16 are Level 3 chargers. Additionally, there are four planned chargers that will likely be available to the public: one will be Level 3 and the speeds of the remaining three are currently unknown.

In addition to different speeds, the charging stations in Renton have different plug types. To charge an EV, the adaptor attached to a vehicle must match the plug at the charging station, but EV owners can purchase adapters to access charging stations with different plug types. Figure 2 shows the distribution of plug types associated with the 143 total charging plugs in Renton.

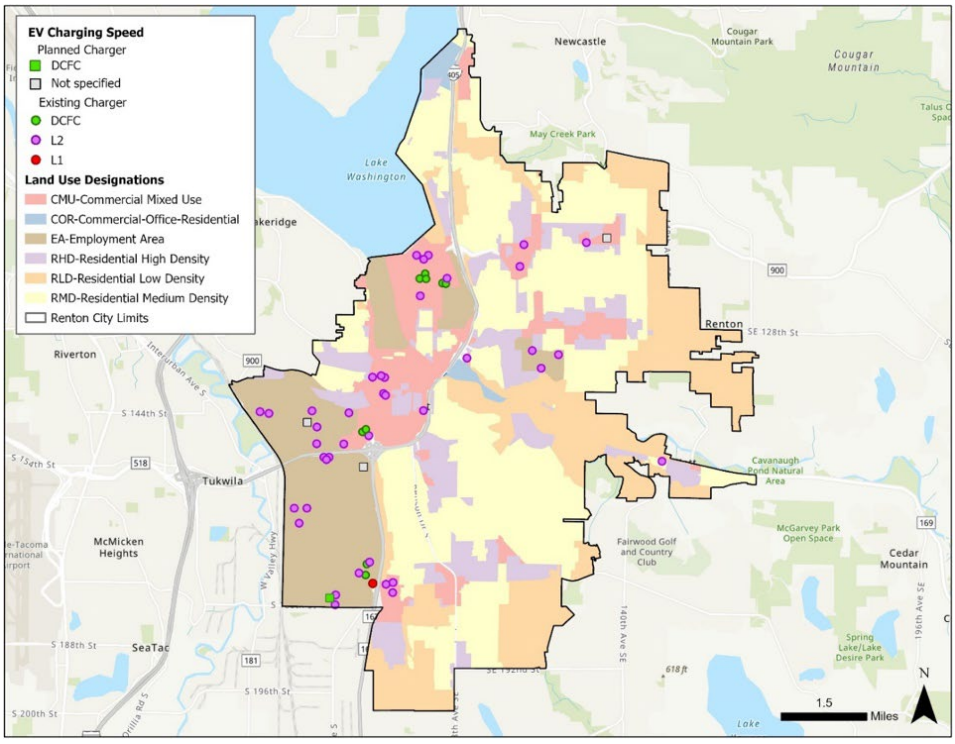
Figure 2. Types of charging plugs associated with charging speeds in Renton



Charging Stations by Land Use

Figure 3 shows existing and planned charging stations overlaid with land use designations. Charging stations are most commonly in commercial mixed-use areas (28 chargers) and employment areas (25 chargers). There is one charger located in a residential high-density area.

Figure 3. Existing and planned Renton EV charging stations relative to land use



Three charging stations are located at convenience stores, six are at supermarkets/grocery stores, 19 are at other retail, and two are at City buildings. Table 3 provides the number of chargers found at these locations as well as other locations such as commercial/corporate parks, non-City owned utility facilities, and health care centers /hospitals.

Table 3. Locations of existing and planned EV charging stations in Renton

Type of Location	Number of EV Charging Stations	Percent of Total EV Charging Stations	Place Names
Parks	0	0%	-
Convenience Stores	3	6%	Walgreens
Supermarkets/Grocery Stores	6	11%	Safeway, Target
Other retail	22	40%	IKEA, Sound Ford, Younker Nissan, Harley-Davidson, Enterprise Rent-A-Car, The Landing, Southport, Topgolf, McLendon Hardware, Central Highland Plaza
City Buildings	2	4%	City Hall*, Renton Public Works Maintenance Division*
Park and Rides	0	0%	-
Hotels	1	2%	Best Western Plus Renton Inn
Health Care Centers/Hospitals	7	13%	Kaiser Permanente, Valley Medical Center
Commercial/Corporate Parks	9	17%	Black River Corporate Park, South 405 Place, LCP Media, Puget Sound Education Service District, Landmark
Residential	1	2%	Wonderland Estates
Utilities (non-City owned)	3	5%	Puget Sound Electrical JATC, King County Roads Maintenance Facilities*, King County DOT Renton
Total Charging Stations	**54**	**100%**	

*City staff indicated that chargers at these locations are likely not publicly available.

Charging Stations in Areas with Environmental Health Disparities and near Multifamily Residences

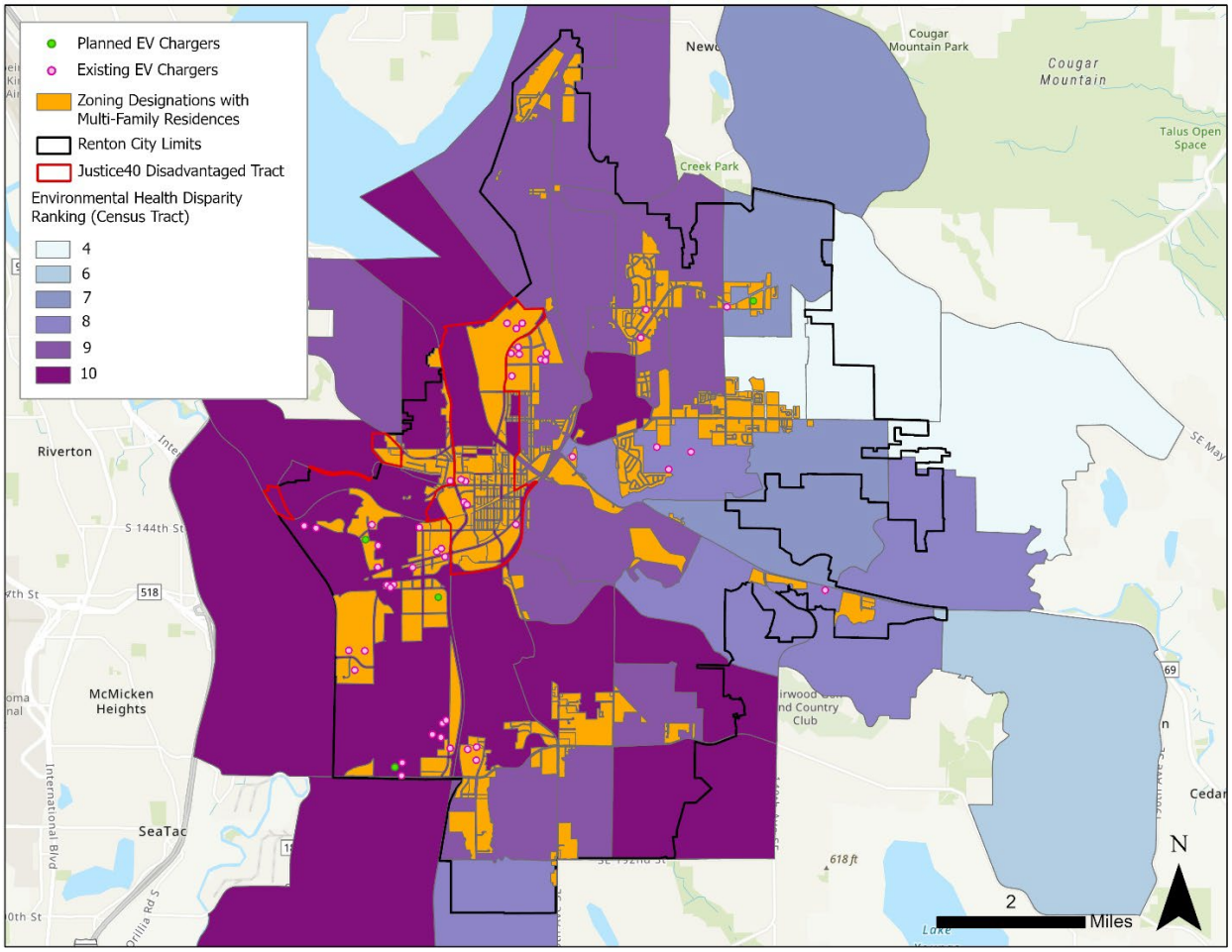
Forty seven out of 54 charging stations in Renton are in areas with high environmental health disparity (EHD). These areas are in census tracts with an EHD ranking of 9 or 10, on a scale of 1 (low disparity) to 10 (high disparity).[10] The EHD ranking of a census tract is based on a score

[10] *Environmental Health Disparities, Washington Tracking Network.* https://fortress.wa.gov/doh/wtn/WTNIBL/

representing environmental health risk factors in communities and reflects pollutant exposures and factors that affect people's vulnerability to environmental pollution. The rankings help to compare health and social factors that may contribute to EHDs in a community. People of color, immigrants, and those with lower incomes are typically more exposed to environmental pollutants than other groups. These groups are also more likely than others to live in multifamily units, which are often underprioritized for EV charging infrastructure. Zoning designations in Renton that allow for multifamily residential units are shown in Table 5.

Installing EV charging in or near multifamily units with high environmental disparities can help reduce barriers to EV ownership and decrease exposure to harmful pollutants from gasoline- and diesel-powered vehicles. Figure 4 shows existing and planned EV chargers in Renton relative to multifamily residential zones and EHD rankings. The map also shows areas of census tracts in Renton that are disadvantaged according to the Justice40 Initiative.[11]

Figure 4. Planned and existing EV chargers in Renton relative to zoning designations that allow for multifamily housing, EHD rankings, and Justice40 disadvantaged tracts



[11] *Justice40 Initiative Map and Criteria. ESRI Demographics, 2022.* https://www.arcgis.com/home/item.html?id=bdac3e391cd04d2396983fc67c23bf1c

Table 4. Zoning designations that allow for multifamily residential units

Zoning Designation Code	Zoning Designation Name	Dwelling Units/Acre
CA	Commercial Arterial	30-60
CD	Center Downtown	150
CN	Commercial Neighborhood	20
CO	Commercial Office	150
COR	Commercial Office/ Residential	50
CV	Center Village	80
R-10	Residential-10	10
R-14	Residential-14	14
UC-1	Urban Center-1	150
UC-2	Urban Center-2	150

Community Feedback

Below are some key themes heard from the community as they relate to EV ownership, barriers and priorities for future charging and ownership, equity considerations, and priority locations of future charging stations. We heard these priorities directly from the community via Social Pinpoint and the community workshop (see Appendix B: Social Pinpoint Summary and Appendix C: Community Workshop Summary sections for detailed responses).

General Viewpoints on EV Ownership

It is important to note that a significant proportion of both survey respondents and community workshop participants were already plug-in EV owners or leasers. Among these individuals, **83 percent already have an at-home charger** and a majority expressed a preference for **future Level 3 public charging**. Out of survey respondents who don't currently own or lease a plug-in EV, most are **interested in purchasing an EV at some point** in the future:

- 33 percent have some interest in getting an EV in the future, but not as their next vehicle
- 25 percent would consider getting an EV as their next vehicle
- 22 percent have no interest in ever getting an EV

Barriers to EV Charging and Ownership

Community members noted that the most common barrier to EV charging in Renton is **the lack of available chargers**. Other challenges identified include charging logistics, high costs of charging and ownership, and restricted vehicle range. The number of respondents highlighting the lack of chargers in Renton reinforces the need to develop this plan and support EV infrastructure.

Survey respondents note the most common barrier to EV charging in Renton is the **lack of chargers** (45.1%).

Of survey respondents who don't currently own/lease a plug-in EV, **charging logistics and vehicle range** are key obstacles to buying an EV. The primary factors preventing most from buying or leasing an EV are:

- the **number of miles** the vehicle can go before it needs to be charged (59.4%)
- **costs** involved with buying, owning, and maintaining an EV (56.5%)
- **charging logistics**, "such as where and when I'd be able to charge it" (50.7%)

Easily accessible fast chargers would encourage survey respondents to buy EVs. Of those who do not already own a plug-in EV, factors that would most encourage respondents to buy or lease an EV include the **ability to charge an EV where they live** (52.9%) followed by **easy access to fast-charging public stations** where they can fully recharge in **30 minutes or less in Renton** (41.4%).

Workshop attendees identified **charger reliability** as a concern, as some chargers are frequently out of service and others have been vandalized.

Social Pinpoint users noted several chargers in the Landing Parking Garage 2, Renton City Hall, Walgreens on 3011 Sunset Blvd NE, Walgreens on 4105 45th Street NE, and Target in the Landing are either **slow** or **broken**.

COMMUNITY WORKSHOP & SOCIAL PINPOINT RESPONSES:

"Current lack of level 3 chargers as well as lack of unified charger landscape. Currently we need multiple apps with multiple accounts to be able to charge."

"…waiting for the EV industry to catch up to higher voltage packs before purchasing to help reduce charge and power draw in the future."

Considerations to Ensure an Equitable EV Transition

To ensure an equitable implementation of charging stations, community members noted:

- Suggested installing chargers in areas with multifamily housing.
- Highlighted the importance of **keeping charging prices affordable**.
- Recommended that the City **discourage vehicles from occupying a charging spot when they are not actively charging**, in order to increase charger availability for other users.

COMMUNITY WORKSHOP & SOCIAL PINPOINT RESPONSES:

"It would be nice to have charging stations at the senior center for staff members and customers who need to be encouraged to buy EV cars."

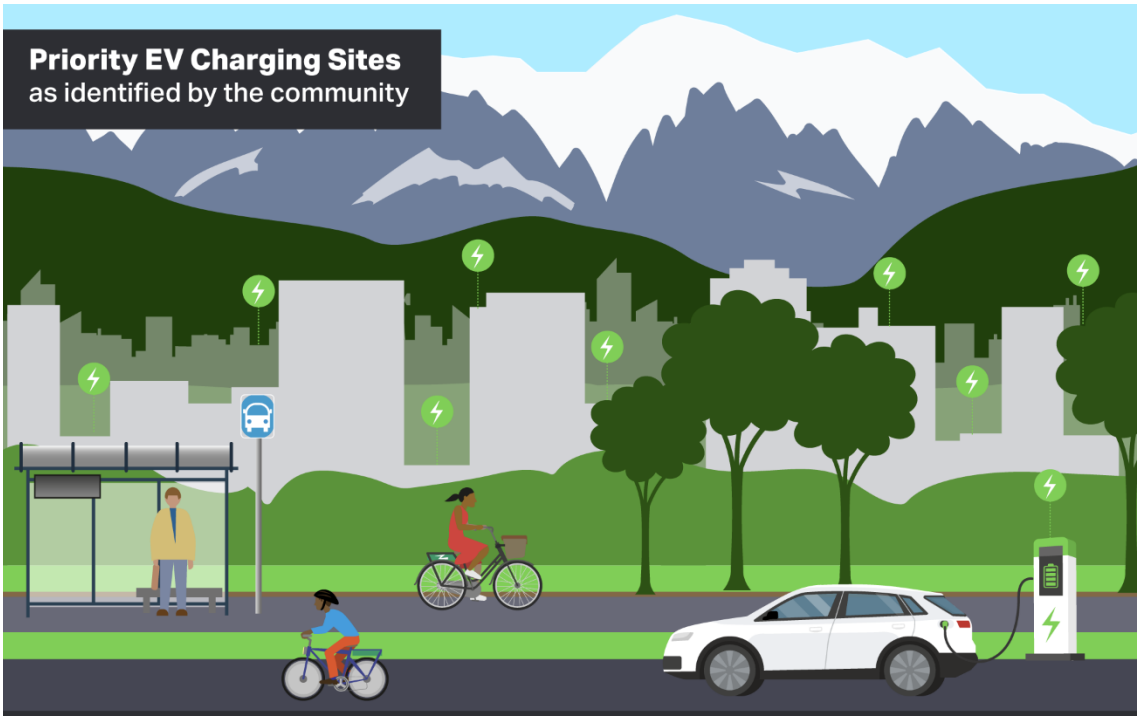
"Free Level 2 charging at all public locations. It's gotta be easy and reliable for people."

"Place chargers near amenities and make sure chargers can get cell/internet access."

Priority EV Charging Site Locations

Community members indicated in a survey that are most interested in seeing future EV charging stations located at **shopping centers/malls/restaurants (49.6%), parks and trailheads (44.2%), supermarkets/grocery stores (44.2%) and restaurants/cafés/bars (43.4%).** Individual sites that community members suggested are in Figure 5.

Figure 5. Priority EV charging sites, as identified by the community



Parks and Trailheads
- Gene Coulon Memorial Beach Park
- Liberty Park
- Philip Arnold Park
- Burnett Linear Park
- Sunset Neighborhood Park
- Cedar River Trail Park and along Cedar River trail
- Ron Regis Park
- Meadow Crest Playground
- Kennydale Beach Park

Shopping Centers
- Bartells
- Petco/Safeway
- Hop in Grocery/Top of the Hill Produce Stand
- Renton Village
- North Benson Center
- Boona Boona Coffee
- Macadons
- Renton Shopping Center
- Fairwood Shopping Center
- The Landing

Sports Complexes
- Renton Memorial Stadium
- Maplewood Golf Course
- Rolling Hills Pool/Sports complex
- Planet Fitness

Public Buildings
- Renton Library
- Renton Highlands Library
- Renton Community Center
- Newcastle Library
- Renton Senior Activity Center
- Hospitals
- Family First Center

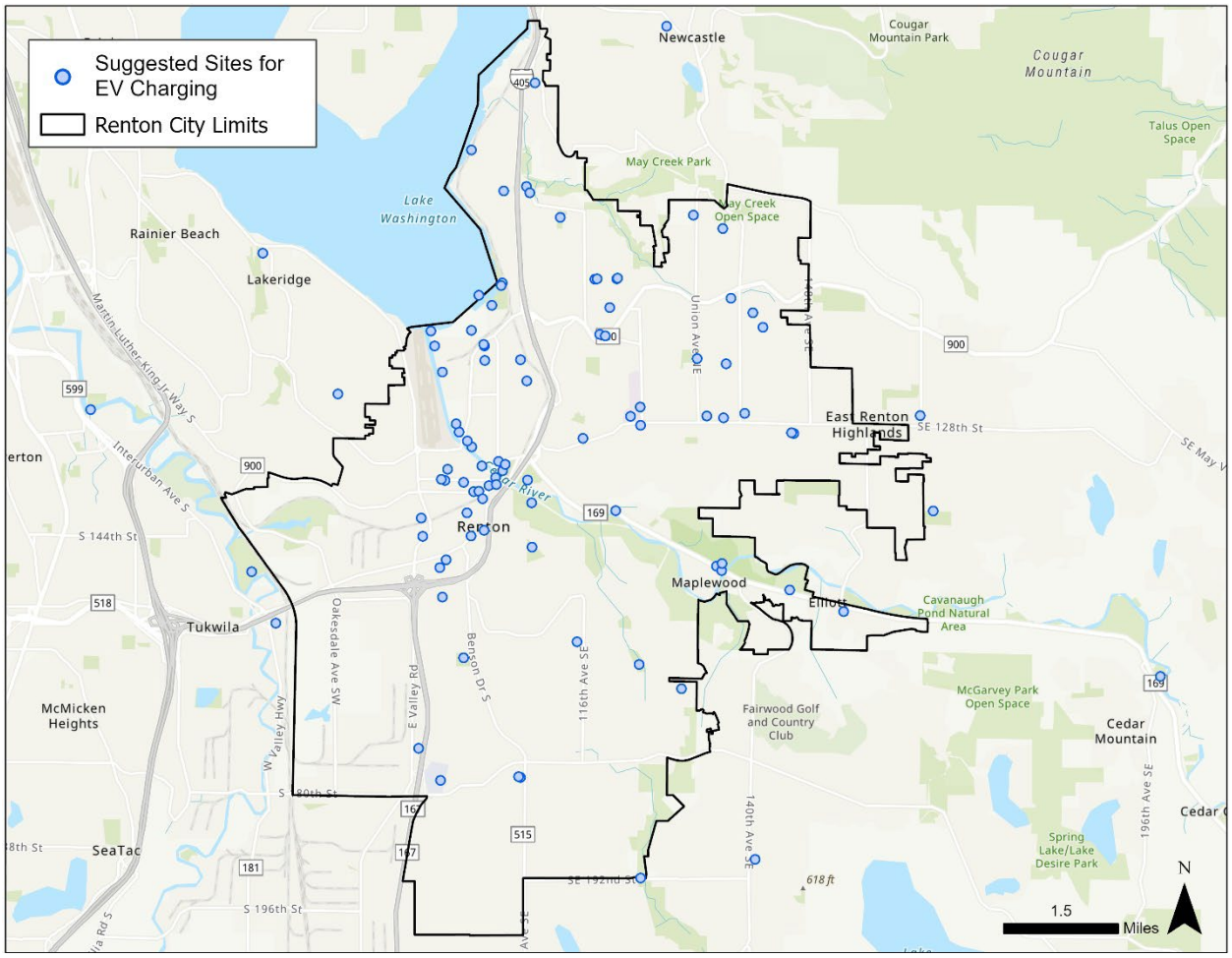
Schools
- Renton Technical College
- Renton High School
- Hazen High School

Park & Rides
- Renton Highlands Park & Ride

Commercial Sites
- Boeing Renton Factory
- Kentworth Truck Company

Gas Station
- Arco

Figure 6. Priority locations for new public charging, as identified by community members via Social Pinpoint



COMMUNITY WORKSHOP & SOCIAL PINPOINT RESPONSES:

"City maintenance facilities should have chargers capable of supporting large vehicles such as trucks."

"EV charging should be available to school personnel during the school day and open for neighborhood public charging nights/weekends."

"Would support the use of electric vehicles going to the park. Solar panels on some of the buildings to help offset the electricity use."

"Let's make it happen; Now!"

Recommendations for Community EV Charging Sites

The following recommendations for charging stations are intended to be a starting place for City decision-making, rather than prescriptive instructions. The recommendations fall into two categories:

- **Support the City's equity goals and align with funding criteria** by planning public chargers in areas with high Environmental Health Disparity (EHD) scores and/or areas categorized as disadvantaged by the Justice40 Initiative near multifamily housing. PSE and SCL incentive programs are expected to use EHD as a selection criteria; federal funding sources typically link to Justice40 categorizations.
- **Prioritize commercial and retail areas and points of interest** recommended by the City and community, including schools, libraries, parks, and shopping centers and grocery stores. In these areas, consider locations where there are relatively fewer existing or planned chargers.

The recommended locations to site EV charging stations to meet equity goals and provide charging access at points of interest overlap significantly, particularly in the downtown area. The City may want to further strategize how many charging stations to site within the areas highlighted in maps and tables in subsequent sections of this document. We also recommend considering:

- **City-owned properties, including parks, rights-of-way, and City buildings are good early action sites**, as they may be more feasible than installing chargers on properties owned by other entities (such as private owners).
- **Rights-of-way are particularly promising areas for charger installation**, as streetlights, street poles, and transformers can provide access to charging in locations without on-site parking – a particular benefit for multifamily residents – and already have electrical connections for charging. These have proven to be an efficient way to add charging infrastructure in Los Angeles, CA.[12] Initial research indicates that pole-mounted chargers can yield cost reductions of 30 percent compared to other chargers due to savings in construction, materials, and labor.[13]

For the two categories of recommendations, there are maps overlaying siting criteria. Following are recommended next steps (see Next Steps for Community Charger Implementation section).

Chargers in Areas with High Environmental Health Disparities Near Multifamily Residences

The maps and tables in this section identify sites in census tracts with an EHD ranking of 9 or 10 (see Existing Infrastructure section for a detailed definition of EHD Ranking) that are within 30 feet of zoning designations that allow multifamily housing (Table 4). Figure 7 outlines areas that meet these criteria and highlights: 1) census tracts that are disadvantaged according to the Justice40 Initiative, [14] and 2) City properties, including buildings, parcels, and rights of way.

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[12] *EV Charging Stations. LA Bureau of Street Lighting. https://lalights.lacity.org/connected-infrastructure/ev_stations.html*

[13] *Pole-Mounted Electric Vehicle Charging: Preliminary Guidance for a Low-Cost and More Accessible Public Charging Solution for U.S. Cities. World Resources Institute. https://www.wri.org/research/pole-mounted-electric-vehicle-charging-preliminary-guidance*

[14] *Justice40 Initiative Map and Criteria. ESRI Demographics. https://www.arcgis.com/home/item.html?id=bdac3e391cd04d2396983fc67c23bf1c*

Figure 7. City buildings, parks, and open spaces recommended for siting new EV chargers in areas with high environmental disparity near multifamily residences (Black-outlined rectangle denotes inset. See Figure 8.)

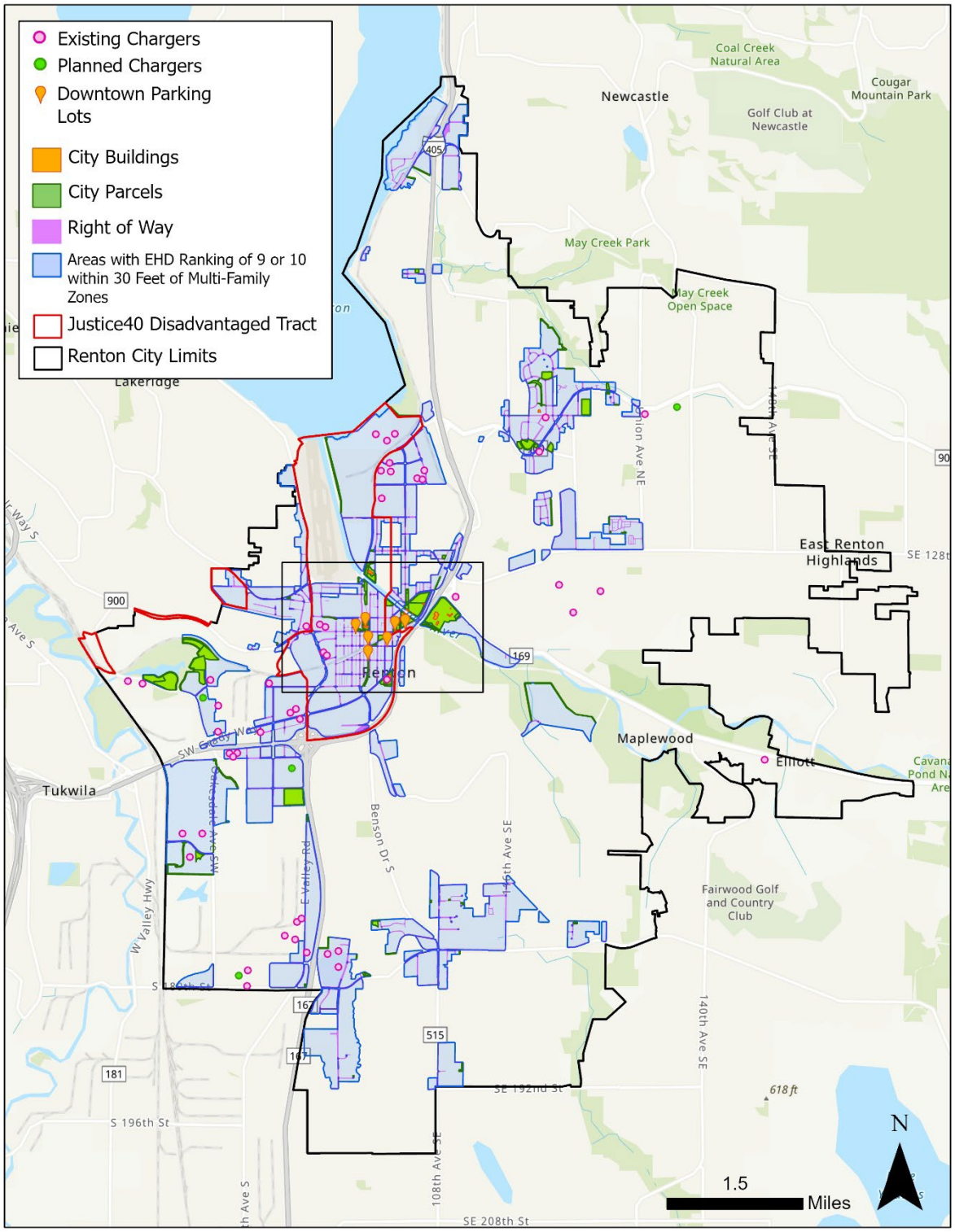


Figure 8. Inset shows a close-up view from Figure 7 to help distinguish features.

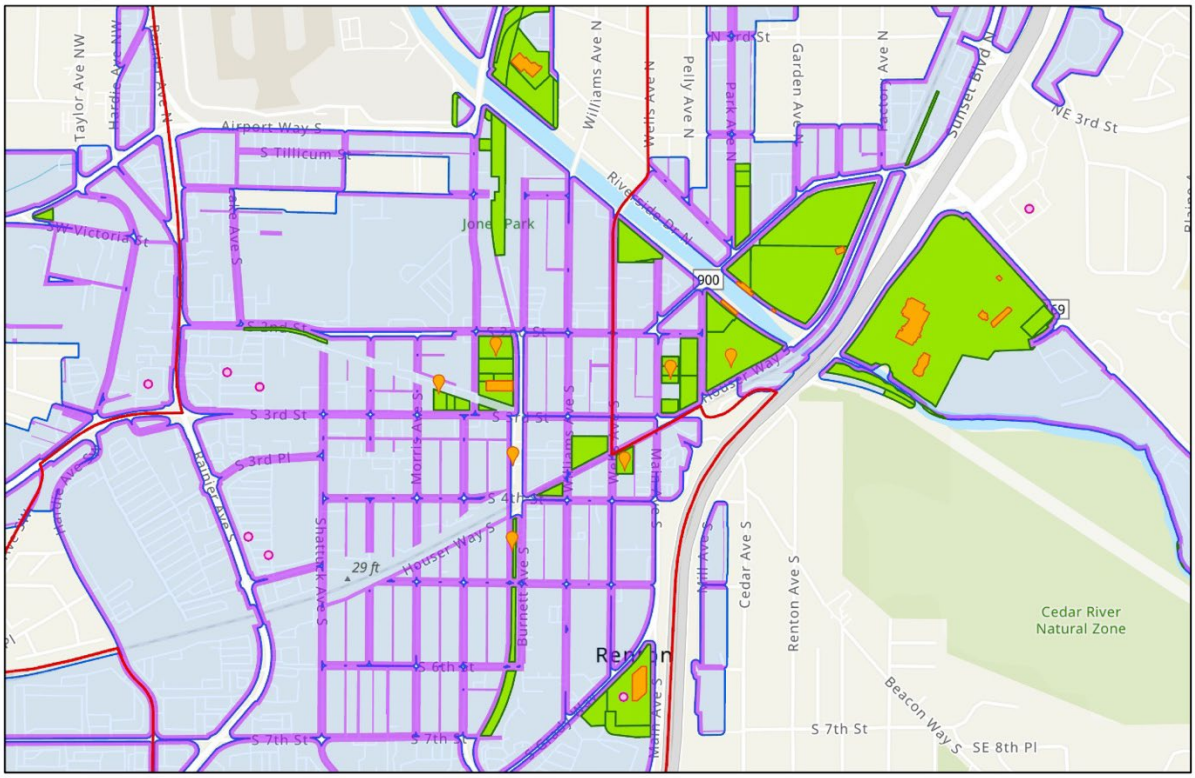


Table 5 lists the names of City properties that meet these criteria. **Gene Coulon Park and Sunset Neighborhood Park are locations that both community members and City staff recommended** as a charger location. They are highlighted in the table, and we recommend them as high priority.

Table 5. Recommended City properties for siting new EV chargers in areas with high environmental disparity near multifamily residences with relatively low EV charger density

Site Name	Address	Recommended by Community?	Recommended by City Staff?
Cedar River Natural Area	1500 Houser Way S	Yes	
Cedar River Park	1715 SE Maple Valley Hwy	Yes	
City Center Parking Garage	655 S 2nd St		Yes
Downtown Parking Lot	218 Main Ave S		Yes
Downtown Parking Lot	255 Logan Ave S (approx.)		Yes
Downtown Parking Lot	321 Burnett Ave S (approx.)		Yes
Downtown Parking Lot	416 Burnett Ave S (approx.)		Yes
Downtown Parking Lot	320 Wells Ave S		Yes
Downtown Parking Lot	200 Mill Ave S (approx.)		Yes
Edlund/Korum Park	17600 103rd Ave SE		Yes

Site Name	Address	Recommended by Community?	Recommended by City Staff?
Gene Coulon Memorial Park	1201 Lake Washington Blvd N	Yes	Yes
Henry Moses Aquatic Center	1717 SE Maple Valley Hwy		Yes
Highlands Park Neighborhood Center	800 Edmonds Ave NE		Yes
Liberty Park	1101 Bronson Way N	Yes	
Philip Arnold Park	720 Jones Ave S	Yes	
Renton City Hall	1055 S Grady Way		Yes
Sunset Neighborhood Park (curbside)	2680 Sunset Ln NE	Yes	Yes
Talbot Hill Reservoir Park	1900 Talbot Rd S		Yes

Chargers at Points of Interest in Commercial and Employment Areas

This section recommends locations for community chargers in Renton based on proximity to points of interest and City buildings, parks, and open spaces relative to commercial and employment areas from the community and City staff. These are places where the community would like to see more chargers and are ideal places for Level 2 chargers, as each point of interest represents a place where people can dwell to charge their EVs. We also highlighted areas with relatively low density of EV chargers, defined as areas outside a 0.5-mile radius of three or more existing or planned EV chargers.

Points of interest:

- City parks and open spaces
- Public attractions and landmarks
- Education (schools)
- Commercial and retail locations

Land use designations of interest:

- Commercial Mixed Use
- Commercial-Office-Residential
- Employment Area

Figure 9 outlines the areas of Renton that meet these criteria and highlights City buildings within those areas.

Figure 9. Points of interests, parks, open spaces, and parking lots recommended by the City and/or community relative to land use designations of interest and areas relatively dense in EV chargers

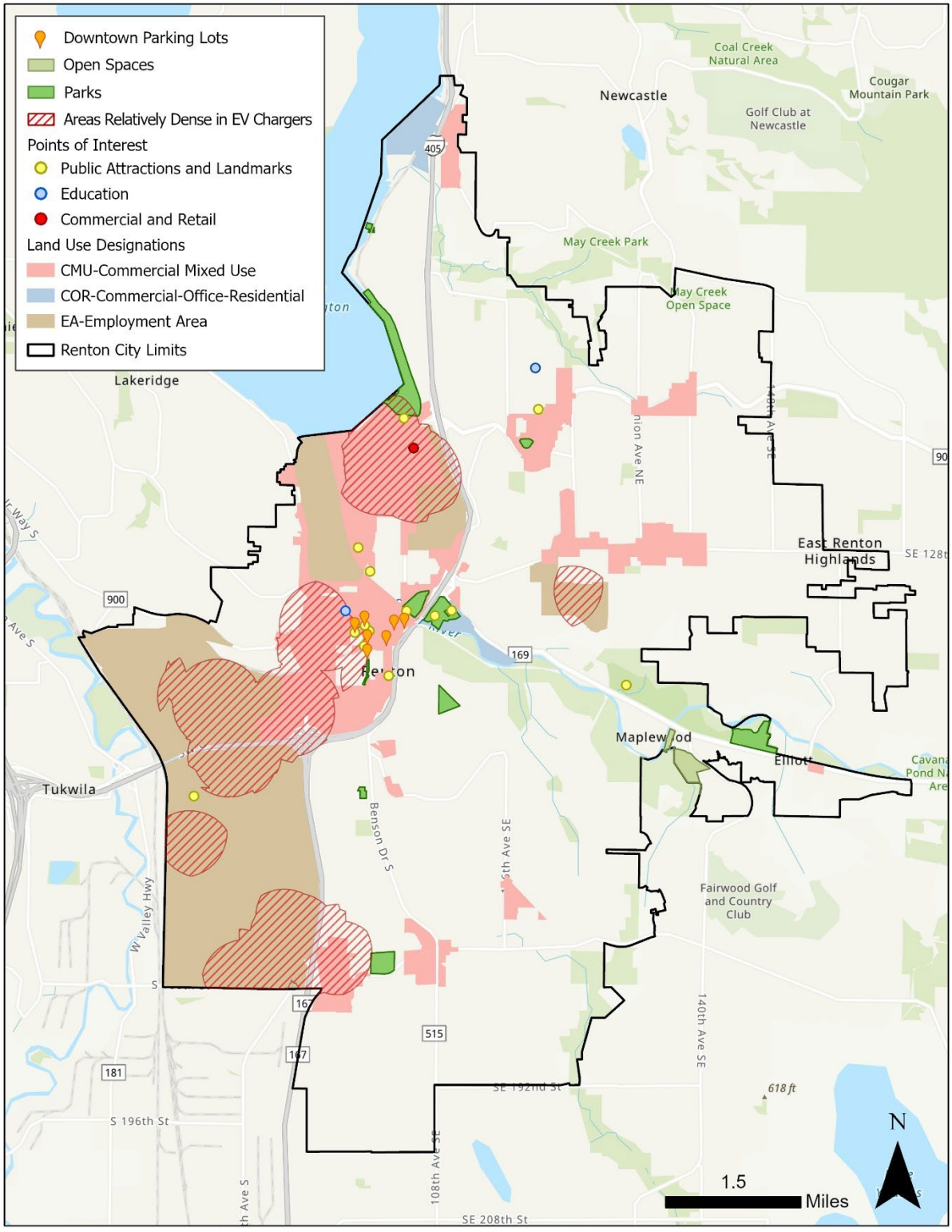


Table 6 lists sites that may be candidates based on the map, for which City staff and/or community members indicated a preference throughout the planning process. Sites for which both City staff and community members indicated a preference include **Gene Coulon Memorial Park, Maplewood Golf Course, Renton Community Center, Renton Main Library, Renton Memorial Stadium, Don Persson Renton Senior Activity Center, and Sunset Neighborhood Park.**

Table 6. Points of interest, parks, open spaces, and parking lots that the City and community recommended for EV chargers

Site Name	Owner	Type of Site	Address	In Commercial or Employment Zone?	Recommended by Community?	Recommended by City Staff?
Boeing Longacres Industrial Park	Private	Public Attractions and Landmark Buildings	1901 Oaksdale Ave SW	Yes		Yes
Burnett Linear Park	Renton	Park	502 Burnett Ave S	Yes	Yes	
Cedar River Park	Renton	Park	1717 Maple Valley Hwy	Yes	Yes	
City Center Parking Garage	Renton	Parking Lot	655 S 2nd St	Yes		Yes
Don Persson Renton Senior Activity Center	Renton	Public Attractions and Landmark Buildings	211 Burnett Ave N		Yes	Yes
Downtown Parking Lot	Renton	Parking Lot	218 Main Ave S	Yes		Yes
Downtown Parking Lot	Renton	Parking Lot	255 Logan Ave S (approx.)	Yes		Yes
Downtown Parking Lot	Renton	Parking Lot	416 Burnett Ave S (approx.)	Yes		Yes
Downtown Parking Lot	Renton	Parking Lot	321 Burnett Ave S (approx.)	Yes		Yes
Downtown Parking Lot	Renton	Parking Lot	320 Wells Ave S	Yes		Yes
Downtown Parking Lot	Renton	Parking Lot	200 Mill Ave S (approx.)	Yes		Yes
Edlund/Korum Park	Renton	Park	17600 103rd Ave SE			Yes
Gene Coulon Memorial Park	Renton	Park	1201 Lake Washington Blvd N	Yes	Yes	Yes
Henry Moses Aquatic Center	Renton	Public Attractions and Landmark Buildings	1719 Maple Valley Hwy	Yes		Yes

Site Name	Owner	Type of Site	Address	In Commercial or Employment Zone?	Recommended by Community?	Recommended by City Staff?
Highlands Library	King County	Public Attractions and Landmark Buildings	2801 NE 10th Street		Yes	
Kennydale Beach Park	Renton	Park	3601 Lake Washington Blvd N	Yes	Yes	
Liberty Park	Renton	Park	1101 Bronson Way N	Yes	Yes	
Maplewood Golf Course	Renton	Public Attractions and Landmark Buildings	4050 SE Maple Valley Hwy		Yes	Yes
Meadow Crest Early Learning Center	Renton School District	Education	1800 Index Ave NE		Yes	
Philip Arnold Park	Renton	Park	720 Jones Ave S		Yes	
Renton City Hall	Renton	Public Attractions and Landmark Buildings	1055 S Grady Way	Yes		Yes
Renton Civic Theatre	Renton	Public Attractions and Landmark Buildings	507 S 3rd St	Yes		Yes
Renton Community Center	Renton	Public Attractions and Landmark Buildings	1715 SE Maple Valley Hwy	Yes	Yes	Yes
Renton High School	Renton School District	Education	400 S 2nd St	Yes		Yes
Renton Library	King County	Public Attractions and Landmark Buildings	100 Mill Ave S	Yes	Yes	Yes
Renton Memorial Stadium	Renton School District	Public Attractions and Landmark Buildings	405 Logan Ave N	Yes	Yes	Yes
Renton Pavilion Event Center	Renton	Public Attractions and Landmark Buildings	233 Burnett Ave S	Yes		Yes
Renton Visitor Center at Chamber of Commerce	Renton	Public Attractions and Landmark Buildings	625 S 4th St	Yes		Yes
Ron Regis Park	Renton	Park	1501 Orcas Ave SE		Yes	

Site Name	Owner	Type of Site	Address	In Commercial or Employment Zone?	Recommended by Community?	Recommended by City Staff?
Southport	Renton	Public Attractions and Landmark Buildings	1133 Lake Washington Blvd N	Yes		Yes
Sunset Neighborhood Park (curbside)	Renton	Park	2680 Sunset Ln NE	Yes	Yes	Yes
Talbot Hill Reservoir Park	Renton	Park	1900 Talbot Rd S			Yes
The Landing	Renton	Commercial and Retail	828 N 10th Pl	Yes	Yes	Yes

Next Steps for Community Charger Implementation

These maps and lists of priority sites are intended as a starting place for City decision-making, but there are still several steps needed before chargers can be installed.

STEP 1. Assess Feasibility

The City will need to determine which specific parking areas are truly feasible. To do this, the City can assess the criteria in Table 7 by visiting the location and connecting with relevant partners.[15] Table 7 describes essential criteria, which all EV charging sites should meet, and desirable considerations, which are recommended for charging sites to meet but are not fatal flaws for charger siting.

Table 7. EV charging site assessment criteria and considerations

Category	Criteria
Essential Criteria	
Layout	• Does the site have space available, meet clearance requirements for rights of way, and meet requirements for parking spaces (e.g. slope)? • Does the site meet requirements of the Americans with Disabilities Act? • If the site is a curbside location on a right of way, is it clear of any planned infrastructure that might interfere (e.g., a bike lane)?
Utility Interconnection	• Does the site have available electrical capacity and/or a feasible way to bring service to the EV chargers? • (To assess this, request and submit a feasibility request form from Puget Sound Energy or Seattle City Light, depending on location)
Safety	• Are there any concerns that a user of the station would be at a safety risk (e.g., are there high volumes of car traffic)? • Is the site in a place that may be vandalized (like a site with minimal oversight)?
Public Accessibility & Visibility	• Are there convenient ways to drive to the site? • Is it convenient to access an EV charger at the site? • Does the site have good visibility for people looking for the EV charger?
Other Considerations	
Amenities	• Are there amenities nearby for people to use while charging, including activities and/or restrooms?
Easements	• Is there no easement required for EV charging equipment (station, meter, disconnects, etc.), or access to EV charging equipment?

[15] *Criteria area adapted from the City of Seattle's curbside program requirements, conversations with City of Renton staff, and conversations with Puget Sound Energy and Seattle City Light staff.*

Category	Criteria
Alignment with Funding Source or Concurrent Investment	• Does the site match criteria of utility community charging incentive programs (both Seattle City Light and Puget Sound Energy are expected to launch rebate incentive programs in early 2024)? • Does the site match funding criteria for grants or other funding sources? • Is there an opportunity to leverage a planned project or public investment to install a charger in this location?
Connectivity	• Is there cell service in the area?
Other	• What is the expected demand for charging in this area? • Does community input indicate that this site will be a good choice? • Do the opening hours of the location (especially buildings and parks) make sense for charger siting?

Step 2. Continue to Engage the Community

We recommend continuing broad education and engagement around EVs in Renton and engaging community members who live, work, or otherwise are in proximity to planned EV charging.

Broad community engagement

The objectives of continued broad community engagement around electric vehicles are to:

- Connect with community members who were not engaged during engagement for this plan. The majority of participants we heard from already own EVs, and over 80 percent of survey respondents had access to EV charging at home. There are broad cross-sections of the community not included in this group of respondents. It is important to connect with these community members to ensure they have access to information about EV resources (including incentives and chargers), to understand their barriers to EV adoption and charging, and to hear their perspectives about what is needed in the city.
- Share information and resources with community members. Community members indicated that they would like information about chargers in the city, including their current status. The landscape of EVs is changing quickly, including charging, battery capacity, available models, and more. The City can help community members stay on top of changing information to encourage a transition to EVs.

To engage the broad community, the City should develop and update a webpage with information about chargers, EV adoption incentive programs, and other resources. It is important to have a centralized place for community members to go to find information. The City of Santa Clara has an example with easy-to-follow tables and maps of charger locations and speed, and information about charging rates, and details about current incentive programs all on the same page.[16] The Renton website is already integrated with a Google Translate widget equipped with over 20 languages; ensure that any additional content embedded into the website is translated into Spanish and Mandarin (simplified) Chinese so that it is accessible across the community.

[16] *City of Santa Clara. Information about Charging, Rates, and Incentives.* *https://www.siliconvalleypower.com/sustainability/electric-vehicles/charging-stations-rates-and-incentives*

Community engagement around potential EV charger sites

Next, it is important to collect feedback about individual EV charger locations to ensure that each location is a good fit for the community and to address any concerns or pushback about charger locations before they are installed. To do this, the City should consider the best method for gathering information is in the particular location. For example:

- If there is a site manager or owner, ask for their ideas to connect with the community.
- Understand if there are any existing communication channels (for example, a school or library might have a newsletter, regular meetings, or a registration desk or other central location that people pass by).
- Understand any translation needs or accessibility considerations specific to the location (for example, consider smartphone, computer, and Internet access if planning any digital engagement).

Engagement Examples

Curbside EV Charger in a Commercial District

If the City intends to install an EV charger at a curbside parking space in a commercial district, it might be important to communicate with neighboring businesses, especially if the EV charger will remove any parking spaces. In this case, the City can consider creating and printing notices or door hangers and designing a forum for business owners to voice their concerns.

EV Charger at a Local Library

To determine the best specific location for an EV charger at the Burien Library in 2018, Seattle City Light staff developed a printed survey in multiple languages and placed copies of it at the front desk. The survey asked about visitors' use of EVs and where they would prefer to see a charger out of two locations. It received 94 responses and helped Seattle City Light determine where to locate the charger, which was installed in 2021.

Step 3. Plan to Install, Manage, and Maintain Chargers

Before installing chargers, the City must also make decisions around how they will be installed, managed, and maintained. It is out of scope for this Plan to make recommendations here, but we encourage the City to consider:

- **An ownership model for each charging station,** i.e., whether the City, a utility, or a third party will own the charging station.
- **Network connection needs**, or whether chargers will be networked or non-networked. Networked chargers connect to the internet or cellular service to collect payment, transmit usage data, indicate charger availability, and more. Non-networked chargers do not use an internet

connection, do not have these capabilities, and must either provide free charging or collect payment another way.

- **Specific equipment and provider.** Specific equipment decisions include type of charger, amount of chargers, and plug type.
- **Pricing and payment for users**. We heard from community members that keeping costs low is a high priority.
- **A method to keep parking spaces with chargers available** – for example, by enforcing a time limit or by enforcing a fee of $124 (as set in WA code) for those who park in an EV charging spaces but do not connect to the charger.
- **A plan to maximize charger reliability** by installing lighting as needed, otherwise minimizing vandalism, and responding quickly to any operational issues.
- **A schedule or guidelines for charger replacement** to ensure that chargers work well and are not obsolete models. Ideally, the City will assess ongoing operations and maintenance costs to make this schedule or set of guidelines.

City Fleet EV Transition Plan

City Fleet EV Transition Methodology

Phase 1. Understand the Current Landscape

First, the City provided data about their fleet, including make/model, City-defined type, department, odometer reading, cost, and service life. Based on the data, we summarized the fleet by key factors expected to be relevant for transitioning to an electrified fleet. We used City-provided vehicle types in the summary:

- **Count by type** indicates how common a particular vehicle or equipment type is in Renton's fleet. For example, police vehicles make up 20 percent of Renton's fleet.
- **Total original cost by type** indicates the investment needed to put a particular vehicle or equipment type into service. It sums the purchase price and any upfitting needs in 2023 dollars.
- **Vehicle/equipment age by type** indicates the relative age of the fleet and shows the number of vehicles/equipment that are two years old as well as 5-25 years old (shown in five-year increments).
- **Vehicle/equipment details by type** is a list that can by filtered by department, EQ# (a City metric), description, model year, license, total original cost, and odometer reading for all the vehicles or equipment of a certain type.

In preparing the fleet summary, we found that some vehicles present in the 2019 fleet were no longer listed in the 2023 fleet. In some cases, the vehicle had been decommissioned and in others, we updated the fleet summary to include the missing vehicle/equipment.

We also found that some vehicles had not been assigned a vehicle type. We assigned those vehicles a type based on similar makes/models in the fleet.

Phase 2. Gather Priorities for a Path Forward

Researched Infrastructure Needs

We met with representatives from Puget Sound Energy and Seattle City Light's fleet transition teams to understand customer- and utility-side infrastructure needs, and the structure and requirements of available incentive programs to support fleet transition to EVs.

Researched Available and Upcoming EV Models

Based on the vehicle and equipment types, makes, models, and original costs currently in Renton's fleet, we researched 23 EV alternatives that were similar in make/model to what is currently in the fleet. For each vehicle or equipment make and model, we reported:

- **Year** the EV will be on the market
- **Base cost** in 2023 dollars, since most of Renton's fleet purchases are for base models that are then upfit as needed.
- **Charge range**, defined as the approximate number of miles a vehicle can travel in combined city and highway driving. In most cases, charge range is an EPA estimate.
- **Efficiency**, reported as miles per gallon equivalent (MPGe). MPGe reports EV efficiency in the same terms as gas/diesel vehicles, to provide an apples-to-apples comparison.
- **Battery capacity** in kWh
- **Horsepower**

Developed and Vetted Criteria

Drafted Criteria

City staff identified the following priorities for the EV transition plan:

- **Adequately meet and respond to instruction to transition to EVs** (i.e., the Governor's mandate and any future direction from Council.)
- **Transition in a way that doesn't increase costs**, including costs of purchase, maintenance, charger installation, and ongoing charging. Leverage state incentives and grant funds.
- **Enable the City to keep and repair existing vehicles** that are still functional.

Based on these priorities, we developed draft criteria to align with how the City currently makes fleet purchase and decommission decisions, and to integrate sustainability as an additional decision criterion. To provide a dynamic fleet recommendations tool, criteria needed to meet the following conditions:

- **Be available** within City-provided fleet data or currently available market assessment data
- **Be a numeric value** (e.g., model year, original cost) so that Excel could be used to perform prioritization calculations

Vetted and Revised Criteria

We met with City staff on May 23 to review and revise the fleet criteria and their relative weights. In particular, we revised the criterion for service life to instead focus on vehicle age, which the City uses as a proxy for average service life. We also removed maintenance cost as a criterion, since per-vehicle data on maintenance costs are still uncertain. Table 8 shows the final list of criteria and their weights. Vehicle/equipment age, as a proxy for average service life, is the highest priority criterion, followed by EV purchase cost, EV efficiency, and impact – bulk opportunity.

Table 8. Criteria weighting factors for EV transition (lowest 1 - 10 highest)

	High Priority		Medium Priority		Low Priority	
Criterion	Threshold	**Points**	**Threshold**	**Points**	**Threshold**	**Points**
Fleet Inventory Criteria						
Vehicle/Equipment Age Age of the vehicle/equipment, calculated as 2023 - model year. Thresholds are proxies for average service life of most vehicles (10 years), police vehicles (8 years), and equipment like vactors and sweepers (5 years).	> 10 years	10	8-10 years	6	< 8 years	2
Impact: Fuel Efficiency A proxy for absolute emissions reduction for a single vehicle/ equipment, based on federal CAFE standards by type.	Low: 15-25 MPG	5	Standard: 25-35 MPG	3	High: > 35 MPG	1
Impact: Bulk Opportunity Number of similar vehicles/equipment in current fleet that could be transitioned to EV together.	≥ 10 vehicles	8	5-9 vehicles	4	3-4 vehicles	1
EV Market Criteria						
Supply Number of comparable EV options available during year of interest, by type.	≥ 5 options	4	2-4 options	3	1 option	2
Range Miles per full charge; a way to evaluate whether a work shift may be disrupted by needing to charge.	≥ 250 mi	4	150-249 mi	3	75-149 mi	2
Purchase Cost Cost difference between vehicle/equipment and comparable EV type (original cost - average cost of EV type, in 2023 dollars).	≤ 10% cost difference	8	11-25% cost difference	4	26-50% cost difference	1
EV Efficiency MPGe (mpg of gasoline-equivalent), averaged by type.	≥ 100 MPGe	8	75-99 MPGe	4	50-74 MPGe	1

Phase 3. Analyze Criteria and Make Recommendations

Using the criteria and their weights, we evaluated each vehicle and piece of equipment in Renton's current fleet to determine a total score for each. Since the City's focus for this plan is the next five years, we developed near-term fleet transition recommendations for the years 2023/2024 and 2026. We chose 2023/2024 to take advantage of utility incentive programs. We chose 2026 to allow time to build out EV infrastructure and leverage the anticipated increase in supply by 2025 as more automakers expand their EV lines.

To generate the phased recommendations for EV transition, we selected a minimum total score for a vehicle or piece of equipment in 2023/2024 and 2026. For immediate transition in 2023 or 2024, we required that the vehicle or piece of equipment have at least 70 percent of the total possible points and be currently available on the market. For transition in 2026, we required that the vehicle or piece of equipment was *not* identified for immediate transition and has at least 45 percent of the total possible points.

City Fleet EV Transition Gaps and Limitations

There are two key gaps and limitations in the City fleet data and transition plan:

- **Remaining service life is not specifically tracked in City fleet data.** Instead, the City uses vehicle age as a proxy for average service life remaining and has an internal process for regularly evaluating vehicles and equipment for potential replacement. The vehicles and equipment identified through the criteria ranking process will need individual evaluation through the City's existing internal process to determine whether an individual vehicle or equipment is ready to transition.
- **Maintenance costs by type are not currently available.** The City fleet data did not include information on annual operations and maintenance (O&M) costs by vehicle/equipment type. Similarly, data on lifetime maintenance costs for individual EV models is still being generated, although maintenance costs by EV type are increasingly available and suggest EVs have lower lifetime costs. Since the overall cost of a vehicle is its purchase price, upfitting needs, and ongoing O&M, the lack of O&M data is a key gap in the transition plan.

City Fleet EV Transition Findings

Current Fleet Composition

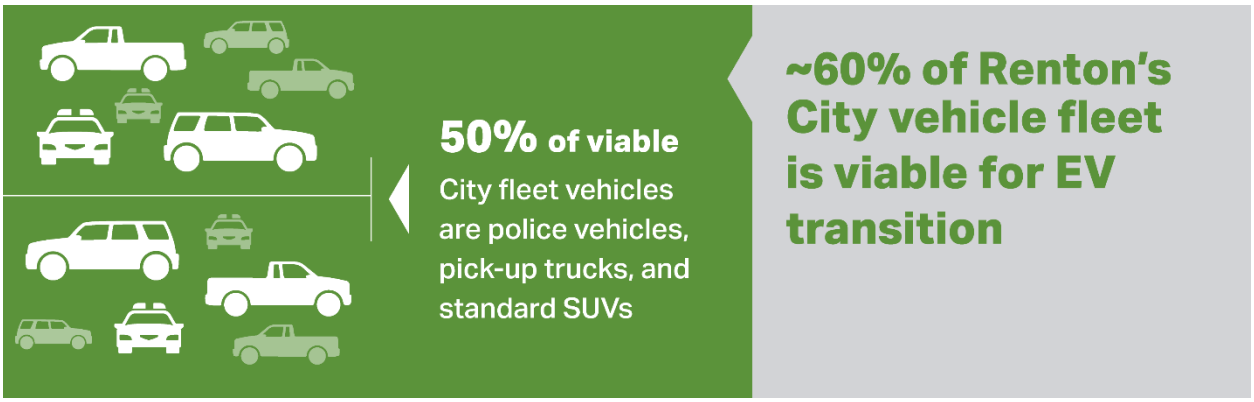
The City's 2023 fleet includes 611 vehicles and equipment. We estimate that **approximately 40 percent of Renton's fleet is not viable for an EV transition in the next five years.** This is either due to a lack of available alternatives in medium- and heavy-duty trucks and equipment or because equipment is not fuel-powered (e.g., trailers).

Most of these vehicles and equipment are found in the following vehicle/equipment types:

- Boat
- Construction equipment (low/medium/high)
- Equipment (low/medium/high)
- Generator
- Tractor
- Truck heavy
- Truck mini dump
- Truck utility body
- Water equipment

Of the approximately 60 percent of Renton's fleet that is viable for an EV transition in the next five years, the most common types are police vehicles, pick-up trucks, and standard SUVs. Together, they comprise 50 percent of the vehicles viable for an EV transition (and approximately 30% of Renton's overall fleet).

Figure 10. Percentage of Renton's fleet that is viable for EV transition



Market Assessment

Looking at all vehicle/equipment types, we found one or more EV alternatives for 15 of the City's 28 vehicle/equipment types, all of which are available now or in 2024 (Table 9). The list of alternatives is not exhaustive—we focused on EV alternatives that were more cost-competitive with the current fleet. Since police vehicles make up 20 percent of Renton's current fleet, we specifically researched viable alternatives for police use (see case study below).

Unique Considerations for Electrifying Police Vehicles

Vehicles used for police work have higher demands placed on them than their standard counterparts, whether powered by gas, diesel, or electricity. EVs must be able to handle the increased weight from upfitting which can reduce EV range, increased battery usage from running equipment while idling, and in some cases, be pursuit-rated.

Given the upfitting and operational needs of police vehicles, we specifically researched EV alternatives for police vehicles that are in use today or will be on the market in the next 1-2 years. These alternatives include the Ford Mustang Mach-e, Tesla Model Y Long Range, Ford **F-150 Lightning SSV**, GMC **Hummer SUV**, and the **pursuit-rated** Chevrolet Blazer PPV EV.

NYPD now has 100 all-electric **Ford Mustang Mach-e's** in their fleet for patrol purposes, and the City of **South Pasadena**, CA is transitioning their 20-vehicle fleet to **Tesla Model-Y Long Range** in the next year. Both vehicles rate well in terms of speed and acceleration. The Mach-e has 480 hp, compared to 315-500 hp in its gas counterpart. The **Spokane Police Department** also piloted **Teslas for patrol**: their speed and efficiency were a plus, and charging was not an issue. However, the large dashboard screen took up space and made upfitting a challenge.

As the EV market continues to grow, the number of viable alternatives for police use is also expected to grow.

Table 9. List of vehicle types and available EV alternative models

Type	EV Alternative	
Cargo van	Ford	E-Transit Van
Crime Scene Van	Ford	E-Transit Van
Equipment (High/Med/Low)	John Deere	Z370R Mower
Hybrid Vehicle	Nissan	Nissan LEAF S
	Chevrolet	Bolt EV
	Polestar	Polestar 2
	Volvo	EX30
	Volvo	XC40 Recharge
	Tesla	Model 3
Landscaping Equipment	John Deere	Z370R Mower
Motorcycle	Harley-Davidson	LiveWire ONE
Police Vehicle w/ Upfitting	Ford	F-150 Lightning SSV

Type	EV Alternative	
	Ford	E-Transit Van
	Chevrolet	Silverado EV
	GMC	Hummer EV SUT
	GMC	Sierra EV, Denali edition
	Hyundai	Kona EV
	Ford	Mustang Mach-E
	Tesla	Model Y Long Range
Sedan standard	Nissan	Nissan LEAF S
	Chevrolet	Bolt EV
	Polestar	Polestar 2
	Volvo	EX30
	Volvo	XC40 Recharge
	Tesla	Model 3
	Tesla	Model 3
	Hyundai	IONIQ 6
SUV Compact	Hyundai	Kona EV
	Ford	Mustang Mach-E
	Chevrolet	Bolt EUV
	Volkswagon	ID.4
	Tesla	Model Y Long Range
	Hyundai	IONIQ 5
	Chevrolet	Blazer EV
	Volvo	EX30
SUV Police	Chevrolet	Blazer EV
	GMC	Hummer EV SUV
	Kia	Niro EV Wind
SUV Police with upfitting	Chevrolet	Blazer EV
	GMC	Hummer EV SUV
SUV Standard	GMC	Hummer EV SUV
	Kia	Niro EV Wind
Truck Pickup	Ford	F-150 Lightning
	Chevrolet	Silverado EV
	GMC	Hummer EV SUT
	GMC	Sierra EV, Denali edition
Utility Vehicle	John Deere	TE 4X2 Gator Electric Utility Vehicle

Infrastructure

Siting

City staff identified the following sites as potentially suitable for fleet charging locations. Renton qualifies for both Seattle City Light and Puget Sound Energy's fleet transition programs. Importantly, to participate in Seattle City Light's fleet EV incentive program, sites must be on private property, accessible only to City staff, and not be used for public charging. Puget Sound Energy does not have this requirement.

- City Hall
- Public Works maintenance facility (NE 2nd St)
- Parks & Facilities shops (1st St)

Staff mentioned some considerations for charging stations, including:

- **The level of charging (Level 1, 2, or 3)** to choose at each site. City staff can use Level 1 chargers for overnight spaces and potentially faster chargers at other locations for a quick charge when travelling around the City during the day.
- **Security and access to sites**, even for City staff.

Charging Stations

Installation of EV infrastructure is generally categorized as follows:

- **To-the-meter infrastructure** are located on the utility's side of the electric meter. The utility will own, operate, and maintain this infrastructure.
- **Behind-the-meter infrastructure** are located on the City's side of the electric meter. The City or the utility can own, operate, and maintain this infrastructure.
- The **charger itself,** which can be owned, operated, and maintained by the City or the utility.

For existing electric customers like the City of Renton, both Seattle City Light and Puget Sound Energy offer incentive programs to install EV charging infrastructure. **Due to the limited SCL service area in Renton, PSE's incentive program will better enable the city to build out EV infrastructure.** Both utilities request a simple application providing the proposed location of charging infrastructure within their service area and basic information about the electric service. Through the utility's evaluation process, the specific siting, design, electrical load requirements, and hardware are then determined.

Seattle City Light Incentive Program

Below, we summarize the key requirements and incentive elements of SCL's program. Please see Fleet Electrification Program for additional information and their application. While SCL does not have incentives to purchase EVs, they do have an advisory service that can provide information on EV grants and incentives. They also offer a wider variety of charger incentives for off-road equipment.

Requirements

The key requirements are summarized below; a full list of requirements is available from SCL or the City.

- Existing electric customer
- Project site located on private property and only used to charge fleet vehicles (i.e., not accessible to general public)
- Written intent to purchase at least one EV or electric piece of equipment that will be charged with equipment installed through program
- Minimum output power or voltage for chargers and equipment, respectively
- Charging connectors compliant with specific standards and compatible with the EVs they will charge

Incentive options

SCL offers three types of incentive programs:

- **Incentives for on-road vehicle charging** for Level 2 and DC fast chargers to cover up to 50 percent of project costs per charger port. SCL will own the to-the-meter infrastructure. The City will own the behind-the-meter infrastructure and charger.
- **Incentives for off-road vehicle charging** for forklifts, yard trucks, rail yard equipment, and standby for transport refrigeration units to cover up to 50 percent of project costs per charger port.
- **Make-ready incentives** for Level 2 or DC fast chargers in environmental justice communities to cover up to 100 percent of make-ready infrastructure costs. SCL will own the to-the-meter and behind-the-meter infrastructure, as well as design, construct, and install the utility-side and City-side infrastructure. The City will select, purchase, install, and own the charger.

Table 10. On-road vehicle charging incentives

Charger Type	Incentive Amount per Port	Total Funding Cap per Site
Level 2 Wall Mount	$3,000	Not to exceed $30,000 for single site
Level 2 Pedestal Mount	$4,000	
DC Fast Charger 50	$30,000	Not to exceed $100,000 for single site
DC Fast Charger 150	$50,000	

Table 11. Off-road equipment charging incentives

Technology	Charger Type	Incentive Amount per Port	Total Funding Cap per Site
Forklift Chargers (for Class 1 or Class 2 forklift)	Rapid or conventional	$3,000	Not to exceed $30,000 for single site
Electric Standby Infrastructure for Transport Refrigeration Units	Wall or pedestal mount	$1,000	
Yard Truck Chargers Rail Yard Equipment Chargers	Level 2 Wall Mount	$3,000	
	Level 2 Pedestal Mount	$4,000	Not to exceed $200,000 for single site
	DC Fast Charger 50	$30,000	
	DC Fast Charger 150	$50,000	
	DC Fast Charger 350	$100,000	

Puget Sound Energy Incentive Program

Below, we summarize the key requirements and incentive elements of PSE's program. Please see Up and Go Electric for Fleet for additional information.

Requirements

The key requirements are summarized below; a full list of requirements, as well as sample agreements, is available on PSE's webpage.

- Existing electric customer
- Purchase or lease two EVs by the time the charger is installed. Customers qualifying for Empower Mobility need one EV by the time the charger is installed.
- 10-year service agreement that requires operating the equipment for 10 years and providing dedicated EV charging parking stalls.
- Maximum incentive value per charging location is $250,000.

Incentive options

PSE offers three types of incentive programs:

- **General incentives** for Level 2 charger, DC fast charger, and battery-electric forklift. Under the PSE-owned option, the utility completes planning, design, installation, and maintenance of the charger, including the utility infrastructure and facility upgrades needed. Under the Renton-owned option, the City would install, own, and maintain the charger.
- Since Renton serves several census tracts that are a 9 or 10 on Washington's Environmental Health Disparities map, the City is most likely eligible for additional **Empower Mobility**

incentives for Level 2 chargers, DC fast chargers, and Class 1-8 vehicles. We recommend the City email evfleet@pse.com to confirm eligibility.

- **Off-peak charging** is an annual incentive that ranges from $120 for a Level 2 charger to $2,000 for a large DC fast charger. Customers receive a quarterly credit, prorated for the percentage of time that charging occurred in off-hours.

Table 12. General incentives for EV charging and electric forklifts

	EVSE Ownership Option	
Incentive Category	**PSE-Owned Turnkey Service**	**Renton-Owned**
Level 2 charger + make-ready	Up to $10,000/port	Up to $4,000/port
DC fast charger + make-ready	Up to $125,000/port	Up to $60,000/port
Battery electric forklift	$2,000/EV	$2,000/EV

Table 13. Empower Mobility incentives for EV charging and EV purchases

	EVSE Ownership Option	
Incentive Category	**PSE-Owned & Maintained**	**Renton-Owned & Maintained**
Level 2 charger + make-ready	Up to $10,000/port	Up to $6,000/port
DC fast charger + make-ready	Up to $125,000/port	Up to $100,000/port
Light-duty vehicle (Class 1-2)	$7,500/EV	$7,500/EV
Medium-duty vehicle (Class 3-6)	$100,000/EV	$100,000/EV
Heavy-duty vehicle (Class 7-8)	$150,000/EV	$150,000/EV

Note: EV incentive for medium- and heavy-duty vehicles is up to 50 percent of the incremental cost of an equivalent fossil-fuel powered vehicle

City Fleet EV Transition Recommendations

The recommendations below are based on evaluating each vehicle and piece of equipment in the City's fleet by its age, emissions reduction potential, and suitability of EV alternatives in terms of purchase cost, range, and efficiency.

Consistent with the City's current practices, we recommend prioritizing vehicles and equipment for EV transition as they near the end of their service life. However, while vehicle age (as a proxy for service life) is the strongest weighted criteria in the fleet transition plan, we also recommend strongly considering the availability, cost, and emissions reduction potential of transitioning to an EV at any point in a vehicle or equipment's service life. EVs are increasingly cost-competitive and are expected to have lower lifetime maintenance costs, especially since the City tends to replace vehicles every

10 years and EV batteries also need replacement every 10-20 years. EV supply will only increase in the coming years and addressing transportation emissions is one of the City's highest emissions reduction priorities.

We recommend the following steps.

Step 1. In 2023, Purchase at Least Two EVs

This step will enable the City to qualify for Seattle City Light and Puget Sound Energy incentive rebate programs for installing chargers for City fleet use. Of the 17 vehicles prioritized for transition in 2023/2024, five are Ford Escape Hybrids and one has more than 150,000 miles. Other vehicles with approximately 100,000 miles or more include a Chevrolet Tahoe, Acura TSX, Dodge Avenger, Toyota Camry Hybrid, and Ford Crown Victoria. As a result, the following EV options may be strong candidates for purchase. All are sedans or crossovers/small SUVs ranging in base price from $33,500 to $47,795 (average: $38,899):

- Hyundai Kona EV
- Kia Niro EV Wind
- Volvo EX30 (available Fall 2023 by application or 2024 in general)
- Ford Mustang Mach-e
- Hyundai IONIQ 5
- Hyundai IONIQ 6

Step 2. In 2023, Enroll in Utility Incentive Programs and Begin Infrastructure Build-out Plan

The goals of enrolling in Puget Sound Energy and/or Seattle City Light's programs are to reduce capital costs and jumpstart infrastructure improvements. For PSE's program, the City can consider locating chargers in the three locations suggested by City staff:

- City Hall
- Public Works maintenance facility (NE 2nd St)
- Parks & Facilities shops (1st St)

For SCL's program, the City can explore private property options within the small portion of SCL's service area within Renton city limits.

Given that 230 vehicles/equipment (38% of Renton's fleet) have been prioritized for EV transition by 2026, we recommend the City begin a detailed infrastructure build-out planning process. Factors like the number and location of needed chargers, the number of chargers that individual locations can accommodate, and the type of chargers needed for each location will need to be determined and are outside the scope of this effort.

Step 3. In 2024, Replace Remaining Vehicles Identified for Immediate Transition and Conduct Assessment For Police Fleet Transition

We recommend the City transitions 3 percent of its fleet to EV and install chargers. Depending on which vehicles are purchased in Step 1, transitioning these vehicles will cost an estimated $620,720, which corresponds to an estimated 29 percent cost savings compared to the vehicles' original purchase cost:

- Hybrid vehicle (9 of 9 vehicles)
- SUV Standard (1 of 47 vehicles)
- Sedan standard (7 of 21 vehicles)

Transitioning police vehicles will require more logistics than transitioning other types of City fleet vehicles, but options are available and will be increasingly so. Building on the case study results, we recommend the City conduct a detailed assessment for how and when to transition the police fleet to EV, recognizing that some vehicles may need to remain gas-powered for the foreseeable future.

Lastly, in 2024, we recommend the City consider developing an EV purchase preference for implementation in 2025, especially for vehicle types that are already readily available on the market or will be within 1-2 years (compact cars, sedans, compact SUVs, standard SUVs, and pick-up trucks). Implementation in 2025 provides time for infrastructure build-out to accommodate additional EVs purchased through an EV purchase preference.

Step 4. In 2025, Confirm Vehicles Identified for 2026 Replacement and Continue Infrastructure Build-Out

In 2025, confirm that vehicles slated for 2026 replacement with EVs are actually planned for replacement, given that some vehicles can be (and often are) kept longer if they are performing well and do not have too many miles on them. We also recommend updating the market assessment and cost information to reflect 2026 dollars, as market availability should continue to increase and costs should level out further. The build-out of chargers should also align with the vehicles slated for replacement.

Recognizing the unique requirements of police vehicles, we recommend the City pilot EVs for patrol and consider piloting EVs for pursuit, with the purchase aligned with when EV charging infrastructure will be operational. By 2026, consider transitioning at least 35 percent of upfitted police vehicles (34 SUVs and 11 other police vehicles).

Step 5. Purchase EVs Identified for 2026 Replacement

In 2026, we recommend the City transition an additional 35 percent of its fleet to EVs. Our initial recommendations of vehicles to replace follow, but should be updated based on new information from the market assessment completed in Step 4:

- Sedan standard (14 of 21 vehicles)
- SUV Compact (2 of 2 vehicles)

- SUV Standard (41 of 47 vehicles)
- Truck pickup (61 of 85 vehicles)
- Cargo van (3 of 12 vehicles)
- Crime scene van (1 of 1 vehicle)
- Motorcycle (2 of 4 vehicles)
- Police vehicle with upfitting (14 of 16 vehicles)
- SUV Police with upfitting (74 of 110 vehicles)

Transitioning these vehicles will cost an estimated $12.9 million, which corresponds to an estimated 43 percent additional investment compared to the vehicles original purchase cost. The high additional investment is due to the number of SUVs and pick-up trucks identified for replacement; these are still more expensive compared to their fossil-fuel powered counterparts. However, this cost difference is expected to decrease as additional EVs come on the market and prices level out—updating the market assessment in 2025 will be important to ensure the City's goal of a cost-conscious EV transition is met. Additionally, with an annual fleet replacement budget of $3-4 million, the City may need to rollover part of the 2023-2025 replacement budgets (if viable), pursue incentives (like PSE's) and grant funding for EV purchases, and/or prioritize EV transition in 2024 and 2025 for standard vehicle types up for replacement, provided available infrastructure is sufficient.

If funding or infrastructure are insufficient to transition an additional 35 percent of the fleet in 2026, we recommend the City use the dynamic workbook to set a higher threshold for EV replacement in 2026 or delay the goal to 2027 to provide additional time for funding and infrastructure to be in place.

Appendices

Appendix A: Current State Memo

Overview

This memo summarizes findings from a review of Renton's electric vehicle (EV)-related policies, codes, and documents; regional and statewide EV policies and programs; and meetings with City stakeholders. The goal of this document is to capture where the City currently stands in terms of EV-related policies and practices, as well as the status of regional standards that could affect Renton's EV charging plans. We used this information to shape recommendations for Renton's EV Charging Plan so that they align with regional and state standards and reflect progress that the City has made.

Document Roadmap

Sections of the memorandum are as follows:

- Methodology
- Findings
    - Renton's EV Planning and Policy Context, including EV charging initiatives and Renton Clean Economy Strategy 2.0
    - State and Regional EV Planning and Policy Context
    - Electric Vehicle Charging Infrastructure Code Context
    - Electric Vehicle Plan Document Review

Methodology

Document Review

We conducted a review of City documents and of state and regional documents. To develop this list of documents, we conducted initial research and collaborated with the project team. The review of City documents covered the following documents:

- 2022-2027 Business Plan (2021)
- Rainier/Grady Junction Subarea Plan (2021)
- Housing Action Plan (2021)
- Parks, Recreation, & Natural Areas Plan (2020)
- Comprehensive Plan (2015)
- Trails and Bicycle Master Plan (2019)
- Civic Core Vision and Action Plan (2018)
- Draft Clean Economy Strategy 2.0 (2023)

The review of the regional context covered the following legislation, plans, and partnerships:

- **Washington State Plan for Electric Vehicle Infrastructure Deployment, 2022**
- **Puget Sound Energy Transportation Electrification Plan, 2021**
- **Seattle Curbside Level 2 EV Charging: Minimum Requirements for Charging Stations, 2022**
- **Seattle City Light EV Public Charging – Site Selection Process, 2018**
- **City of Bellevue Smart Mobility Plan, 2018**

Our review of peer cities' EV infrastructure requirements in municipal codes included Seattle, Bellevue, Bainbridge Island, Edmonds, and Olympia.

Staff Meeting

We met with City staff on April 11, 2023 and listed the documents reviewed, then asked: "What did we miss? What current EV planning efforts are underway?" Their answers are summarized in EV Charging Initiatives.

Renton EV Planning and Policy Context

Renton staff noted that there have been some past EV charging initiatives and there is interest in future EV-related planning. The CES 2.0 is the key policy document related to EV planning in Renton and is projected to be finalized in 2023. Other planning documents did not mention electric vehicles at all (See Appendix A: City of Renton Document Summary Tables for full document review results).

EV Charging Initiatives

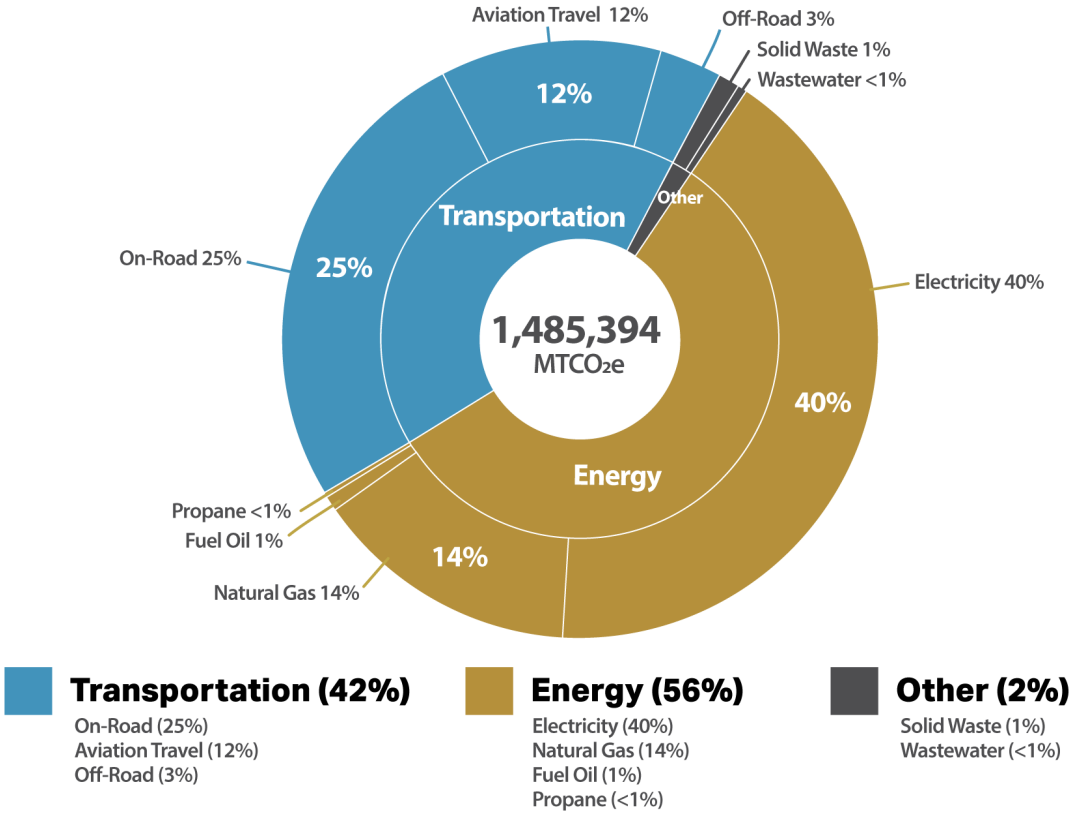
The City of Renton documents review did not reveal any past or current planning initiatives that included EVs. During the staff meeting on April 11th, staff noted that:

- ITS is planning to develop a scope for a plan that would guide charging station installations on City streetlight poles.
- The City is planning to replace City-owned charging stations at City Hall and in the Landing Garage.

Renton Clean Economy Strategy 2.0

Analysis for the CES 2.0 revealed that as of the City's 2019 greenhouse gas emissions inventory, **40 percent** of communitywide emissions came from the transportation sector. The majority of these came from on-road vehicles which made up **62 percent** of transportation emissions and are largely a result of gasoline and diesel passenger vehicles. The makeup of Renton's emissions, including those from transportation, is shown below.

Figure 11. Renton's 2019 communitywide GHG emissions



Using King County targets, we modeled the impact of increasing the percentage of new vehicles sold that are electric. If Renton sets a goal to have 100 percent of new passenger vehicles sold in Renton (aligning with K4C targets), this would achieve a **5 percent** emissions reduction by 2035 in addition to emissions reductions from federal and state policies such as those referenced in *Policy Context*.

There is one action in the CES 2.0 (to be finalized in 2023) related to EV planning, which is:

Action ID	Short Name	Description
TL 3.1	Create an EV plan	Create an overall strategy to guide expansion of electric vehicle charging infrastructure and support adoption of EVs in Renton. This can include strategies to: • Expand City-owned charging infrastructure in Renton, while considering chargers' locations, costs, and types. • Develop incentives and financing mechanism for commercial EV charging stations. • Promote clean vehicle incentives and programs, especially to ensure equitable distribution of EV benefits. Promote state and federal EV purchase incentives.

State EV Planning and Policy Context

This section details relevant state and regional EV-related policies, plans, and programs.

Statewide goals for EV sales and usage:

- In Dec. 2022, the Washington Department of Ecology adopted rules to increase sales of increase zero emission vehicles, including passenger cars, light-duty trucks, and medium-duty vehicles, until zero-emission vehicles make up 100 percent of new sales starting in model year 2035. The rules also require cleaner-burning engines in medium- and heavy-duty trucks.[17]
- In 2015, Washington state committed to putting 50,000 electric vehicles on the road by 2020. Since then, Washington has surpassed this goal, with approximately 66,500 EVs on the road as of January 2021.[18]

Key statewide policies that guide EV infrastructure and adoption in Washington

2021: Healthy Environment for All (HEAL) Act (E2SSB 5141):

Defines environmental justice in state law and embeds it in state agency work. The Washington State Department of Transportation (WSDOT) is required to create a community engagement plan and use the Washington Environmental Health Disparities Map in decision-making processes.

2019: Clean Energy Transformation Act (SB 5116)

By 2045, utilities must supply Washington customers with electricity that is 100 percent renewable or non-emitting, with no provision for offsets. This bill describes specific milestones to reach this goal and will result in reduced emissions from EV's in Washington.

Clean Fuel Standard (HB 1091)

Requires cleaner fuels, either by using cleaner fuels directly or by purchasing clean fuel credits from cleaner producers, such as those providing electricity as fuel.

2021: EV Preparedness (HB1287)

Requires the state Department of Transportation to develop a publicly available tool to find EV charging locations around the state. The bill also extended the Clean Building Act's requirement for EV readiness to new single-family construction. This bill also requires electric utilities of a certain size to plan electricity capacity to support the expected number of electric vehicles on the roads.

[17] *Press Announcement, Washington State Department of Ecology*
[18] *Transportation Electrification Plan, Puget Sound Energy, 2021*

2021: EV Charging Station Fees (SB 5192)

Requires that by 2023, all public charging infrastructure must display all charges/fees related to charger operation. Additionally, SB 5192 defines that anyone who parks in a space with an EV charger but does not connect to the charger is subject to a fine of $124.

2009: Electric Vehicle Bill (2SHB 1481)

Supports EV use and infrastructure investments by local jurisdictions of a certain size. Also authorized an alternative fuels corridor pilot project.

Additional statewide regulations

EV Promotion and Infrastructure Development (RCW 47.80.090)

Any regional transportation planning organization containing a county with a population of greater than one million must collaborate with state and local governments to promote EV use, invest in EV charging infrastructure, and seek federal or private funding for these efforts.

State EV Charging Infrastructure Availability (Revised WAC 43.01.250, 43.19.648, and 47.38.075)

Publicly and privately owned EVs may charge at state office locations if the vehicles are used for state business, conducting business with the state, or as commuter vehicles.

Alternative Fuel Vehicle Retail Sales and Use Tax Exemption (RCW 82.12.9999)

The sale or lease of new or used passenger vehicles, light-duty trucks, and medium-duty passenger AFVs is exempt from the state retail sales and use tax.

Statewide tools and coalitions

EV Infrastructure: A guide for local governments in Washington State

Published in 2010 after passage of the Electric Vehicle Bill (2SHB 1481), this document provides model ordinance, model development regulations, and guidance related to EV infrastructures and batteries per RCW 47.080.090 and 43.31.970**.**

EV Infrastructure Support

Washington utilities joined the National Electric Highway Coalition (NEHC), committing to create a network of direct current fast charging (Level 3) charging stations connecting major highway systems from the Atlantic Coast to the Pacific of the United States.

Alternative Fuel Vehicle Technical Assistance and Education Program

The Washington State University (WSU) Energy Program manages a technical assistance and education program related to the use of Alternative Fuel Vehicles (AFV's). This program is provided for public agencies which includes, but is not limited to cities, counties, utilities and PUD's, transit agencies, and ports.

Clean Cities Coalitions

Washington is home to the Columbia-Willamette Clean Cities and Western Washington Clean Cities coalitions, which work with vehicle fleets, fuel providers, community leaders, and other stakeholders to save energy and promote the use of domestic fuels and advanced vehicle technologies in transportation.

Electric Vehicle Infrastructure Building Code Context

The City of Renton is covered by municipal code, King County code, and Washington state code.

State Code 2023 Update

The 2021 Washington building code will enter effect in November 2023. It will require that all buildings and accessory structures offer EV charging stations, EV-Ready parking spaces, and EV-capable parking spaces. On-site parking with less than 10 parking spaces are not required to comply.

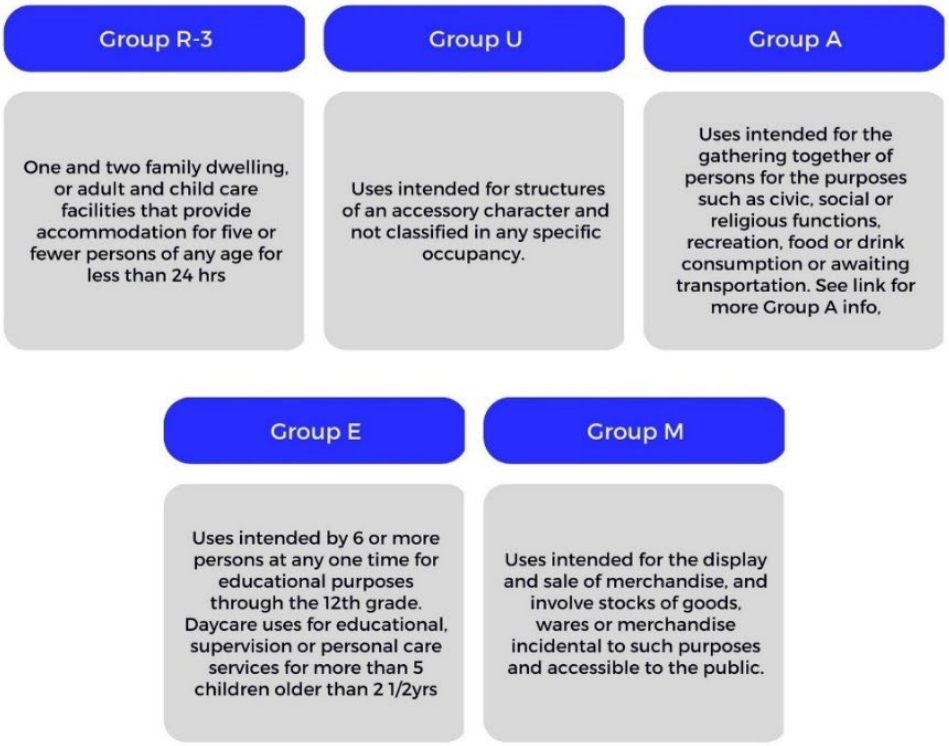
EV-capable parking is defined as including the infrastructure for future installations of EV charging stations, including conduits. EV-ready is defined as including the infrastructure plus a wired outlet for charging.

Figure 12. WA State Building Code EV Infrastructure Requirements by Occupancy Group as of July 1, 2023

OCCUPANCY	# OF EV CHARGING STATIONS	# OF EV-READY PARKING SPACES	# OF EV-CAPABLE PARKING SPACES
Group A, B, E, F, H, I, M, and S occupancies	10% of total parking spaces	10% of total parking spaces	10% of total parking spaces
Group R occupancies			
Buildings that do not contain more than two dwelling units	Not required	One for each dwelling unit	Not required
Dwelling units with private garages	Not required	One for each dwelling unit	Not required
All other Group R occupancies	10% of total parking spaces	25% of total parking spaces	10% of total parking spaces

The groups referenced are displayed in the figure below.

Figure 13. WA State Building Code Occupancy Groups



In addition, electrical service, systems and on-site distribution transformers must have sufficient capacity to simultaneously charge all EVs at all required EV stations, EV parking spaces and EV-capable parking spaces at a minimum of 40-ameres each. Automatic Load Management System (ALMS) may be used to adjust the maximum electrical capacity required for EV-Ready and EV-Capable parking spaces. Raceways that are planned to be installed underground or in inaccessible or concealed areas must be installed at the time of original construction.

Finally, ten percent of accessible parking spaces must be provided with electric vehicle charging stations. An additional ten percent of accessible spaces must be EV ready. No fewer than one for each type of EV charging station must be accessible. A maximum of ten percent of accessible parking spaces are allowed to be included in the total number of electric vehicle parking spaces required.

City of Renton Code

City of Renton codes mention electric vehicles in only one location: Section 4-11-210 defines “Utilities, small” as including “electric vehicle infrastructure located on public or private property such as a charging station.”

King County Code

King County codes have more content related to EV charging than Renton’s municipal code and align with current (June 2023) state codes around EV parking. King County Code Title 21A

(aligns with WAC 51-50-0427) contains definitions and requirements for EV charging.[19] Definitions are:

- **EVSE Parking:** A parking space with electric-vehicle-supply-equipment (EVSE) or an "EV charger" that can supply current at a minimum of 208/240 volts, either by EVSE directly serving the parking space or by adjacent EVSE capable of serving multiple parking spaces simultaneously. Commonly called a "level 2" charger.
- **EV-Ready:** A parking space provided with a minimum 208/240-volt dedicated branch circuit that is terminated at a receptacle or junction box within the parking space in order to allow for the future installation of EVSE.

The requirements for these types of parking spaces are summarized in Figure 1. They apply for new buildings and any buildings where "maintenance, repair, structural modification, addition or other structural improvement the cost of which equals or exceeds 50 percent of the structure's market value before the improvement or repair is started," or when paved surface parking is expanded by 50 percent or more.

Figure 14. Summary of King County Code Requipements for EV Parking

EV Parking Requirements						
Use	**Type of Development**			**EVSE Parking[1]**	**EV-Ready[1]**	**Additional Elect. Capacity** *NEW buildings only for* ***Electrical Rooms,*** *if present[5]*
	New	*Substantial Improvement[2]*	*Parking Area Expansion[3]*			
	X indicates the requirements apply					
Townhouse[4]	X	*N/A*	*N/A*	*N/A*	1 space per unit	*N/A*
Apartment building[4]	X	X	X	10%	25%	*N/A*
Group residential or temporary lodging[4] *See K.C.C. 21A.08.030.*	X	X	X	5%	10%	5%
Nonresidential building	X	X	X	5%	10%	5%
Commuter parking lot or automotive parking	X	X	X	5%	10%	*N/A*

[19] SOP Template, 2020_05_13 (kingcounty.gov)

Other City and County Codes

Renton and King County's codes combined are in line with the detail within the other Washington cities' codes we reviewed: Bellevue, Bainbridge, Seattle, Edmonds, and Olympia. It is out of scope of this review to make recommendations for Renton's code, but key differences between Renton/King County's code and the reviewed codes are summarized below. The full code results are in Peer Cities Code Review.

Definitions:

- **Some included definitions that Renton/King County codes do not have:** "EV-Capable Parking Spaces," (Bainbridge, Edmonds, and Olympia) "Level 1, 2, and 3 Charging" (Edmonds) and/or "Battery Exchange Stations" (Bellevue, Edmonds).
- **Most combined definitions for EVSE equipment and parking spaces** (so that "EVSE" means a parking space with EVSE installed), while Olympia has separate definitions for "EVSE" (meaning equipment) and "EVSE parking" (meaning parking with EVSE installed).

Applicability:

- **All codes apply to new developments, but they vary in application to altered developments.** Seattle's code only applies to new buildings. Bainbridge's code applies when existing buildings' footprints expand by 5 percent. Edmonds' applies for parking increases of 50 percent. Olympia's applies when buildings or structures are improved by an amount equal to or greater than fifty percent of the assessed value.
- **The categories of buildings and parking lots covered under the requirements vary** among codes. Some include single-family residential dwellings. Some include multiple categories of non-residential buildings.

EV Infrastructure Requirements:

- **Some contained requirements for "EV Capable" parking spaces** in addition to "EV Ready" and "EVSE" parking (Bainbridge, Edmonds, and Olympia).
- The percentage of spaces required to have EV infrastructure (overall and by building type) **varies among codes**; some exceed the WA state code requirements.
- Edmonds' code contains requirements for charger size, installation, location, protection, and maintenance.
- Some contained details around requirement reduction criteria (Olympia, Seattle).

EV Infrastructure Incentives:

- **Bainbridge code included incentives** to exceed EV infrastructure requirements.

Signage:

- Bainbridge requires operator contact information to be posted on signage indicating EV infrastructure

Electric Vehicle Plan Document Review

This section briefly summarizes learning outcomes from our review of the following plans:

- Washington State Plan for Electric Vehicle Infrastructure Deployment, 2022
- Puget Sound Energy Transportation Electrification Plan, 2021
- Seattle Curbside Level 2 EV Charging: Minimum Requirements for Charging Stations, 2022
- City of Bellevue Smart Mobility Plan, 2018
- Seattle City Light EV Public Charging – Site Selection Process, 2018

The full results of the review, including all details collected from each plan, are in a subsequent section. In our review of local, regional, and state EV infrastructure-related planning efforts, we found these key findings:

- There are ongoing efforts from Washington State and Puget Sound Energy that will likely support charging infrastructure in Renton. Washington State plans to install charging stations along interstate corridors; Puget Sound Energy is already hosting EV charging pilot programs and will continue to do so in the next several years.
- **Other cities, such as Bellevue and Seattle, so far do not provide a direct guide for the City of Renton.** The City of Seattle's approach to EV infrastructure planning relied on engaging 1,800 people and collecting their direct requests for EV charging locations. Bellevue's Smart Mobility Plan contains goals to install EV infrastructure and transition the City's fleet to EVs, but does not contain tactical details for Renton to learn from.
- **Seattle City Light's 2018 site selection process offers a guide for the City of Renton.** A major learning outcome is that contracting with non-Seattle-City-Light-owned properties presented enough of a contracting barrier that even though the utility researched and created a draft contract to engage site hosts, they ultimately chose only locations that were owned by Seattle City Light.

City of Renton Document Summary Tables

The following tables present results of our review of City of Renton planning documents.

Trails & Bicycle Master Plan (2019)
What is the primary goal of the program, plan, or policy? • Improving safety • Creating an accessible and connected system • Promoting physical and environmental health • Achieving equity • Enhancing the economy and community
Are there any activities related to EVs or EV infrastructure?
No.
What City department(s) is/are involved? • Parks Commission • Planning Commission
What is the timeline of the program/plan/policy? **1.** Adopted Jan 28, 2019 2. Goals set for 2035

Parks, Recreation, and Natural Areas Plan 2020
Are there any activities related to EVs or EV infrastructure? No.
What is the primary goal of the program, plan, or policy? • Presents a long-term vision and goals for the City's parks, recreation and natural areas and community for the next 20 years; • Describes current and future needs, interests and community preferences for parks, recreation facilities and programs and natural resources • Identifies system-based policies, implementation strategies and an investment program to enhance and sustain parks, recreation and natural areas as critical elements of a vibrant community. • Provides a framework to guide the City in setting priorities, making decisions and funding improvements and operations for Renton's parks, recreation facilities and natural areas; and • Responds to the needs of the community as well as the requirements of the State of Washington Recreation and Conservation Office (RCO) for grant funding eligibility.
What City department(s) is/are involved? • The Community Services Department is the primary manager of the park and natural area system. • Also: Parks Commission, Planning Commission, & Mayor's Inclusion Task Force
What is the timeline of the program/plan/policy? • Adopted January 2020 • Vision and goals set through 2040

City of Renton Business Plan 2022-2027
Are there any activities related to EVs or EV infrastructure? No.
What is the primary goal of the program, plan, or policy? To support the City of Renton's vision, which is to: • Provide a safe, healthy, vibrant community • Promote economic vitality and strategically position Renton for the future • Support planned growth and influence decisions to foster environmental sustainability • Build an inclusive informed city with equitable outcomes for all in support of social, economical, and racial justice • Meet service demands and provide high quality customer service
What City department(s) is/are involved? All
What is the timeline of the program/plan/policy? • 2022-2027

Housing Action Plan 2021
Are there any activities related to EVs or EV infrastructure? No.
What is the primary goal of the program, plan, or policy? It focuses on near-term solutions to increase housing availability and affordability, to achieve a community vision of a more vibrant, inclusive, and equitable future.
What City department(s) is/are involved? Planning Commission,
What is the timeline of the program/plan/policy? 5 years

Rainier/Grady TOD Subarea Action Plan 2021
Are there any activities related to EVs or EV infrastructure? No.
What is the primary goal of the program, plan, or policy? The City of Renton contracted with MAKERS Architecture and Urban Design to create a subarea plan to guide future development and investment in the area. Core goals for the Plan: • Create a vision for a livable, distinct, mixed-income neighborhood that is different from, yet aligns with the City Center Subarea and Downtown. • Develop conceptual strategies to transform the area into a pedestrian-oriented district with a multimodal center and strong pedestrian connections that gracefully integrate with neighboring areas. • Leverage the recent and planned public investment in the area for private investment to follow. • Identify public investments, improvements and development regulations to help area evolve into a more cohesive district.
What City department(s) is/are involved? Community and Economic Development
What is the timeline of the program/plan/policy? Adopted 2021; timeline for activities is not specified.

Civic Core Community Action Plan 2018
Are there any activities related to EVs or EV infrastructure? No.
What is the primary goal of the program, plan, or policy? • Better manage publicly owned facilities like the City Center Parking Garage and Pavilion Event Center, as well as public and private parking in the business district. • Work with King County Metro and Sound Transit to move bus layover areas outside of the Civic Core, while keeping the level of downtown transit service the same or making it better than what currently exists. • Coordinate downtown activities with the Renton Downtown Partnership.
What City department(s) is/are involved? All
What is the timeline of the program/plan/policy? • Adopted 2018. Ongoing.

Comprehensive Plan 2018-2023
What is the primary goal of the program, plan, or policy? • To comply with the Growth Management Act and provide a roadmap to achieve the City of Renton's vision.
What City department(s) is/are involved? All
What is the timeline of the program/plan/policy? • Adopted 2015. • Timeline 2018-2023.

Review of Local and State EV-related Plans

Results of a review of the following plans are below:

- Washington State Plan for Electric Vehicle Infrastructure Deployment, 2022
- Puget Sound Energy Transportation Electrification Plan, 2021
- Seattle Curbside Level 2 EV Charging: Minimum Requirements for Charging Stations, 2022
- Seattle City Light EV Public Charging – Site Selection Process, 2018
- City of Bellevue Smart Mobility Plan, 2018

***Washington State Plan for Electric Vehicle Infrastructure Deployment*, 2022**
What is the primary goal of the program, plan, or policy? "A blueprint for the planning, prioritization, and implementation of a statewide network of charging stations along state highways." Goals: • Continuity: Fill gaps in the EV infrastructure network • AFCs: Certify existing and identify future roadways • Equitable Charging Infrastructure: Prioritize economically disadvantaged and rural communities, and communities with poor air quality

- Equity and Innovation in Contracting: Ensure resources are expended equitably and to award innovative approaches to implementation
- Plan support: Prioritize and build in collaboration with public organizations, in support of local/regional plans
- Resiliency & Reliability: Where possible, provide multiple charging options, with capacity to meet future demand for EV infrastructure. Establish plans for operations, maintenance, and emergency response.
- Accessibility: Easy to locate and use EV infrastructure at any point along the corridor
- EV Adoption: Reach 500,000 electric vehicle registrations by 2027

What elements does the program, plan, or policy contain?

- Existing and future conditions analysis
- EV charging infrastructure deployment
- State, regional, and local policy
- Implementation
- Equity Considerations
- Labor and Workforce Considerations
- Program Evaluation

What is the timeline of the program/plan/policy?

- FY2023-FY2027

What key activities are involved? (High-level)

- "Washington State expects to invest about $71 million from this program over five years, along with a 20 percent non-federal match of $17.75 million."
- "The priority deployments will include completing the state's north/south and east/ west interstates, I-5 and I-90, respectively, to the federally defined built out standards. Secondary priorities for investments include completing the I-82/I-182 and US 395 AFCs followed by US 101 and US 195."

What key metrics are used to track progress?

- Increase in EV adoption – Washington State Department of Licensing data
- Improved access to charging stations – customer surveys and geospatial analysis
- Improved reliability of regularly-located infrastructure along corridors- Mapping & Forecasting Tool
- Improved Air Quality – Department of Health data
- Greenhouse gas emission reductions – Department of Health data

Did public involvement occur? Yes. **If so, what was the purpose?**

- Identify and engage FHWA-mandated stakeholder groups in the plan's development.
- Identify popular engagement methods.
- Collect feedback on preferred charging stations and other charging priorities.
- Engage stakeholders and the public to ensure that the Washington State Plan for Electric Vehicle Infrastructure Deployment will have equitable outcomes.
- Create opportunities for stakeholders and the public to provide feedback on the Plan.
- Ensure that the public is notified about public engagement activities in a timely manner.
- Ensure public participation opportunities are held in compliance with the Americans with Disabilities Act of 1990.
- Collect ongoing feedback on customer satisfaction after the Plan is finalized and approved.
- Establish strategies for seeking input from and considering the needs of those traditionally underrepresented by existing transportation systems as defined in Title VI of the Civil Rights Act of 1964 (Title VI), such as lo income, minority, and non-English

speaking households who may face challenges accessing employment and other services.
- Provide a contact to respond to public questions.

What planning considerations did this source list?
- **Where to place charging stations:** "The state received 1,698 individual submissions to the interactive map. There were 5,708 total votes. The most popular answers for "Why this location?" included: • **Near a highway for long distance travel • Near a tourist attraction • Near a grocery store**"

***Seattle Curbside Level 2 EV Charging: Minimum Requirements for Charging Stations*, 2022**

What is the primary goal of the program, plan, or policy?
- Install 30 Level 2 curbside charging stations to neighborhoods in Seattle in areas requested by residents.

What is the timeline of the program/plan/policy?
- 2022-2023

What key activities are involved? (High-level)
- Residents submit a request for a charging station if they own an EV or plan to buy one within 12 months. Seattle City Light will select locations based on criteria: near apartments/condos, near public amenities like a park or school, near shopping and restaurants, etc.
- The installation will be free and the charging fee will be .20 cents per kilowatt.
- The spaces will be restricted for EVs only.

What elements does the program, plan, or policy contain?
- N/A

What key metrics are used to track progress?
- Residents consider charging stations valuable.
- Financial viability of chargers.

What key accomplishments or progress has there been?
- N/A

Did public involvement occur? If so, what was the purpose?
- Members of the public submit requests for chargers.

What planning considerations did this source list?
- Meet eligibility requirements: CurbsideLevel2EVCharging_Requirements.pdf (seattle.gov)
- Aim to add chargers near apartments/condos, near public amenities like a park or school, near shopping and restaurants, etc.
- Focus on the most difficult and expensive places to install infrastructure because "if we're tackling those challenging areas, we're reducing barriers across the broader community,"
- Aim to have at least three EV chargers in each of Seattle's seven council districts to ensure a relatively even geographic distribution throughout the service area

Seattle City Light EV Public Charging – Site Selection Process, 2018

What is the primary goal of the program, plan, or policy?

- Deploy 20 DC fast charging stations throughout the SCL service territory.

What is the timeline of the program/plan/policy?

- 2018

What key activities are involved? (High-level)

Define and document the site selection process including

- How sites are added to "Potential Sites"
- How sites are assessed
- How sites are pursued

What elements does the program, plan, or policy contain?

It describes this process:
Screening → Potential Sites → Pre-feasibility → Feasibility → Sites to be pursued → Initial project development → Contract failures → Sites to be developed

What key metrics are used to track progress?

- Residents consider charging stations valuable.
- Financial viability of chargers.

What key accomplishments or progress has there been?

- Siting of chargers
- Development of draft contract for EV siting (although it was not used for this project; barriers were too high)

Did public involvement occur? If so, what was the purpose?

- Not at this step of the process.

What planning considerations did this source list?

- **High-Level Goals/Guidance**
  - Attempt to site two thirds of chargers in south and southwest Seattle
  - Site at least one station in a south franchise city and one in a north franchise city

- **Screening:** Where do we look for sites to initially consider (add to our "**Potential Sites**" list)?
  - City Light service territory (includes franchise cities)
  - Generally distributed throughout the service territory
  - Ensure some coverage in Greater Duwamish and Chinatown/ID areas
  - Focus on areas with low EV ownership
  - Focus on areas with low concentration of existing public EV chargers
  - Focus on urban villages and centers
  - Avoid areas with bus layovers, school walking routes and festival streets
  - Avoid "protected bike lanes" or bike lanes that are planned to be upgraded to "protected bike lanes"

City of Bellevue Smart Mobility Plan, ***2018***

What is the primary goal of the program, plan, or policy?

- "Bellevue's Smart Mobility Plan aspires to manage this growth through the use of technology to enhance and optimize the transportation system throughout the city."

What is the timeline of the program/plan/policy?

- 2018-2023

What key activities are involved? (High-level)

- Expand EV charging infrastructure
- Advocate for an all-electric King County Metro bus fleet in Bellevue
- Transition to an all-electric city fleet

What key metrics are used to track progress?

- N/A

What key accomplishments or progress has there been?

- Deployment of over 20 public charging stations, which the city also operates

Did public involvement occur? If so, what was the purpose?

- N/A

What planning considerations did this source list?

- **City fleet: "**Initial migration would include EV passenger vehicles that are readily available, with an eventual migration that would also include light-, medium-, and heavy-duty trucks."
- **EV infrastructure:**
  - Partner with Puget Sound Energy (PSE) and charging companies to expand EV charging options, including fast charging options for rideshare services, Metro electric buses, and electric delivery services.
  - Explore partnerships with private-sector on-street charging.
  - Work with Sound Transit, Metro, and the Washington State Department of Transportation (WSDOT) to expand Level 1 and 2 EV charging capabilities in park-and-ride facilities
  - Investigate and provide for direct current fast charging infrastructure where it is cost effective.
  - Design infrastructure for future charging stations into current roadway projects.

Puget Sound Energy Transportation Electrification Plan, 2021

What is the primary goal of the program, plan, or policy?

- Support and enable market transformation
- Address charging infrastructure gaps
- Plan and manage electric loads
- Further equity and inclusion

What is the timeline of the program/plan/policy?

- It is intended to be updated every five years.

What key activities are involved? (High-level)

PSE views its role in addressing public charging infrastructure as:

- Increasing customer access to reliable charging, identifying and filling existing gaps
- Developing local best practices and playbooks for installing charging infrastructure and coordinating its deployment
- Coordinating infrastructure deployment and planning for larger charging requirements and system upgrades
- Exploring multi-modal charging options and charging "hubs" for different usage like ride-share, shuttles, etc.
- Understanding charging patterns by location type and how they impact PSE system load

What key metrics are used to track progress in installing EV chargers?

• Metrics vary by program implemented; none are listed in the plan.
What key accomplishments or progress has there been? • Several pilot projects implemented • Community engagement across the state
Did public involvement occur? If so, what was the purpose? • Understand experiences and barriers associated with electrification.
What planning considerations did this source list? • Support charging at workplaces, at single-family residences, at multifamily residences, in low-income and disadvantaged communities, innovative technology demonstrations.

Peer Cities Code Review

Full results of a review of codes of the Washington cities of Bellevue, Bainbridge, Seattle, Edmonds, and Olympia are below, highlighting key differences between these codes and those of Renton/King County.

<table>
<tr><th>City</th><th>Regulation</th><th>Regulation Contents</th><th>Key Differences from Renton and King County Codes</th></tr>
<tr><td>Bellevue[1]</td><td>Land Use Code, Chapter 20.25, section 20.25.D.020</td><td>Provides various definitions for EV/ EV infrastructure regarding land use in BelRed area.</td><td>• Code provides a definition for Battery Exchange Station.
• Does not have specific infrastructure requirements; instead says: “Electric Vehicle Infrastructure, excluding Battery Exchange Stations, is ancillary to motor vehicle parking and highways and rights-of-way, and is permitted through the applicable review process as a component of that use.”</td></tr>
<tr><td>Bainbridge[2]</td><td>Title 18. Chapter 18.15: Development Standards and Guidelines</td><td>Requirements for EV charging infrastructure to be provided for new or expanded buildings and parking lots.

Tables 18.15.020-3 and 18.15.020-4 provide specific EV infrastructure requirements.</td><td>• In addition to “EVSE Parking Spaces” and “EV-Ready Parking Spaces,” there is a definition and requirements for “EV-Capable Parking Spaces” for new and expanded buildings and parking lots.

Table 18.15.020-3: Electric Vehicle (“EV”) Charging Infrastructure
<table><tr><th>Building Code Occupancy</th><th>Number of EVSE Parking Spaces</th><th>Number of EV-Ready Parking Spaces</th><th>Number of EV-Capable Parking Spaces</th></tr><tr><td colspan="4">Group A, B, E, F, H, I, M, and S occupancies (nonresidential buildings)</td></tr><tr><td>New buildings</td><td>10% of total parking spaces</td><td>30% of total parking spaces</td><td>20% of total parking spaces</td></tr><tr><td>Existing buildings proposed for expansion</td><td>5% of total parking spaces</td><td>10% of total parking spaces</td><td>20% of total parking spaces</td></tr><tr><td>New paved surface parking lots and parking garage uses</td><td>10% of total parking spaces</td><td>30% of total parking spaces</td><td>20% of total parking spaces</td></tr><tr><td colspan="4">Group R-2 buildings with 5 or more dwelling units</td></tr><tr><td>New buildings</td><td>10% of total parking spaces</td><td>25% of total parking spaces</td><td>10% of total parking spaces</td></tr><tr><td>Existing buildings proposed for expansion</td><td>5% of total parking spaces</td><td>10% of total parking spaces</td><td>20% of total parking spaces</td></tr></table></td></tr>
</table>

City	Regulation	Regulation Contents	Key Differences from Renton and King County Codes

			• "Expanded building" refers to when a development is expanded by more than five percent of its existing floor area, or by more than five percent of its overall size in cases where floor area is not applicable.
			• There are no EV infrastructure requirements for residential buildings with fewer than 5 units.
			• There are incentives for providing EV charging infrastructure beyond requirements:
			  ○ If DC fast charging stations (480 volts) are provided rather than Level 2 charging stations, the required number of vehicle parking spaces may be reduced by five percent.
			  ○ If one electric vehicle charging station is provided for every five required parking stalls, the required number of vehicle parking spaces may be reduced by five percent.
			• Contact information for the charging station operator shall be posted on the charging station equipment in order to report malfunctions or other issues.
			• There is specific guidance around the maximum number of EVSE per circuit breaker rating (Table 18.15.020-4).

Seattle[3]	Title 23. Subtitle III, Chapter 23.54.030: parking space and access standards	"EV charging infrastructure: New parking spaces provided on a lot when a new building is constructed shall be EV-ready" Subsection 23.54.030.L.1 covers residential parking and subsection 23.54.030.L.2 covers all other parking.	• The code contains requirements for EV-ready parking, but not EVSE parking. • Applies only to newly constructed buildings. • Contains additional guidance for EV requirement reductions based on impacts to electrical load.

City	Regulation	Regulation Contents	Key Differences from Renton and King County Codes
	Title 23. Subtitle IV, Chapter 23.84A.010- "E"	Provides definition for "EV ready"	• No significant difference.
	Title 22. Subtitle IX, Chapter 22.900D.150	Provides "Size overcurrent protection for EV charging stations"	• Renton and King County codes do not contain overcurrent protection guidance.
Edmonds[5]	Title 17. Chapter 17.115 Electric Vehicle Charging infrastructure	"Purpose of chapter is to ensure effective installation of EV charging stations"	• Language not included in Renton or King County code.
	Title 17. Chapter 17.115 Electric Vehicle Charging infrastructure, section 17.115.020	Provides relevant definitions for EV infrastructure	• Defines charging level; Level 1, Level 2, and Level 3 charging; battery exchange stations; EV capable parking spaces. • "EVSE" and "Electric vehicle charging station" are both defined as: "a public or private parking space that is served by EV ready or EV installed forms of electric vehicle charging infrastructure that has as its primary purpose the transfer of electric energy (by conductive or inductive means) to a battery or other energy storage device in an electric vehicle." • Additional definition: ""Electric vehicle installed" or "EV installed" means a fully installed electric vehicle charging station for Level II or Level III charging levels."
	Title 17. Chapter 17.115 Electric Vehicle Charging infrastructure, section 17.115.040	Details the minimum number or percentage of EV charging infrastructure required by type of use Outlines electrical load management	• Applies for significant building alterations or parking increases of 50+%. • Infrastructure requirements differ: there are requirements for EV capable spaces and requirements for EV ready spaces are higher than Renton/King County (Table 17.115.040), and consider broader building categories:

<table>
<tr><th>City</th><th>Regulation</th><th>Regulation Contents</th><th>Key Differences from Renton and King County Codes</th></tr>
<tr><td></td><td></td><td></td><td>
<table>
<tr><th>Type of Use</th><th>Number of EV Capable Parking Spaces</th><th>Number of EV Ready Parking Spaces</th><th>Number of EV Installed Parking Spaces</th></tr>
<tr><td>Single-family dwelling units[1]</td><td>N/A</td><td>1 per dwelling unit</td><td>N/A</td></tr>
<tr><td>Multiple dwelling units[1]</td><td>40% of parking spaces</td><td>40% of parking spaces</td><td>10% of parking spaces</td></tr>
<tr><td>Nonresidential uses</td><td>40% of parking spaces</td><td>0% of parking spaces</td><td>10% of parking spaces</td></tr>
</table>
</td></tr>
<tr><td></td><td>Title 17. Chapter 17.115 Electric Vehicle Charging infrastructure, section 17.115.05</td><td>General station requirements, including clearance, equipment, equipment protection, and maintenance</td><td>• Renton and King County codes do not contain requirements for size, installation, location, equipment protection, or maintenance.</td></tr>
<tr><td></td><td>Title 17. Chapter 17.115 Electric Vehicle Charging infrastructure, section 17.115.060</td><td>Signage requirements</td><td>• No significant difference.</td></tr>
<tr><td>Proposed Olympia code Nov 2022[6]</td><td>Title 16. Buildings and Construction Chapter 16.90 Electric Vehicle Parking, section</td><td>Provides relevant definitions for EV infrastructure

Electrical service must have capacity to simultaneously charge all</td><td>• Defines EV-capable parking space.
• Contains separate definitions for “EVSE” and “EVSE Parking Space.”
• Applies for new developments and when buildings or parking lots “are improved by an amount equal to or greater than fifty (50) percent of the assessed value of the building or structure.”</td></tr>
</table>

<table>
<tr><th>City</th><th>Regulation</th><th>Regulation Contents</th><th>Key Differences from Renton and King County Codes</th></tr>
<tr><td></td><td>16.90.010 Definitions

Title 16. Buildings and Construction Chapter 16.90 Electric Vehicle Parking, section 16.90.020 Electric Vehicle parking Standards</td><td>EVs in lot at a minimum of 40-amperes each.

Signage requirements.</td><td>• Requirements for amount of EV infrastructure by building type differ from King County code (Table 16.90.A):

<table>
<tr><th colspan="4">Table 16.90A Electric vehicle (“EV”) charging infrastructure</th></tr>
<tr><th>Building Code Occupancy</th><th>Number of EVSE Parking Spaces</th><th>Number of EV-Ready Parking Spaces</th><th>Number of EV-Capable Parking Spaces</th></tr>
<tr><td colspan="4">Group A, B, E, F, H, I, M, and S occupancies (nonresidential buildings)</td></tr>
<tr><td></td><td>10% of total parking spaces</td><td>10% of total parking spaces</td><td>10% of total parking spaces</td></tr>
<tr><td colspan="4">Group R occupancies</td></tr>
<tr><td>Buildings that do not contain more than two dwelling units</td><td>Not required</td><td>One for each dwelling[1]</td><td>Not required</td></tr>
<tr><td>Dwelling units with private garages</td><td>Not required</td><td>One for each dwelling</td><td>Not required</td></tr>
<tr><td>All other Group R occupancies</td><td>10% of total parking spaces</td><td>25% of total parking spaces</td><td>65% of total parking spaces</td></tr>
</table>

• Contains guidance around maximum number of EVSE per circuit breaker rating.

• Contains detailed guidance around reductions.</td></tr>
</table>

1: https://bellevue.municipal.codes/LUC/20.25
2: https://www.codepublishing.com/WA/BainbridgeIsland/#!/BainbridgeIsland01/BainbridgeIsland01.html
3: https://library.municode.com/wa/seattle/codes/municipal_code?nodeId=PR
4: https://kingcounty.gov/council/legislation/kc_code/21_Title_18.aspx
5: https://www.codepublishing.com/WA/Edmonds/#!/html/Edmonds17/Edmonds17115.html
6: Referenced document sent by Seattle City Light in May 2023.

Appendix B: Social Pinpoint Summary

Summary Overview

This document summarizes feedback from the City of Renton's Social Pinpoint survey and interactive mapping tool, administered to the public from March 6th to March 31st, 2023. The input gathered will be used to inform the Renton Electric Vehicle (REV) Charging Plan. Through general promotion via City social media platforms and listservs and targeted emails to key stakeholders, Social Pinpoint received the following:

- **381** total visits[1]
- **161** unique visitors[2]
- **111** map comments
- **116** survey responses

Social Pinpoint Objectives

The Social Pinpoint landing page provided community members an opportunity to learn about the REV Charging Plan. The survey aimed to understand priorities and concerns as they relate to electric vehicle (EV) charging, and the interactive mapping tool aimed to understand where there is a need for EV charging stations within the city and/or where there may be barriers or broken chargers within the city.

We will use these findings to:

- Confirm locations of EV chargers in Renton, including noting broken chargers.
- Recommend locations and considerations for new EV charging sites in Renton.
- Note considerations for future community engagement around EV charging.

Key Survey Findings

This section summarized key findings from both survey and mapping responses. To see more detailed summaries, visit the *Survey Responses* and *Mapping Responses* chapters.

EV ownership

- Most respondents (63.8%) currently own/lease a vehicle. Of those, 39.7% own/lease a plug-in EV and 24.1% own a different type of vehicle.
- Respondents who report currently owning/leasing a plug-in EV most commonly need **Level 3 charging** (65.2%).

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[1] *The number of times this project was loaded (or reloaded) in a browser.*
[2] *Total number of uniquely identified visitors.*

- **Respondents who don't already own/lease an EV are interested in buying them.** Nearly four out of five (78.3%) have at least some interest in purchasing an EV in the future. Almost half are thinking about buying an EV as their next vehicle: 24.6% would consider getting an EV as their next vehicle, and 20.3% "definitely plan" on getting an EV for their next vehicle.
- Most (82.6%) respondents who currently own/lease a plug-in EV have an at-home charger.

The role of community charging stations

- The most common barrier to EV charging in Renton that respondents reported is the lack of chargers (45.1%).
- **For those who do not own an EV, charging logistics and vehicle range are key obstacles to buying one.** The factors preventing most from buying or leasing an EV are: the number of miles the vehicle can go before it needs to be charged (59.4%); costs involved with buying, owning and maintaining an EV (56.5%); and charging logistics, "such as where and when I'd be able to charge it" (50.7%).
- **Easily accessible fast chargers would encourage respondents to buy EVs.** Of those who do not already own an EV, factors that would most encourage respondents to buy or lease an EV include the ability to charge an EV where they live (52.9%) followed by easy access to fast-charging public stations where they can fully recharge in 30 minutes or less in Renton (41.4%).

Locations for new charging stations

- **Respondents would most like to see more EV charging stations at shopping centers/malls** (59.6%), followed by in their personal garage/driveway, at parks/trailheads, and at supermarkets/grocery stores (each with 44.2%).

Respondent demographics

Overall, a few demographics were overrepresented among respondents, including homeowners, residents of single-family homes, people who speak English at home, people who identify as white, people 45-64 years old, people with college and graduate degrees, and people who make over $150,000 per year.

- Most respondents **own their home** (91.4%), **live in Renton** (85.2%), and live in a **single-family house** (90.4%). Homeowners and residents of single-family homes are overrepresented; in Renton overall, 55% of homes were owner-occupied in 2021 and 53% of the housing stock was single-family in 2019.[3,4]
- The **Highlands** was the most-represented area where respondents live (25.9%).
- Most respondents speak **English at home (91.3%),** identify as **white (66.1%),** and identify as **male** (54.3%). In Renton overall, 41% of residents speak a language other than English at home, [5] and only 39% identify as "White alone." [6]

[3] *U.S. Census. 2019 American Community Survey 5-Year Estimates.*
[4] *City of Renton Housing Action Plan, 2020.*
[5] *U.S. Census. 2019 American Community Survey 5-Year Estimates; BERK 2021.*
[6] *U.S. Census. 2020 Decennial Census. "Race: Total Population." Accessed December 16, 2021.*

- **45-64 years old was the most-represented age group (46%)**. In Renton overall, only 25% of people are 45-64 years old. [7]
- Most respondents are highly educated, with 39.5% having earned **a graduate or professional degree** and 35.1% having earned a Bachelor's degree. In Renton overall, 22% of people over age 25 have a Bachelor's degree and 14% have a graduate degree.[8]
- The most commonly earned annual household salary among respondents is **over $150,000** (40.4%).In Renton overall, only 22% of people have an annual salary of over $150,000. [9]

Key Interactive Map Findings

- Respondents were most interested in more chargers near:
    - **Parks and trailheads** (i.e., Gene Coulon Memorial Beach Park),
    - **Shopping centers/malls/restaurants** (i.e., the Landing, Hop in Grocery),
    - **Sport complexes** (i.e., Renton Memorial Stadium),
    - **Schools** (i.e., Renton Technical College, Renton High School) and
    - **Public buildings** (i.e., Renton Libraries).
- To a lesser extent, there was interest in placing EV charging in various **parking lots, commercial buildings** (i.e., Boeing Renton Factory), **apartment complexes** (i.e., Brighton Ridge Apartments), **Park & Rides**, and **gas stations**.
- Respondents identified the following broken chargers/areas where there are barriers to charging within Renton:
    - Level 2 chargers located in the **Landing Parking Garage 2** are often not working and the charger(s) at **Renton City Hall** are not publicly available.
    - Level 3 chargers at **Walgreens** on 3011 Sunset Blvd NE and **Target** in the Landing Shopping Center are rarely used.
    - Level 2 charger(s) at **Walgreens** on 4105 4th Street NE are slow or not working.

Survey Responses

This section summarizes Social Pinpoint survey responses. A note that "other" responses are left verbatim, thus some of the language may be informal. Comments that were inappropriate or harmful were not included in this summary.

Q1. The most common answer choice for respondents was "Yes – I own a own a plug-in EV" (39.7%) . One third (36%) of respondents currently do not own or lease a vehicle, and one quarter (24%) own/lease a vehicle but not a plug-in EV.

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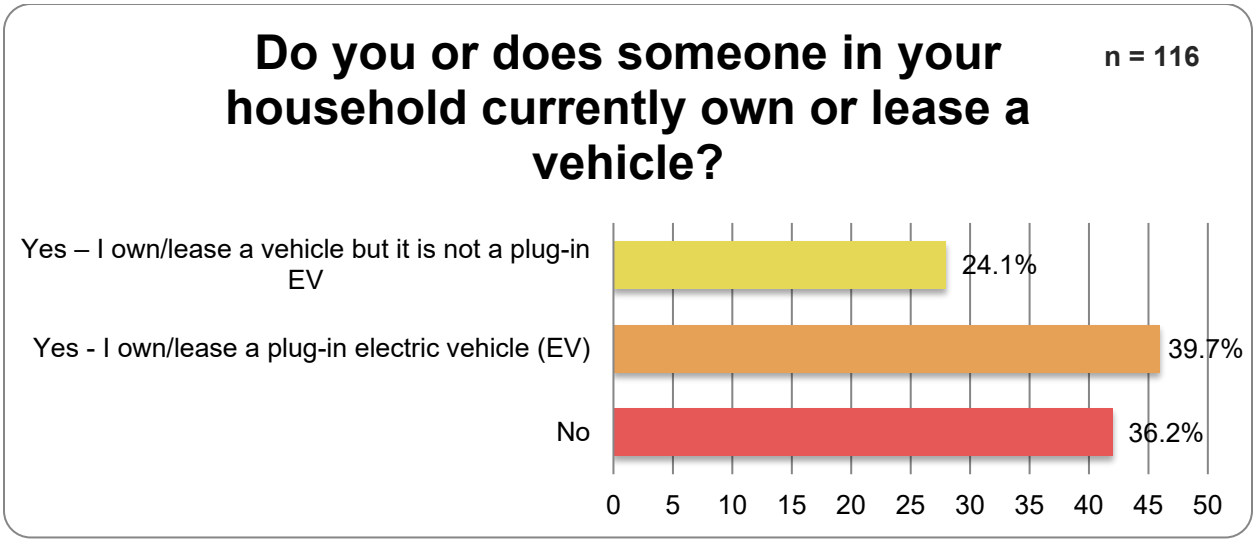
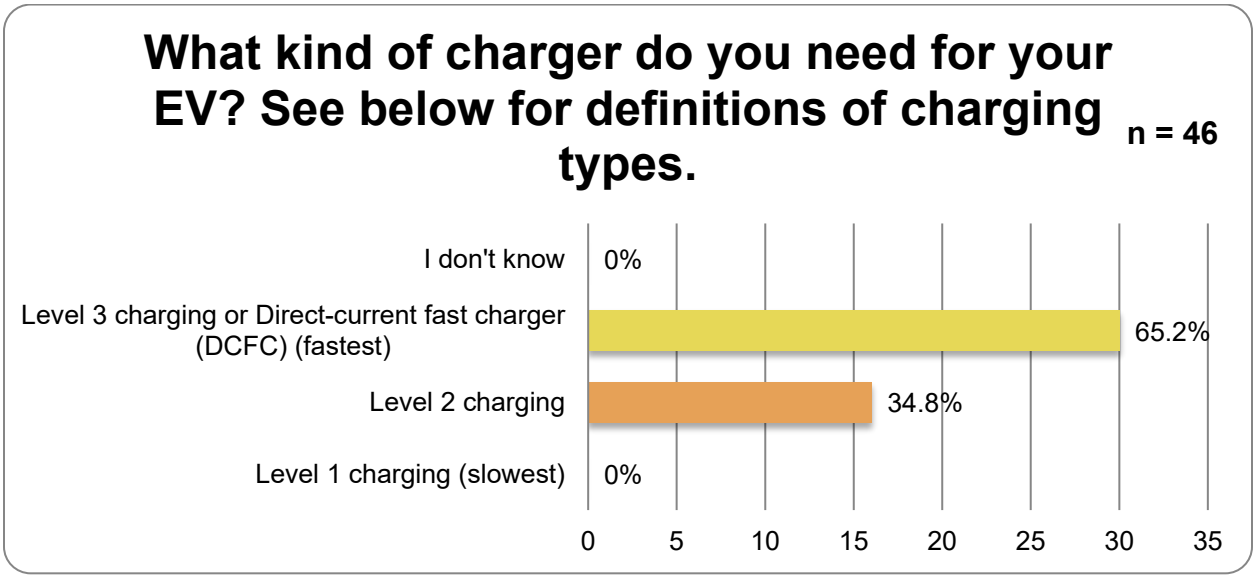
[7] *U.S. Census. 2019 American Community Survey 5-Year Estimates. https://data.census.gov/cedsci/profile?g=1600000US5335170*
[8] *U.S. Census. 2019 American Community Survey 5-Year Estimates.*
[9] *U.S. Census. 2019 American Community Survey 5-Year Estimates.*



Q2. The majority of respondents who currently own a plug-in EV **need Level 3 charging** for their EV (65.2%), followed by 34.8% who need Level 2 charging. No respondents need Level 1 charging.

Only respondents who answered "Yes – I own/lease a plug-in electric vehicle (EV)" to the first survey question were prompted to answer this question.

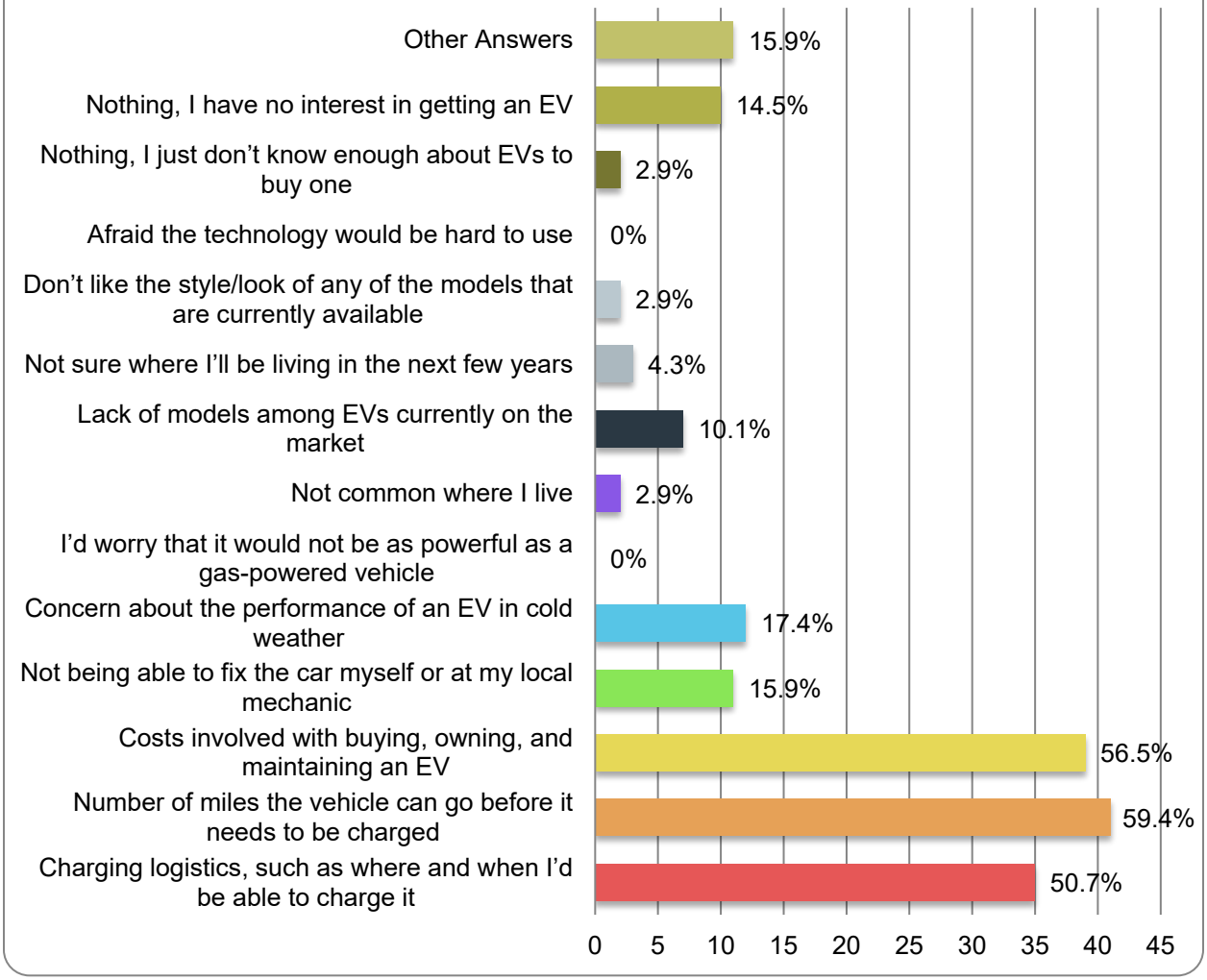


Q3. More than half of the respondents who don't currently own/lease a plug-in EV indicate that **the number of miles the vehicle can go before it needs to be charged** (59.4%), **costs involved with buying, owning and maintaining an EV** (56.5%), and **charging logistics,** such as where and when I'd be able to charge it (50.7%) are the main reasons **preventing** them from buying or leasing an EV.

Only respondents who answered "No" or "Yes - I own/lease a vehicle but it is not a plug-in EV" to the first survey question were prompted to answer this question.

Of the following attributes, which, if any, would prevent you from buying or leasing an electric vehicle if you were to buy or lease a vehicle today? Select up to three.

n = 69



Those who selected "Other" answered the following verbatim responses (n = 13). Some mentioned a lack of choices, while others noted potential environmental impacts from EVs, said they just don't need a car right now, listed use cases for which EVs aren't available yet, and gave a variety of other reasons:

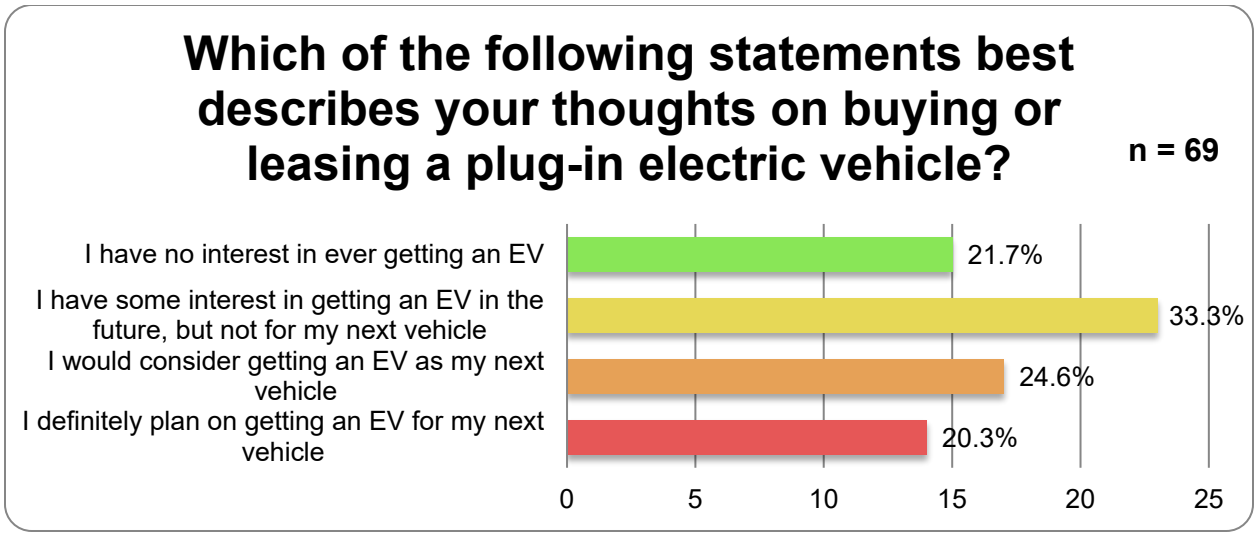
- choices. waiting for more alternatives to the current selection. wont own a tesla
- I use a gasoline powered truck 24mywork.. Unless you have a $100000 you can loan me to buy an electric one. I'll have to stick with the one I have..
- EVs are far more destructive to the environment than oil, or coal, as a matter of fact, they are compounding the emissions and the extraction of earths precious resources. They are yet another way to rape the planet while harming the health of those enslaved to mine the precious

materials. It is also another way for governments' to control a traveler's distance ensuring the success of those planned15-minute smart cities. You already allowed these monsters to install the meters on our homes, that will monitor all smart devices in the home, and I was forced, by police, to allow the thing on my PRIVATE PROPERTY. No thanks, I am an american and it is my unalienable right to travel unencumbered.

- I do appreciate that you think you are doing what is best for the city you are entrusted with, but you are not. You are following the agenda of WEF, who call us hackable animals and want a one-world government. You'd be wise to start listening to the voices being called out as ""domestic terrorists"" through propaganda, defined as anyone that opposes the agreed upon narrative and direction. Please help to stop this Orwellian dystopia."
- We don't have an electrical grid that will support all of these EVs, electric houses. Etc.
- I not convinced they are actually better for the environment. To make the batteries is not good for the environment.
- Need - both of my current cars are in good working condition and paid off
- Current lack of level 3 chargers as well as lack of unified charger landscape. Currently we need multiple apps with multiple accounts to be able to charge.
- Also waiting for the EV industry to catch up to higher voltage packs before purchasing to help reduce charge and power draw in the future"
- I use my vehicle to tow a trailer, that use reduces mileage substantially.
- EV are not the answer, we should focus on hydrogen cars.
- Would like to be able to select more than 3 options total as many of the selection options above are of concern at this point in time. I have a travel trailer and excessive cost, lack of range, lack of power, lack charge station availability were all cons when it came to purchasing a new vehicle. Ended up buying a used pickup which was several thousand 25k + less than a new electric pickup.
- Recycling of EV components at end-of-life. Fire hazard of EV batteries.

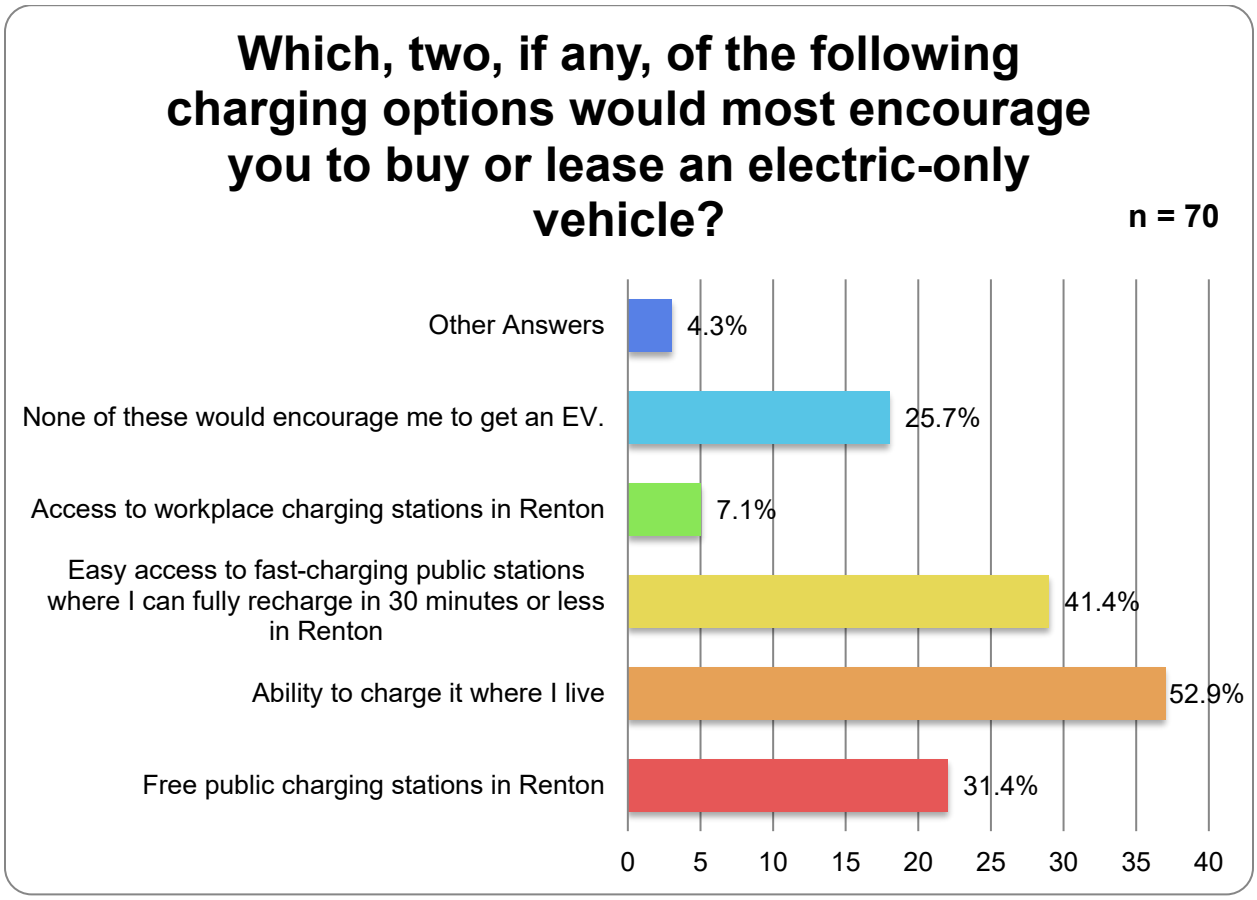
Q4. A third (33.3%) of respondents who currently don't own/lease a vehicle or own a car but not an EV have some interest in getting an EV in the future, but not for as their next vehicle. 21.7% have no interest in ever getting an EV, however 24.6% would consider getting an EV as their next vehicle.

Only respondents who answered "No" or "Yes - I own/lease a vehicle but it is not a plug-in EV" to the first survey question were prompted to answer this question.



Q5. Over half (52.9%) of respondents would be most encouraged to buy or lease an EV if they had the ability to charge it where they lived. Respondents are least encouraged by access to workplace charging stations in Renton (7.1%).

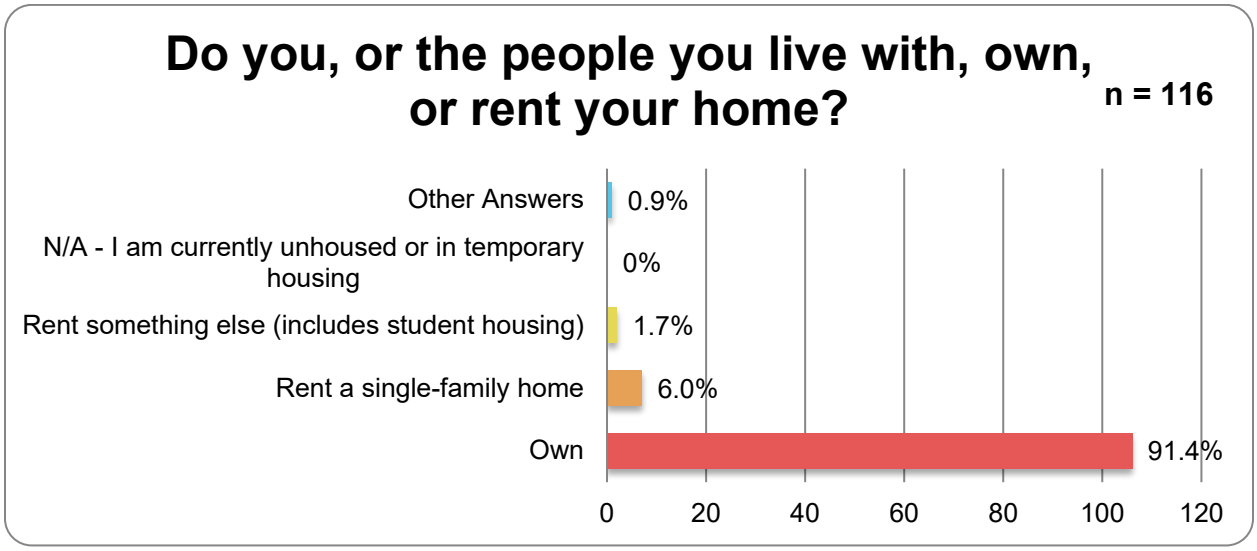
Only respondents who answered "No" or "Yes - I own/lease a vehicle but it is not a plug-in EV" to the first survey question were prompted to answer this question.



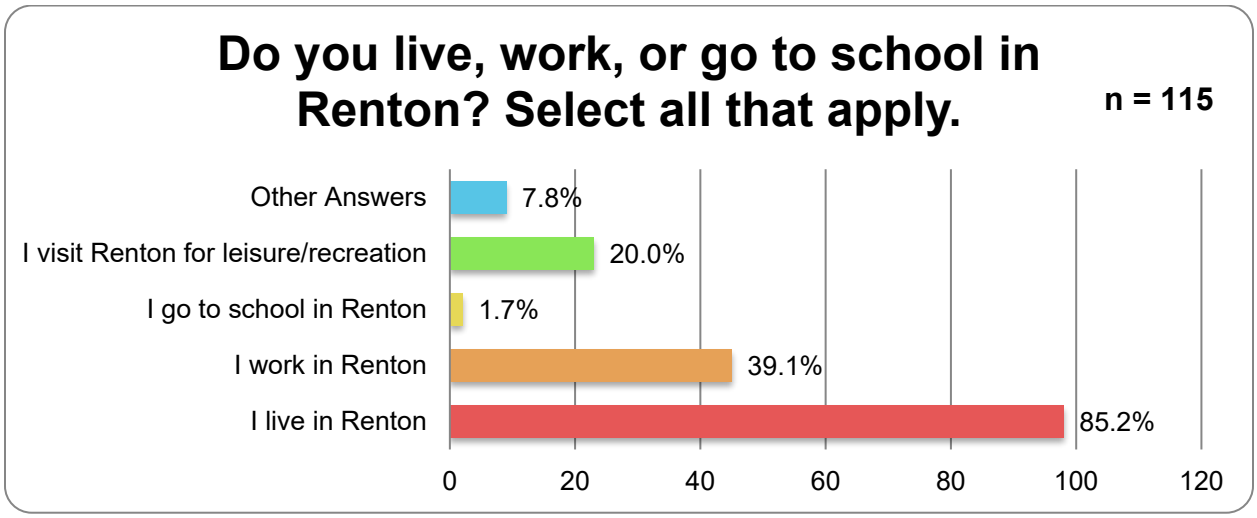
Those who selected “Other” answered the following (n = 3):

- Most chargers currently available are not compatible and the technology is out of date.
- I would prefer that NO public funds be made available to this effort. We have no ability to support this amount of electricity, That is the plan! These monsters want us to be left starving and stuck.
- Fast, public charging anywhere I need to go. Close and far. I don't think it should necessarily be free as I don't think we all need to foot the bill for vehicle ownership/maintenance costs.

Q6. The vast majority (91.4%) of respondents own their home.



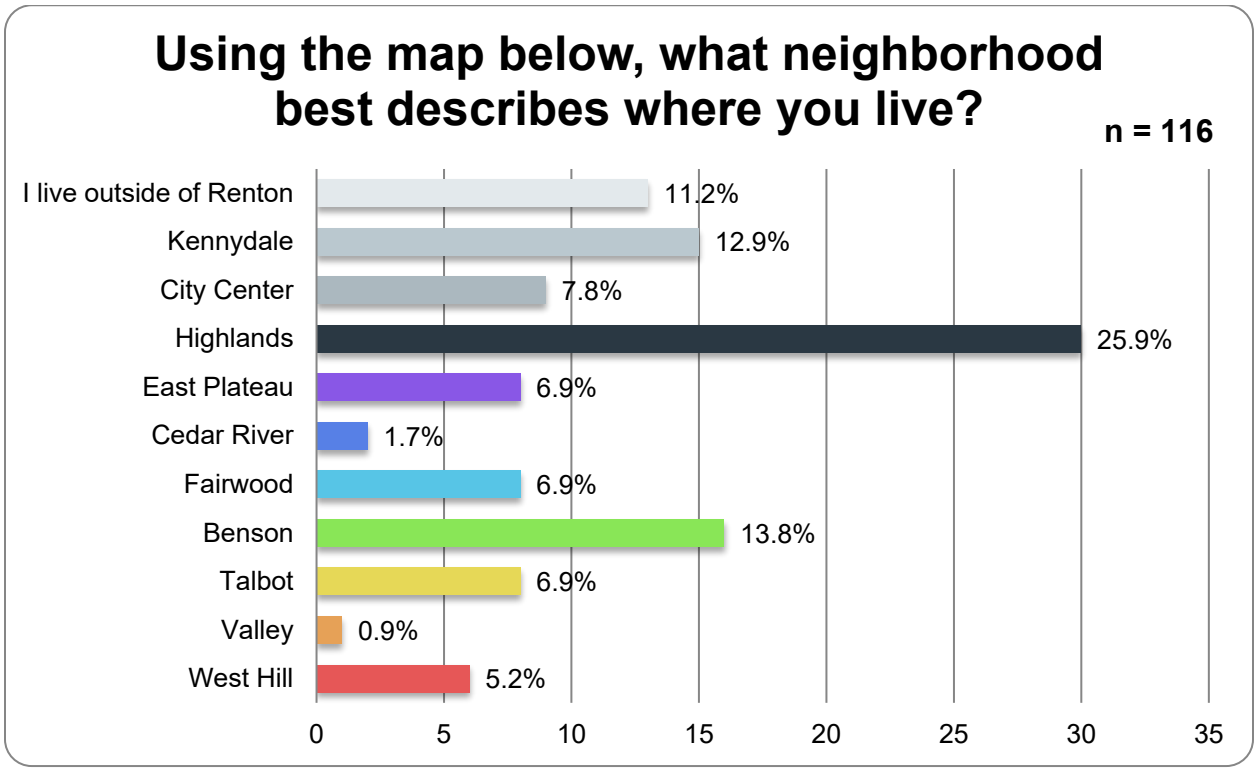
Q7. The majority of respondents live in Renton (85.2%), followed by 39.1% who work in Renton.



Those who selected “Other” answered the following (n = 9):

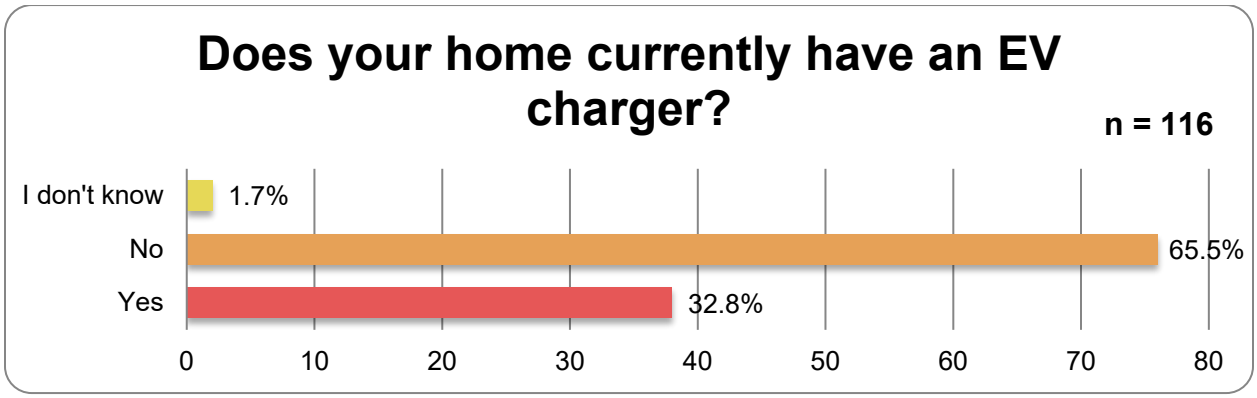
- I work and volunteer with several non-profits in Renton, serve on the Park Board and with the Environmental Science Center, and St. Anthony's Parish
- I umpire baseball games in Renton
- I shop in Renton!
- I have a homestead property on King County in the area of Renton. Renton believed they had authority to label and claim my property, but they don't.
- I volunteer in Renton
- I shop in Renton.
- commute through Renton to work in Seattle
- I run a small business in the city
- We shop in Renton

Q8[10]. Over a quarter (25.9%) of respondents live in the Highlands, followed by Benson (13.8%), and Kennydale (12.9%).

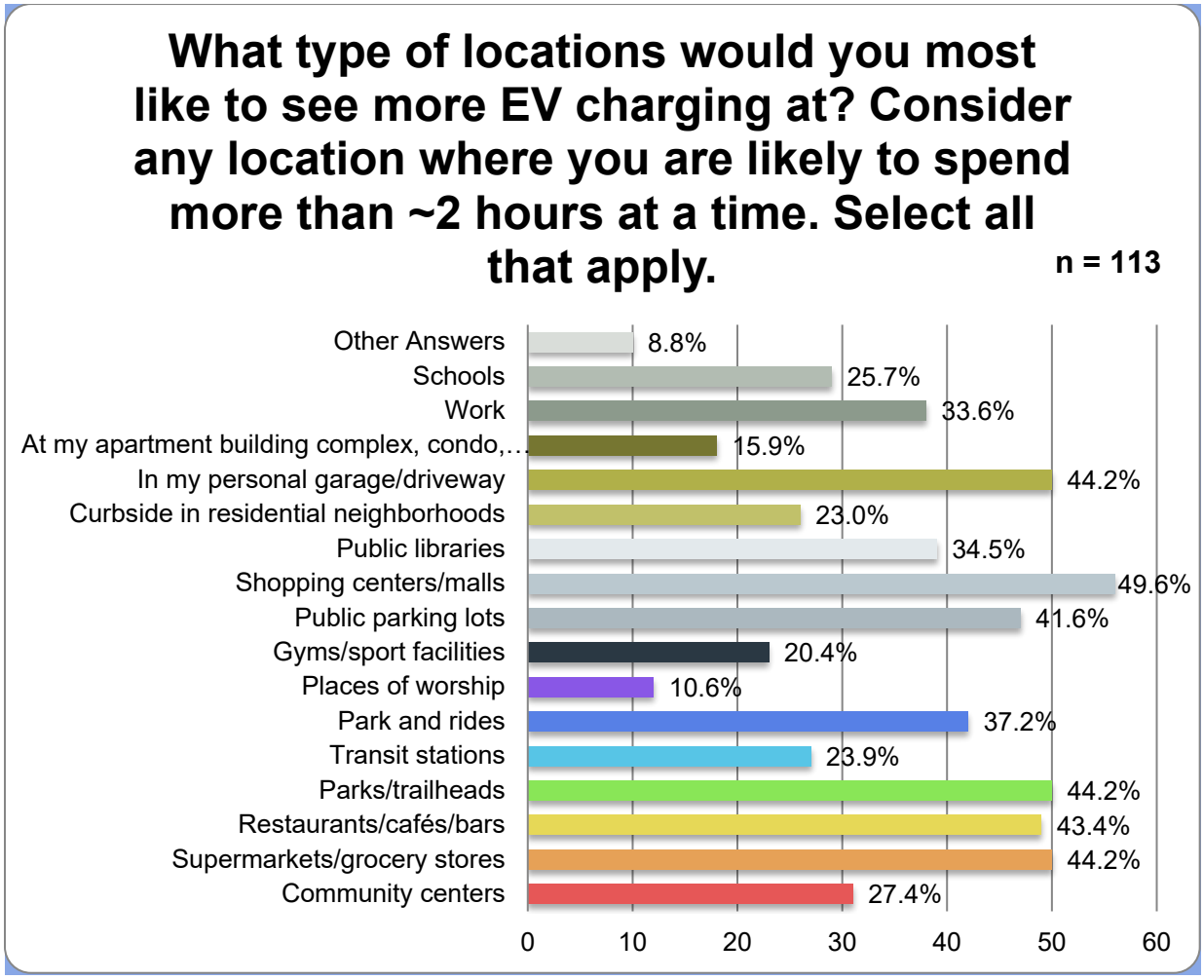


[10] *A map of the City of Renton's Community Planning Areas was shown below this survey question to serve as a visual reference.*

Q9. The majority of respondents (65.5%) do not currently have an EV charger at their home. However, about a third (32.8%) of respondents currently have an EV charger at their home.



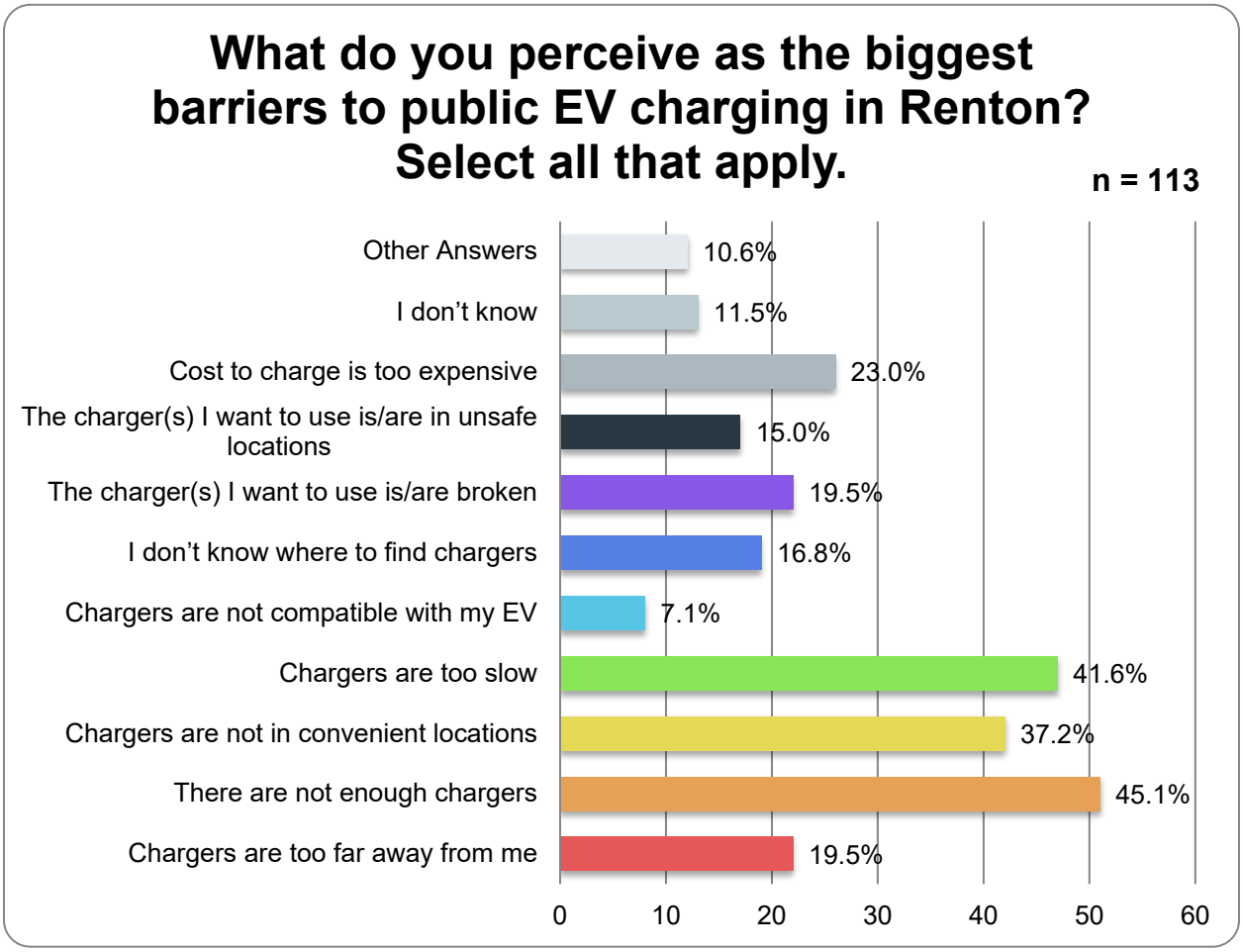
Q10. Almost half of respondents (59.6%) would most like to see more EV charging stations at shopping centers/malls. 44.2% of respondents would like to see more EV charging stations in their personal garage/driveway, at parks/trailheads, and at supermarkets/grocery stores. Respondents would least like to see EV charging stations at their places of worship.



Those who selected “Other” answered the following (n = 10):

- whoever owns 1 of these Should charge them at their own house.. waste of taxpayers money
- Boeing, airport
- I don't want EV chargers to exist outside of private purchases
- Historic DT renton
- current service stations, like the Cheveron station on N. 30th and I-405
- Existing gas stations and places of residence and work. Possibly schools. I don't believe that we need to spend public money on public charging stations to charge personal vehicles.
- None whatsoever. Complete waste of public resources
- I don't believe tax dollars should be spent on charging stations. Most people that have an EV can charge it at home and drive it the entire day without needing a charge. For those who do they should pay for it instead of having taxpayers subsidize them.
- I probably don't spend more than 2 hours at any location other than my home. So no real opinion.
- Government should not be installing. Government is not installing gas pumps.

Q11. The most commonly perceived barrier to EV charging in Renton is the lack of available chargers (45.1%). 41.6% perceive that the chargers are too slow, and 37.2% perceive that the chargers are in inconvenient locations. Charger compatibility was not perceived as a big barrier to charging in Renton (7.1%).



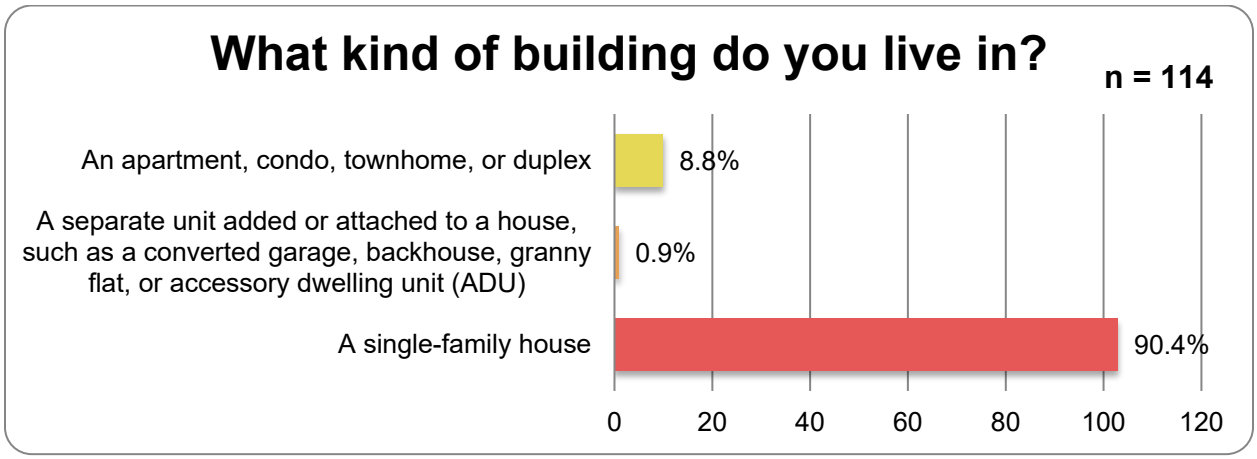
Those who selected "Other" answered the following (n = 12):

- Charging at your home is not an option because you rent.
- Don't want to give up my ICE
- Years ago when the Renton Community Center had 2 chargers they were monopolized, strangely enough, by people who were charging cars for other people, and they would be there all day. The other issue was that the chargers were not maintained and were eventually removed. No one seemed to take ownership of repairing them!
- You gaslight with your questions. They are written in a manner that would suggest that people want EV, and that people want their public monies to pay for EV equipment. That is not a truth though. Many of us know that this is a railroad to totalitarianism and a way to gain control over the herd of, as called by Yuval Noah Harari or WEF, HACKABLE ANIMALS!
- Why do taxpayers have to support a person's choice of vehicle. Why not let capitalism figure this out so there is not a government footprint. Does the state or city add fuel pumps at gas stations.

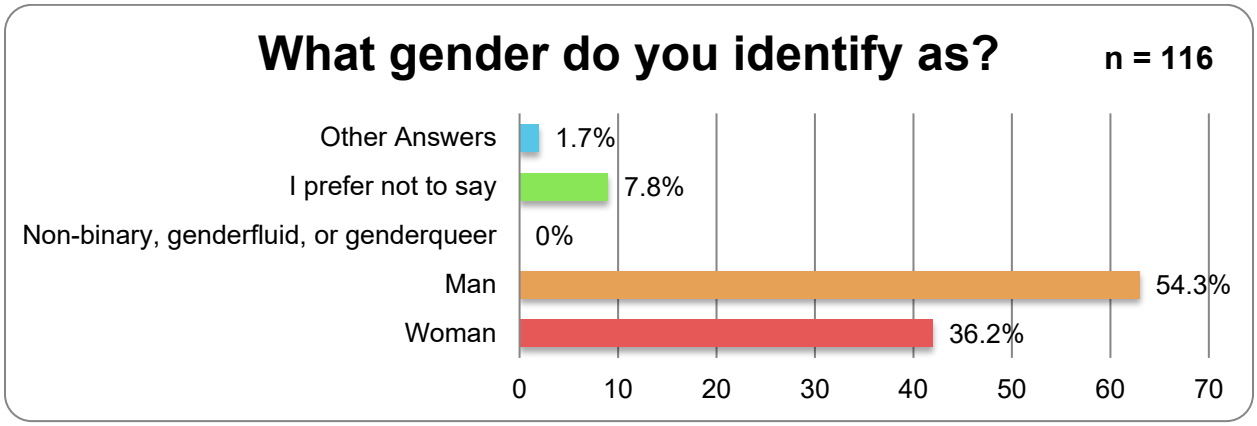
No, they only collect tax revenue. So let the ev companies figure this out and the city can figure out a way to tax it. You are good at that especially in WA.

- Ev technology is years away from matching the convenience of ICE
- Are there any barrier in Renton? I rarely see cars being charged at existing charging stations. The only place I've ever really seen full stations is at the charging bank at the Home Depot in Issaquah, where apparently affluence allows a higher degree of EV ownership.
- Look, it's not hard but it's going to take investment. We need 1) periodic Level 3 chargers (commercial, paid) convenient to major roads; 2) free Level 2 chargers (paid for by EV taxes, which are substantial already) at every public park, library, rest stop, city building, municipal parking lot, school; and 3) incentives for employers to provide paid or free Level 2 charging at workplaces. No one want to fiddle with a level 2 station unless they'll be there for hours - like at work, so the Level 2s at, say, McLendon's or Walgreen's in Renton go largely unused and fall into disrepair, a self-reinforcing cycle. I have 2 EVs and a Level 2 at home so for me only Level 3s are useful - but for people who rent it needs to be a no-stress thing where they know it's easy and often free.
- I see most never being used. Typically at grocery stores and are not in use. I don't think very many people in Renton use public charging stations, but maybe I just don't see it.
- I have serious concerns about how the electrical grid will handle all these new charging stations and or any existing stations.
- I currently don't own an EV. So it is not affecting me now, but I feel there are not enough charging stations around at this time in Renton.
- Current infrastructure will NOT handle the anticipated load.

Q12. The vast majority of respondents (90.4%) live in a single-family house.



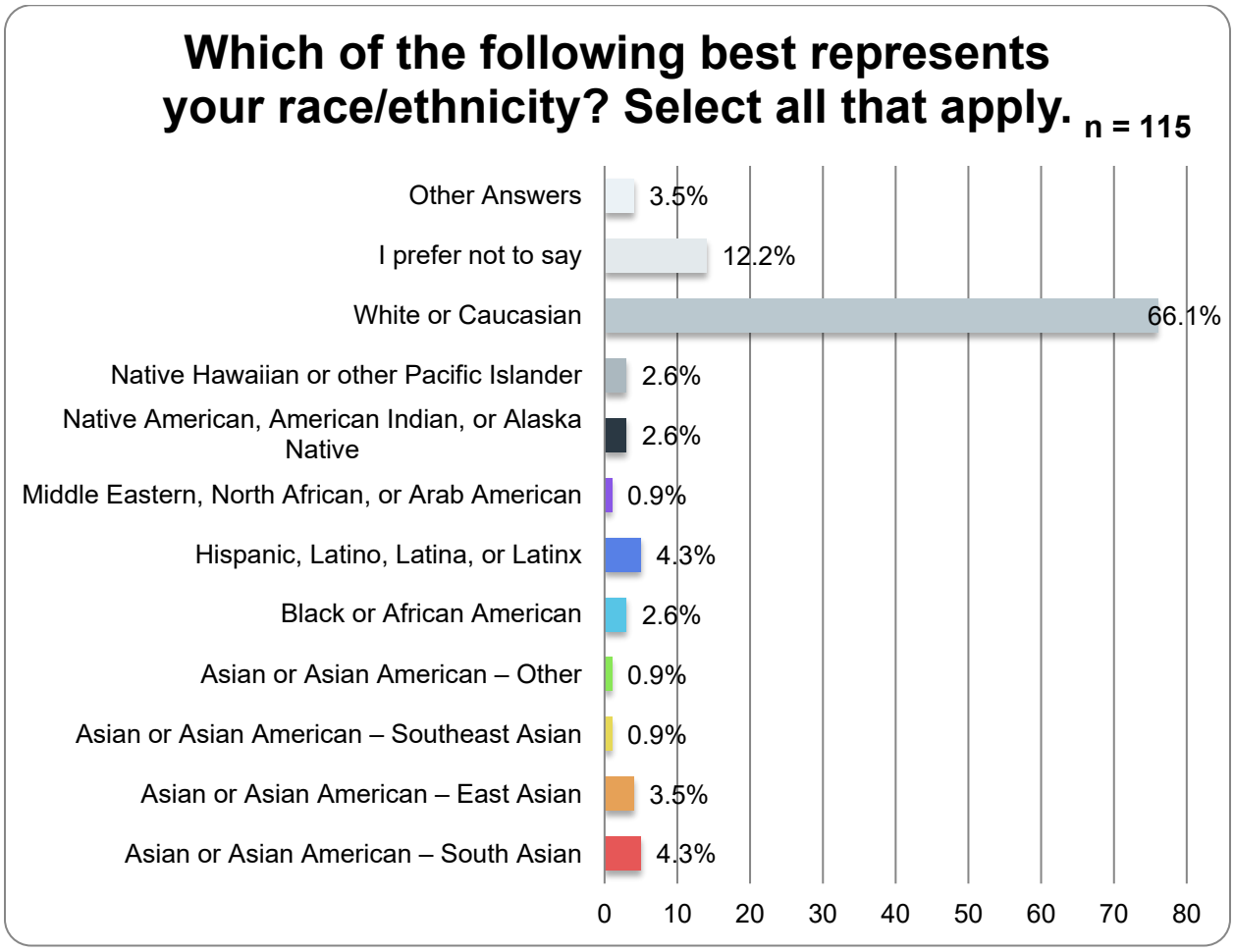
Q13. Over half of respondents identified as male (54.3%). 36.2% identified as female.



2 respondents selected "Other" (n = 2)[11].

[11] *Comments were omitted from this summary as they were inappropriate and/or harmful.*

Q14. About two thirds of respondents (66.1%) identified as White or Caucasian. 12.2% preferred not to answer, however 4.3% identified as South Asian and Hispanic, Latino, Latina, or Latinx, followed by East Asian (3.5%).

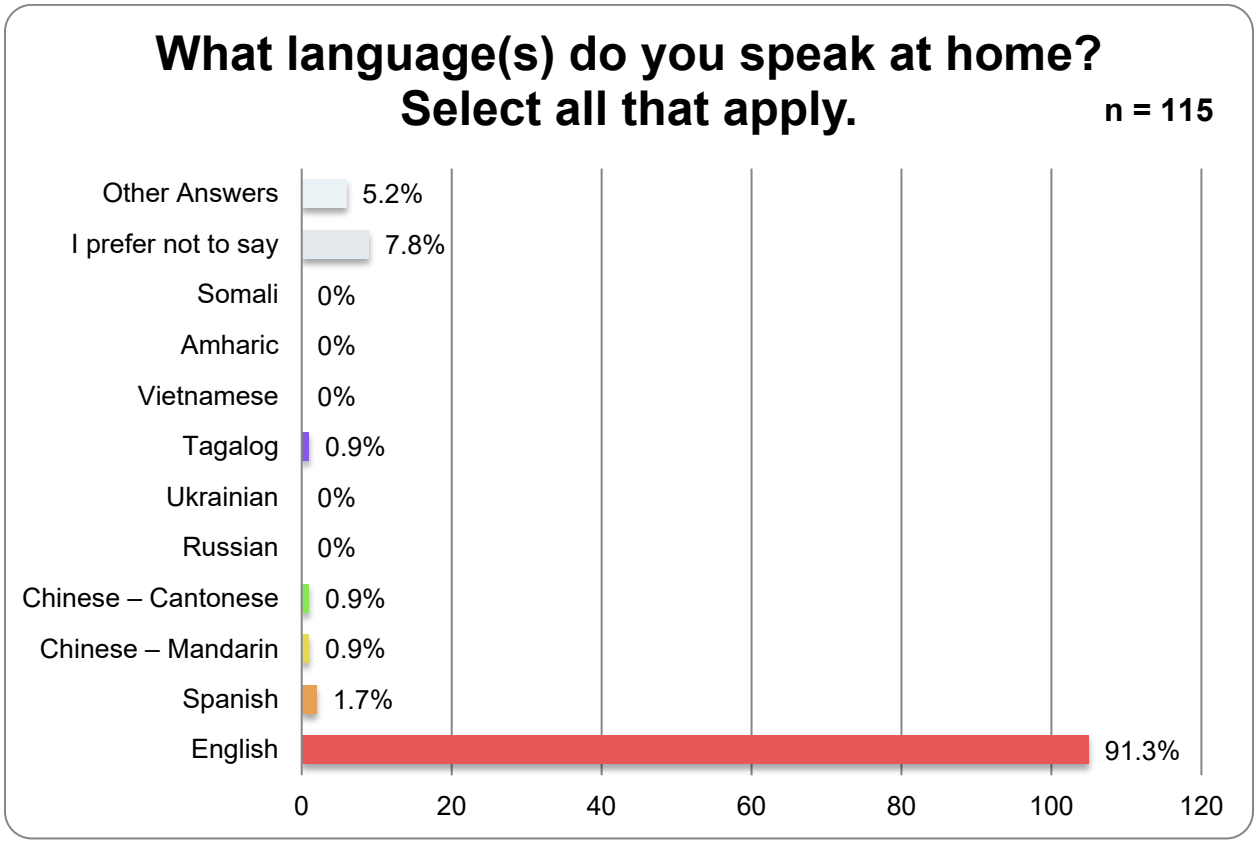


Those who selected "Other" answered the following (n = 4)[12]:

- Irish: non European
- wo/man
- European Swiss

[12] *Comments were omitted from this summary as they were inappropriate and/or harmful.*

Q15. The vast majority (91.3%) of respondents speak English at home.

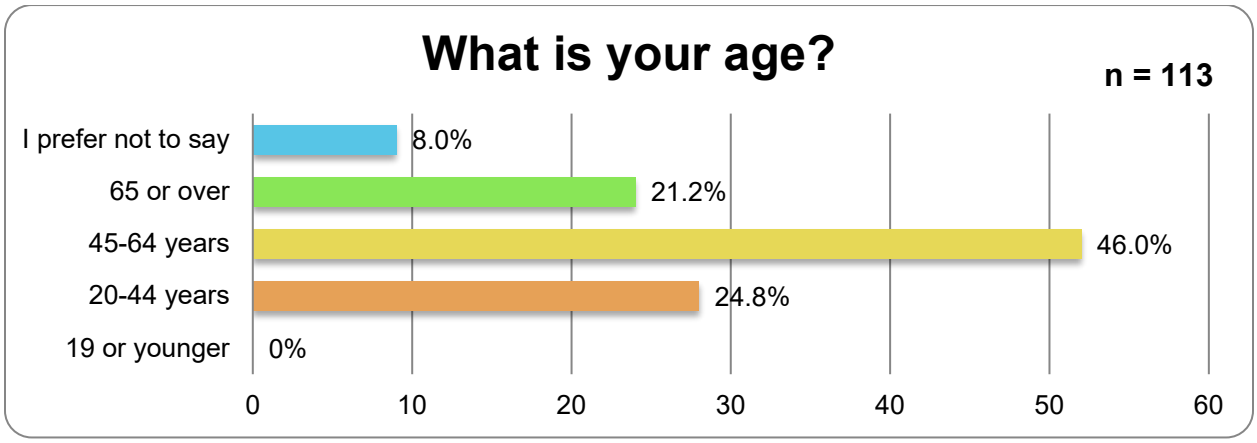


Those who selected "Other" answered the following (n = 6)[13]:

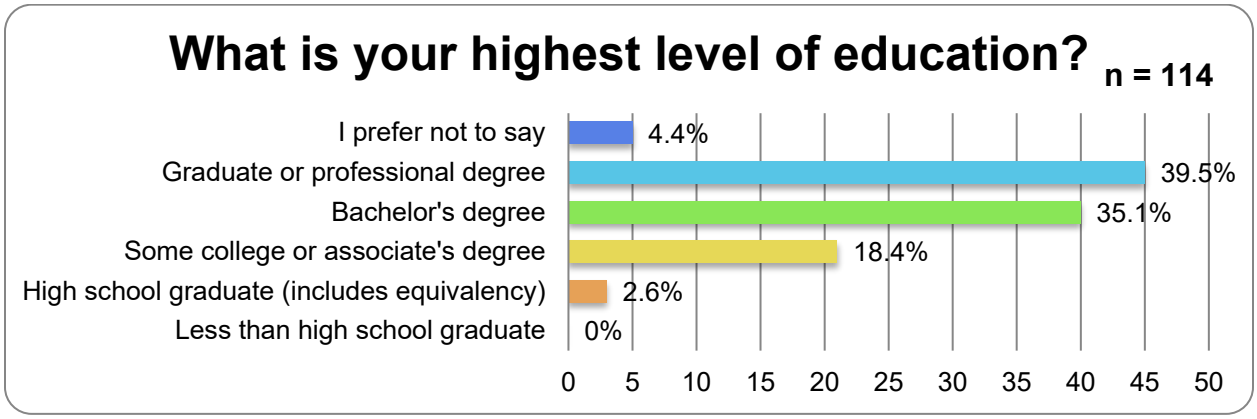
- Macedonian and Portuguese
- Punjabi
- French
- Hindi
- Urdu

[13] *Additional comments were omitted from this summary as they were inappropriate and/or harmful.*

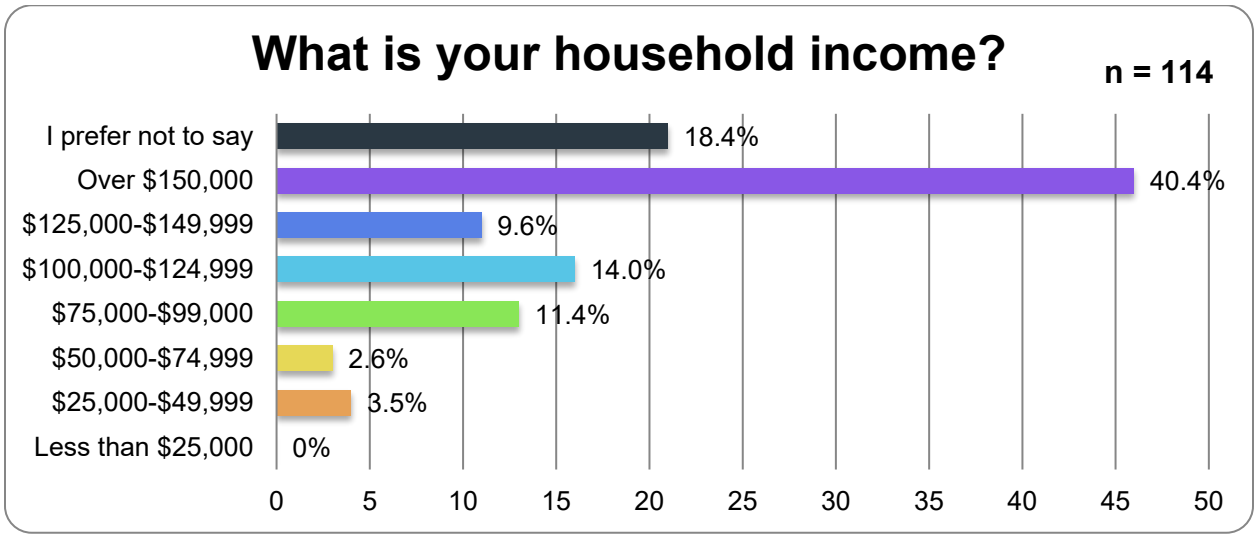
Q16. Approximately half of respondents (46%) were between the ages of 45 and 64 years old, followed by 24.8% of respondents who were between the ages of 20 and 44 years old.



Q17. Most respondents (74.6%) have either earned a graduate or professional degree (39.5%) or a bachelor's degree (35.1%).



Q18. The most common annual household salary among respondents is over $150,000 (40.4%).



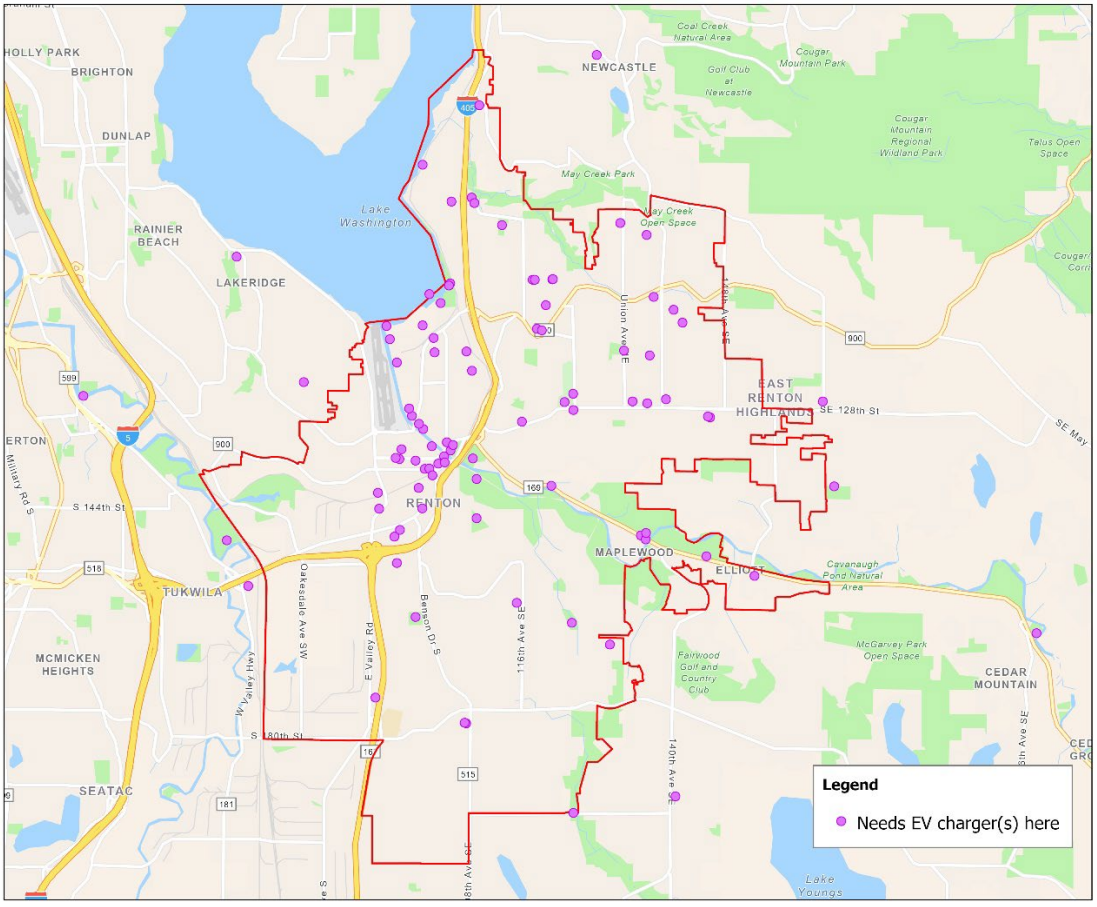
Mapping Responses

This section summarizes Social Pinpoint interactive mapping responses. Responses are shown first in the form of a heat map then in the form of a table showing where participants identified a need for chargers, bucketed by relevant land use categories. In these tables, language in the "relevant comments" column are left verbatim from mapping participants, thus some of the language may be informal. The "# of votes" column notes the number of comments in agreement with the identified location. To see the full list of mapping responses, which included mapping coordinates, please see Full Responses chapter.

Areas that need EV chargers

The map and table below shows where participants identified a **need for EV chargers in Renton.** To see the full list of mapping responses, which included mapping coordinates, please seeFull Responses, Areas that Need EV Chargers".

Figure 15. Map of needed charging sites



Parks and Trailheads (37)

Location	# of votes	Relevant comments
Gene Coulon Memorial Beach Park	7	
Liberty Park	4	To support users of the ball park, several level 2 chargers should be installed in the parking lot away from foul balls.
Philip Arnold Park	2	Install EV charger infrastructure at Park while it is under construction. Build out only a couple as demand grows.
Burnett Linear Park	2	
Sunset Neighborhood Park	2	All parks need L2 chargers
Cedar River Trail Park and along cedar River trail	2	
Ron Regis Park	2	great location where people park for sporting events or to use the cedar river trail.
Meadow Crest Playground	2	
Kennydale Beach Park	2	
Kennydale Lions Park	1	
Glencoe Park	1	L2 or L3 charging
May Creek Natural Area	1	
Kiwanis Park	1	By parking area for park when it opens
Community Garden (107 Williams Ave N, Renton, WA 98057)	1	
Riverview Park	1	
Cedar River Dog Park	1	Free Level 2 charging at all public locations. It's gotta be easy and reliable for people.
Jones Park	1	
Cascade Park	1	Level 2s at all parks
Thomas Teasdale Park	1	

Location	# of votes	Relevant comments
Soos Creek Trail	1	At the trailhead
Belmondo's Reach	1	

Shopping Centers/Malls/Restaurants (31)

Location	# of votes	Relevant comments
Bartells (4700 NE 4th St, Renton, WA 98059)	4	
Petco/Safeway (4110 NE 4th St #c, Renton, WA 98059)	3	
Hop in Grocery/Top of the Hill Produce Stand	3	
Renton Village (one location by Baci Jewelers and one near parking lot by Oasis Tea Zone)	3	Decent location for a paid Level 3 charger, near 167 and 405 and still close to downtown
North Benson Center	3	Could use a private charging station
Boona Boona Coffee	3	
Macadons	2	maybe not this exactly location, but this area of 3rd needs some.
Renton Shopping Center (by Queens Hair & Beauty Supply)	2	
Fairwood Shopping Center	2	Needs level 3 charging
The Landing	2	In parking garage (near Trenchers Kitchen & Tap) and parking lot (near Marshalls, Ross Dress for Less, and Sola Salon Studios)
McDonalds (1705 NE 44th St, Renton, WA 98056)	1	
Starbucks (641 Rainier Ave S, Renton, WA 98057)	1	
Fortune Poker	1	

Location	# of votes	Relevant comments
El Metropolitan Banquet Hall	1	Large shopping complex area with gym, sport area and restaurants where parking full mist of the time. Good place to add EV chargers

Sport Complexes (16)

Location	# of votes	Relevant comments
Renton Memorial Stadium	4	
Maplewood Golf Course	4	Paid charger opportunity. Multi-hour stays at this location.
Rolling Hills Pool/Sports complex	2	
Planet Fitness (Parking Lot - 4619 Sunset Blvd NE, Renton, WA 98059)	2	
Renton Rowing Center	1	Level 2 chargers in every public location. Free, paid for out of EV fees
Honey Dew Athletics Fields	1	Level 2s at parks and fields
Lakeridge Playfield	1	Level 2s at all parks
Starfire Sports Fields	1	Incentives for businesses to add Level 2 stations.

Public Buildings (16)

Location	# of votes	Relevant comments
Renton Library	4	
Renton Highlands Library	3	All public libraries should have L2 charging
Renton Community Center	3	All community buildings should have L2 chargers
Newcastle Library	2	
Don Persson Renton Senior Activity Center	2	It would be nice to have charging stations at the senior center for staff members and customers who need to be encouraged to buy EV cars :)

Location	# of votes	Relevant comments
1100 Bronson Way N, Renton, WA 98057	1	City maintenance facilities should have chargers capable of supporting large vehicles such as trucks
Tukwila Community Center	1	

Schools (14)

Location	# of votes	Relevant comments
Renton Technical College	4	
Renton High School	4	Kids and staff who can't charge at home cause they rent need solid and free options.
Hazen High School	2	Several level 2 stations should be installed in the parking lot away from foul balls.
Sierra Heights Elementary School	1	EV charging should be available to school personnel during the school day and open for neighborhood public charging nights/weekends
Lindbergh Senior High School	1	To support the school and the playfields, several level 2 stations should be installed in the parking lots away from foul balls.
Liberty High School Football Field	1	To support users of the playfields, several level 2 chargers should be installed in the parking lots near the fields but away from foul balls.
Dimmitt Middle School	1	Free level 2 charging at all public locations

Parking Lots (7)

Location	# of votes	Relevant comments
154th Place and Maple Valley Highway	2	*major intersection between 154th PL and maple valley highway which is a high traffic population area*
218 Main Ave S, Renton, WA 98057	2	
Parking lot near Mill Ave S & Houser Way S bus stop	1	*This is a public parking which sometimes people use to get bus, shopping/dinning around Renton or use the*

Location	# of votes	Relevant comments
		liberty park facilities. It would be good to have some EVs here.
City Center Parking Garage	1	
320 Wells Ave S, Renton, WA 98057	1	

Park & Rides ((7)

Location	# of votes	Relevant comments
Renton Highlands Park & Ride	4	Charger here which would also be useful for the church and for staff at the school across the street.
Park & Ride (2900 Park Ave N, Renton, WA 98056)	1	
De facto Park & Ride (near 2862 Kennewick Pl NE)	1	
Park & Ride at St. Matthew's Lutheran Church	1	

Commercial buildings (6)

Location	# of votes	Relevant comments
Boeing Renton Factory	2	Incentives for employers to provide free L2 stations
Kentworth Truck Company – Renton	2	Incentives for employers to install chargers As well as implement more electric semi trucks in Renton's fleet
Sunset Multi Service Building	1	
Hampton Inn Seattle Southcenter	1	Incentives for businesses like hotels to add Level 2 charging. No one wants to deal with a charging station for a 10 minute shop at Walgreen's, but for an overnight stay it's really important.

Apartment Complexes (5)

Location	# of votes	Relevant comments
800 Garden Ave N, Renton, WA 98057	2	New apartment complexes over a certain size should have a charger requirement
Brighton Ridge Apartments	1	Fast charges at apartment complexes
4415 NE 5th St, Renton, WA 98059	1	Fast charges at apartment complexes
617 Williams Ave S, Renton, WA 98057	1	All new apartments over a certain size should have a charger requirement

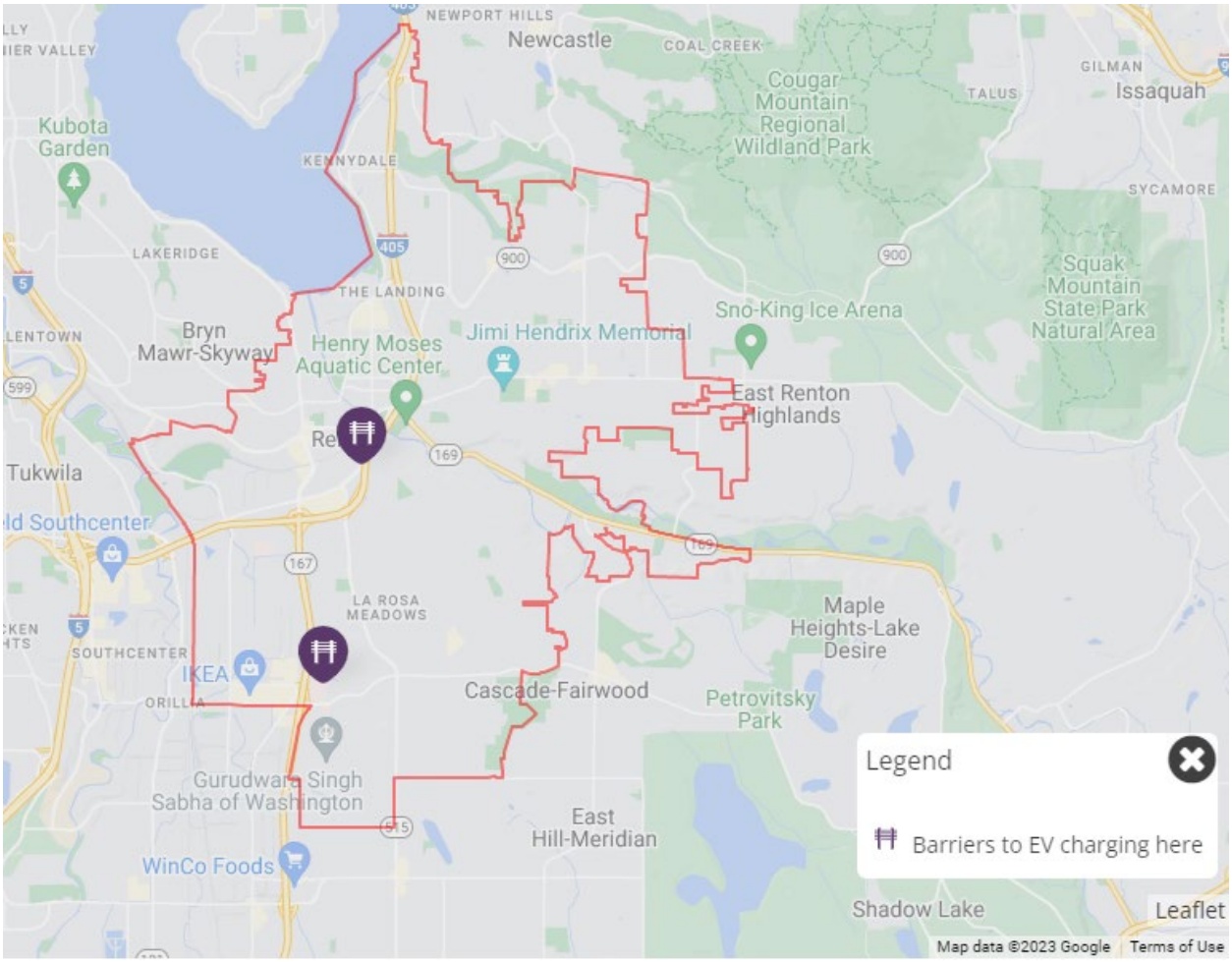
Gas Stations (3)

Location	# of votes	Relevant comments
Arco (1616 NE 30th St, Renton, WA 98055)	2	Level 3
Chevron (3209 NE 4th St, Renton, WA 98056)	1	Fast chargers at Chevron where there is space in the back.

Areas with broken EV chargers

The map and table below shows where participants identified **broken EV chargers in Renton.** To see the full list of mapping responses, which included mapping coordinates, please see "Full Responses, Areas with Broken EV Chargers".

Figure 16. Areas with broken EV chargers

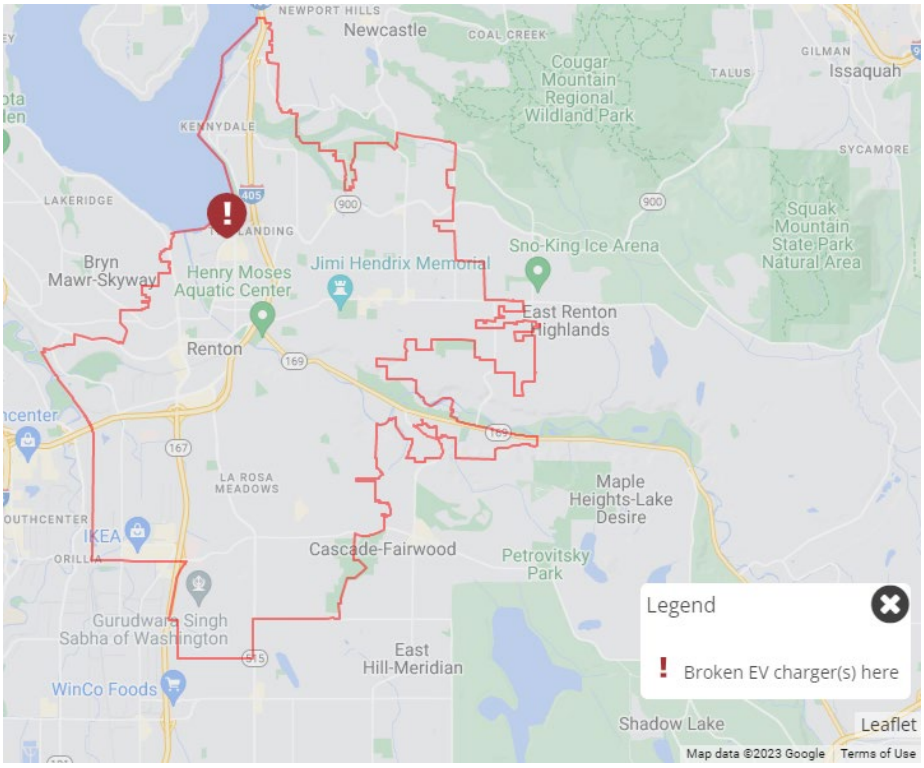


Location	Relevant Comments
The Landing Parking Garage	the ones here are often down

Areas with barriers to EV charging

The map and table below shows where participants identified **barriers to EV chargers in Renton.** To see the full list of mapping responses, which included mapping coordinates, please see "Full Responses, Areas with Barriers to EV Charging".

Figure 17. Areas with barriers to EV chargers



Location	Relevant comment
Renton City Hall	not publicly available
Valley Medical Center	Need a LOT more chargers at VMC

Full Responses

This appendix shows the full list of comments left on the mapping tool by Social Pinpoint respondents. There are 5 tables, showing comments left on the map for those who left a marker for the following:

- Areas that need EV chargers
- Areas with broken EV chargers
- Areas with barriers to EV charging
- Comments on Level 2 EV charging Stations
- Comments on Level 3 EV charging Stations

Language in these columns are left verbatim from mapping participants, thus some of the language may be informal. The number of upvotes and downvotes indicates how many participants "liked" or

"disliked" their comments. Latitudinal and longitudinal coordinates are given to help orient readers. To see this information in summary form, see the Mapping Responses chapter.

Areas that Need EV Chargers

Comment	# of up votes	# of down votes	Latitude	Longitude
large parking lot people tend to shop or use gym for hour • Good idea with the gym	5	0	47.504421	-122.15811
Here	3	0	47.489726	-122.155523
college with large parking lot.	3	0	47.490556	-122.175251
Library needs one	3	0	47.481557	-122.202596
Needs EV Chargers • All Community Bldgs need L2 chargers • I agree	2	0	47.481255	-122.196507
Needs charging stations	2	0	47.482413	-122.20125
Needs charging stations	2	0	47.479759	-122.2067
here	2	0	47.489421	-122.162647
for the stadium • My biggest concern is making sure that people can't cut the cords off. Downtown seems like it will be a prime place for that. I got stranded in downtown Auburn driving from one to another and they were all cut. AAA can't charge the vehicle, so I would have to get it towed.	2	0	47.487363	-122.209436
Would support the use of electric vehicles going to the park. Solar panels on some of the buildings to help offset the electricity use.	2	0	47.506348	-122.201303
At cedar river trail.	2	0	47.495023	-122.212601
Locate a Station behind the Hop In Groc or the Top of the Hill Produce Stand	2	0	47.487155	-122.146217

Comment	# of up votes	# of down votes	Latitude	Longitude
3 or 4 level 3 chargers needed in the Renton Highlands.	2	0	47.487281	-122.146637
Needs charging stations	1	0	47.471055	-122.211936
Needs charging stations	1	0	47.476366	-122.216656
Install EV charger infrastructure at Park while it is under construction. Build out only a couple as demand grows.	1	1	47.472701	-122.195706
Could use a private charging station	1	0	47.4433	-122.197891
Paid charger opportunity. Multi-hour stays at this location. • I agree	1	0	47.470257	-122.160845
maybe not this exactly location, but this area of 3rd needs some.	1	0	47.479801	-122.205706
Fairwood shopping center needs level 3 charging.	1	0	47.432863	-122.153549
Parking lot near restaurants.	1	0	47.480513	-122.203857
Let's make it happen; Now!	1	0	47.460594	-122.187195
For guests of park • Agreed	1	0	47.506958	-122.179542
This seems to make a lot of sense	1	0	47.506845	-122.183826
Maybe gas stations can have level 3 chargers	1	0	47.51865	-122.196743
Incentives for employers to provide free Level 2 stations.	1	0	47.500329	-122.207172
Decent location for a paid Level 3 charger, near 167 and 405 and still close to downtown	1	0	47.470052	-122.213116
Fast chargers at McChevron where there is space in the back.	1	0	47.488202	-122.175168
Level 3 needed by the library	1	0	47.539045	-122.170227

Comment	# of up votes	# of down votes	Latitude	Longitude
Ron Regis Park, great location where people park for sporting events or to use the cedar river trail.	1	0	47.467238	-122.146983
Chargers by park	1	0	47.477036	-122.207987
Incentives for employers to install chargers As well as implement more electric semi trucks in Rentons fleet	1	0	47.493849	-122.196679
New apartment complexes over a certain size should have a charger requirement	1	0	47.496582	-122.197838
Rolling Hills Pool/sports complex has many visitors, especially in summer.	1	0	47.466296	-122.212601
This parking lot is used for people using GeneCoulon park facilities and even the playground for kids, It would be good to have EVs	1	0	47.503519	-122.203299
Agree ! Charger here which would also be useful for the church and for staff at the school across the street.	1	0	47.506865	-122.183354
Good to have charging at the park	1	0	47.506028	-122.201529
Needs charging stations	0	0	47.481196	-122.212107
Needs charging stations • It would be nice to have charging stations at the senior center for staff members and customers who need to be encouraged to buy EV cars :)	0	0	47.486237	-122.207912
Needs charging stations	0	0	47.485468	-122.207043
Needs charging stations	0	0	47.483039	-122.205198
Needs charging stations	0	0	47.474044	-122.216377
Needs charging stations	0	1	47.458565	-122.20861

Comment	# of up votes	# of down votes	Latitude	Longitude
Tailhead for easily hour+ adventures could use paid chargers	0	0	47.43049	-122.17516
this place could use way more, or in the outdoors parking	0	0	47.498511	-122.204795
needs charger	0	0	47.447008	-122.217123
this center can use one	0	0	47.443391	-122.198246
major intersection between 154th PL and maple valley highway which is a high traffic population area • I agree	0	0	47.464454	-122.136791
Fast food place near highway exit should be ideal location for charging stations.	0	0	47.531832	-122.195134
DT parking garage	0	0	47.480955	-122.208636
By parking area for park when it opens.	0	0	47.496707	-122.164477
Parks are a great place for these. People spend time at them	0	0	47.514686	-122.190328
In parking lot for the park	0	0	47.523305	-122.207116
Kids and staff who can't charge at home cause they rent need solid and free options. • All School facilities need L2 chargers	0	0	47.482597	-122.211614
Level 2 chargers in every public location. Free, paid for out of EV fees.	0	0	47.500228	-122.214811
Free Level 2 charging at all public locations. It's gotta be easy and reliable for people.	0	0	47.478319	-122.195735
Park charger	0	0	47.477362	-122.179856
Incentives for businesses like hotels to add Level 2 charging. No one wants to deal with a charging station for a 10 minute shop at Walgreen's, but for an overnight stay it's really important.	0	0	47.462973	-122.244143

Comment	# of up votes	# of down votes	Latitude	Longitude
Incentives for businesses to add Level 2 stations.	0	0	47.46953	-122.24865
Allentown is bereft of options atm	0	0	47.49021	-122.279077
Free level 2 charging at all public locations.	0	0	47.492211	-122.232385
Level 2s at all parks.	0	0	47.510157	-122.24659
Level 2s at parks and fields.	0	0	47.496038	-122.158999
Level 2s at all parks	0	0	47.457721	-122.175479
Decent spot for a paid Level 3 station, which is sorely needed up SR 169	0	0	47.469675	-122.159858
Fast chargers at apartment complexes	0	0	47.489165	-122.159522
Fast charges at apartment complexes	0	0	47.486557	-122.186084
Chargers at the high school may be useful for teachers and students alike	0	0	47.500706	-122.152047
Large shopping complex area with gym, sport area and restaurants where parking full mist of the time. Good place to add EV chargers	0	0	47.489427	-122.122285
All new apartments over a certain size should have a charger requirement	0	0	47.474106	-122.207193
City maintenance facilities should have chargers capable of supporting large vehicles such as trucks	0	0	47.483593	-122.201982
There are currently none in this large shopping parking lot.	0	0	47.496475	-122.204597
This is a public parking which sometimes people use to get bus, shopping/dinning around Renton or use the liberty park facilities. It would be good to have some EVs here.	0	0	47.480684	-122.202441
Parking lot used for restaurants, it would be good to have some EVs here.	0	0	47.478846	-122.205069

Comment	# of up votes	# of down votes	Latitude	Longitude
heavily used park & ride	0	0	47.518074	-122.201056
This street is a de facto park & ride for northbound buses to Seattle and Bellevue.	0	0	47.517854	-122.196143
parking for fishing and for the Cedar River Trail	0	0	47.456215	-122.076945
park and ride at St. Matthew's Lutheran Church	0	0	47.506898	-122.179642
To support users of the ball fields, several level 2 chargers should be installed in the parking lot (away from foul balls)	0	0	47.481347	-122.212866
To support users of the ball park, several level 2 chargers should be installed in the parking lot away from foul balls.	0	0	47.483211	-122.200718
To support use of the ballparks, several level 2 stations should be installed in the parking lot away from foul balls.	0	0	47.502553	-122.15394
To support the school and the playfields, several level 2 stations should be installed in the parking lots away from foul balls.	0	0	47.454618	-122.167407
To support users of the playfields, several level 2 chargers should be installed in the parking lots near the fields but away from foul balls.	0	0	47.477287	-122.119886
RTC multiple locations	0	0	47.48934	-122.177035
Sunset MultiService Bldg	0	0	47.503243	-122.181015
All parks need L2 chargers • Agreed	0	0	47.499822	-122.182871
All libraries need L2 chargers • Agreed, all public libraries should have EV charging • if the parking ever opens here, we def need them here.	0	0	47.499614	-122.181839
Golf Course	0	0	47.470603	-122.15975

Comment	# of up votes	# of down votes	Latitude	Longitude
Renton Stadium	0	0	47.488412	-122.210004
Would love to see chargers at the May Creek Natural Area, Kennydale Beach Park, Eastrail parking areas, Coulon Park.	0	0	47.504809	-122.205734
EV charging should be available to school personnel during the school day and open for neighborhood public charging nights/weekends	0	0	47.514994	-122.165211
Neighborhood park would be a convenient location for fast charging (L2 or L3) for park guests and neighborhood residents	0	0	47.513293	-122.159609
Public EV charging would be great for park guests and trail walkers/runners	0	0	47.498344	-122.214113

Areas with Broken EV Chargers

Comment	# of up votes	# of down votes	Latitude	Longitude
the ones here are often down	0	0	47.498315	-122.20471

Areas with Barriers to EV Charging

Comment	# of up votes	# of down votes	Latitude	Longitude
not publicly available	0	0	47.474812	-122.204782
Need a LOT more chargers at VMC	0	0	47.442921	-122.212944

Existing Level 2 EV Charging Stations

Comment	# of up votes	# of down votes	Address
I never see these used. Ever.	0	0	3011 Sunset Blvd NE

Slow or doesn't work. No other shop in the complex except Walgreens. Most of the times the charger is free as not convenient location.	0	0	4105 4th St NE

Existing Level 3 EV Charging Stations

Comment	# of up votes	# of down votes	Address
Rarely, if ever, see these chargers in use.	0	0	1215 N Landing Way

Appendix C: Community Workshop Summary

Summary Overview

This document summarizes feedback from the City of Renton's community workshop held to the public on May 4th, 2023, between 6-7pm. The input gathered will be used to inform the Renton Electric Vehicle (REV) Charging Plan.

There were 16 total participants at the workshop, including five City of Renton staff, three Cascadia staff, and eight community participants.

Workshop Overview

Workshop objectives

The virtual workshop provided community members an opportunity to learn about the REV Charging Plan as well as to provide feedback on their priorities and concerns as it relates to EV charging stations within Renton, and understanding locations where community members want to see more charging stations.

We will use these findings to:

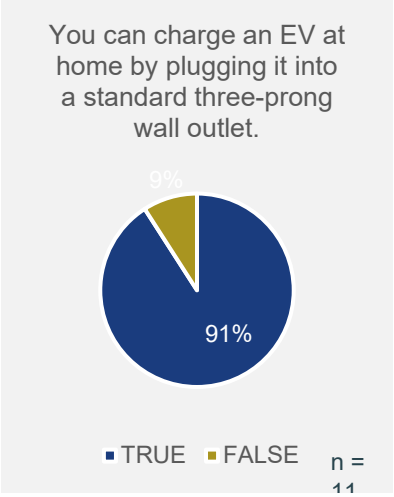
- Confirm locations of EV chargers in Renton, including noting broken chargers.
- Recommend locations and considerations for new EV charging sites in Renton.
- Note considerations for future community engagement around EV charging.

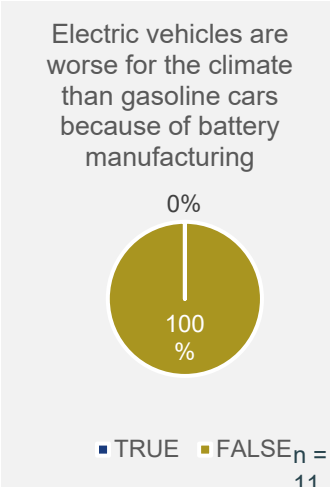
Workshop Agenda

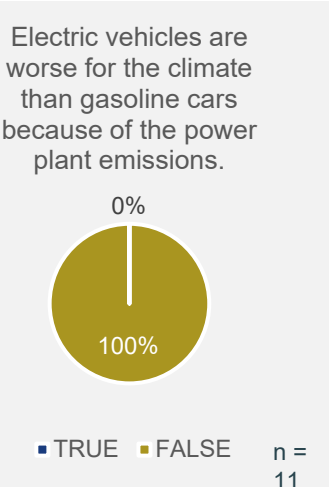
Time	Agenda Item
5 mins	Welcome and Introductions
10 mins	REV Plan Background and Current EV Landscape in Renton
5 mins	Q&A
5 mins	Discussion Overview
30 min	Breakout Group Discussion
5 mins	Wrap up & Next Steps

Welcome and Overview

The workshop began with a brief overview of the project background and the current EV landscape in Renton. Then, participants were invited to participate in a Zoom poll to gauge their understanding of common EV misconceptions. Most participants answered the questions correctly. This is not surprising, given that most registrants had identified themselves as highly knowledgeable about EVs.

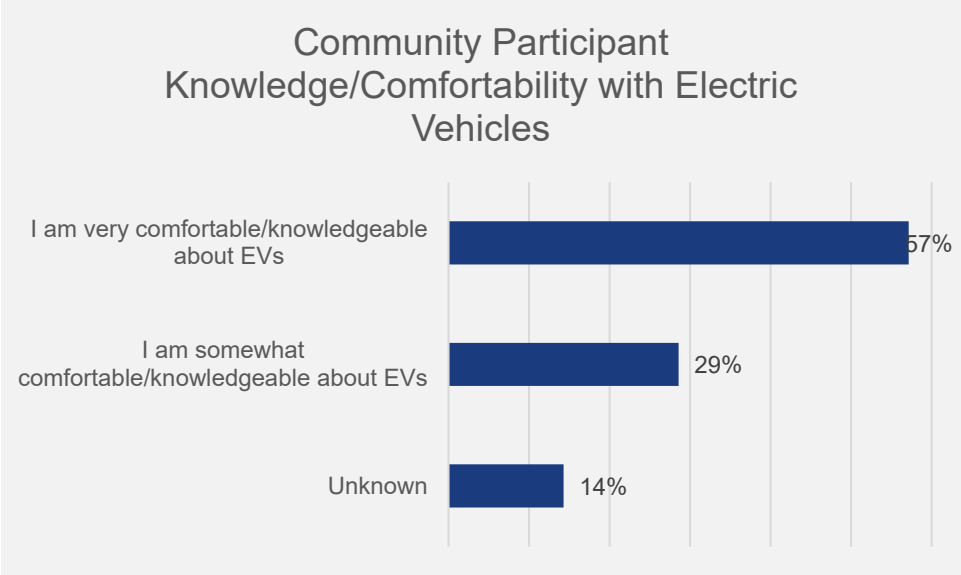






Breakout Discussions

The two breakout rooms were divided based on participants' level of familiarity with EVs, as indicated during Zoom registration. One room catered to individuals who were highly familiar with EVs, while the other room was for those who were somewhat familiar. Each breakout room had a Cascadia facilitator and several City staff representatives to lead and assist in the discussions.



Discussion Themes

This section summarizes themes from the breakout group discussions. To see more detailed notes, visit "Full Notes by Breakout Room".

General thoughts on the transition to ev's

- While there is general support for EVs, residents would like to see EVs with **better mileage**, and there is currently **insufficient EV infrastructure across the US** for long road trips.
- Tesla **charging stations are already crowded**, highlighting the need for more charging options.
- While using commercial chargers may be more expensive than charging at home, **the availability of public charging stations is essential** for those who do not have access to private chargers.
- The transition to EVs should occur **sooner rather than later** to address the challenges associated with accommodating the growing number of EVs.

How to ensure electric transportation and charging equitably serves the Renton community

- Prioritize installing more chargers in areas with a high prevalence of **apartments** and **multifamily housing** to ensure access for those who don't have personal charging facilities. Consider requiring EV charging in new multifamily developments.
- **Keep pricing as low as possible**, such as $6-8 for an Level 3 charge, to ensure affordability and accessibility for all. Offer **free charging** for subscribers, such as Electrify America.
- **Ensure chargers are available for those who need them** by charging a significant **"sitting" fee** after a certain amount of time and enforcing a maximum of 4 hours on an Level 2 charger.
- Provide real-time availability status of EV charging stations through an app like PlugShare.

Biggest priorities and concerns related to EV charging in Renton

- Install more **Level 3 chargers throughout Renton**, not just in crowded areas like The Landing.
- Install **Level 2 chargers** at public locations to balance the cost and speed of charging.
- Ensure that charging stations are available for EV owners who need to charge their vehicles to 100%, not just to the level they need to get home.
- Promote the use of EV charging stations by **discouraging non-EVs from occupying them.**
- It is important to **keep the costs of charging low** to encourage EV adoption and usage.
- **Charger reliability** is a concern, as some chargers are frequently out of service, there have been incidents of charging cables being cut, and newly installed chargers taking an unacceptably long time to become operational.
- The entity responsible for turning on the newly installed chargers needs to work faster, as there have been **delays of weeks and even months to turn on new chargers.**
- The City should clarify who is responsible for charger maintenance.
- **Availability of CHAdeMO chargers is decreasing**, which is a concern for users of compatible EV models.
- **Vandalism**, especially at trailheads, poses a risk to the safety and usability of charging stations.

EV charging station locations

- To encourage EV adoption, **new developments should be required to install EV chargers**, and the City should prioritize installing chargers where they are most needed, taking into account the length of the average trip and the potential for charger overcrowding.
- **Add EV charging facilities with nearby amenities**, such as bathrooms, coffee shops, and restaurants, to provide a more pleasant charging experience.
- **Install EV chargers near City parks** and focus on areas where people may not have access to charging facilities otherwise.
- Consider the needs of both local travelers and travelers passing through by **installing Level 3 chargers close to the freeway**.
- Ensure that chargers can get **cell and internet access** so people charging can do other things while charging.
- When deciding where to install chargers, the City should consider the potential for **vandalism** and **long-term parking** at trailhead chargers.
- Residents would prefer to have free **Level 2 chargers** located near their residences.
- **Make Level 2 chargers more available in places where people frequently spend more than 30-60 minutes**, such as grocery stores, shopping centers, schools, libraries, community centers, gyms senior centers, and stadiums.
- **Family First Center** in Cascade will have 2 charging stations.
- **Hospitals** are a priority location.
- Level 3 chargers could be installed at hotels for travelers.

- Coulon Park, Cedar River Dog Park, and community centers near gyms, activity centers, and water parks are suggested for EV charging stations.
- EV charging stations in **school parking lots** are suggested due to the increasing number of students driving to school.

Full Notes by Breakout Room

This appendix provides detailed notes from each of the two breakout rooms. Notes were captured verbatim, thus some of the language is informal.

Breakout Room 1 | Somewhat familiar with EVs

The transition to electric vehicles will likely be one of the biggest transportation transitions in our lifetimes. What are your thoughts on the shift to EVs in general?

- EVs are great – would like to see more milage
    - Agree. Took road trip and not sufficient enough EV infrastructure to charge consistently.
        - Saw both DCFC and level 2 chargers – intentionally planned route around charging stations
- Desire better selection of cars; e-golf. Would like more sedan options
- Desire for apt. complex plug-ins w/o charging fee doubling – cost of charging EV expensive
    - Interest in parking in EV spots

How can we make sure that electric transportation and charging equitably serves the Renton community?

- If chargers were more available in places where people hang out for >30 min, it would be equitable – not everyone needs a full charge to get to the grocery store
    - When grocery shopping at the Landing, charges EV – has enough charge to make it back home
- More chargers in areas where there is a high prevalence of apts and multifamily housing
- There is free charging depending on subscription (Electrify America)
- More EV chargers at schools, libraries, community center, senior center, stadium.
    - Cost wise, prefer level 2 chargers
- Benson hill cascade area, Benson hill shopping center, street chargers (on light pole) – Amsterdam, Seattle.
- City parks

What are your biggest priorities related to EV charging in Renton?

- More spaced-out level 3 chargers – not everyone wants to go to the landing – it's almost always full

    - Had to wait an hour to get charger
    - Can tell if its needed if someone gets to 100% charge not just to the level they need to get home
    - At Target, never seen a non-EV occupy EV charger
- Seen people leaving EVs on charger hours after they've fully charged up
- Tesla implements and is strict about idling fees
- Lake Gene Culon Park could use more chargers – nice place to charge a car

What are your biggest concerns related to EV charging Renton?

- Charger reliability
    - Chargers at Target are constantly down (at least 1) – can't even use via app.
- Nissan Leaf – CHAdeMo: stuck if CHAdeMo isn't working
- Cutting charging cables off of 2 chargers
- Grid reliability isn't such a big issue, esp. in newer neighborhoods – bigger problem for older neighborhoods
- EV charger in Highland Center has been ready for last 3-4 weeks – entity turning charger on needs to work faster
    - Same with Electrify America station – when they change the chargers out, it was waiting for about 2 months before it was actually turned on
- Case for PHEV: Kids aren't going to wait 30 minutes to charge

Where would you like to see more EV charging stations in Renton, in terms of types of locations or specific locations? (i.e., shopping centers, gyms)

- Family First Center in Cascade
    - There will be 2 charging stations here
- Hospital

Breakout Room 2 | Very familiar with EVs

The transition to electric vehicles will likely be one of the biggest transportation transitions in our lifetimes. What are your thoughts on the shift to EVs in general?

- Challenge for dense urban environments with multifamily housing will be charging availability.
    - How will the City ensure that chargers are available for people?
    - Will be a challenge to accommodate many new EVs.
- New commercial and residential development should be required to install chargers under code. New developments will have EV chargers, but existing developments are not required to.
- Tesla charging stations are already packed.

- The sooner the better we transition.
- Take into account who needs the charger and how long average trips are. It's possible to charge more than one car on a Level 1 charger alone.
- Keep in mind that DCFC chargers wear down your battery life.
- Using commercial chargers will be much more expensive than charging at home.
- Trailhead chargers will have people parked for a long time and are likely to be vandalized.
- There are already chargers in commercial spaces.
- Multifamily residents are most likely to use public charging stations.
- Like to have a free Level 2 charger nearby residence.

How can we make sure that electric transportation and charging equitably serves the Renton community?

- Require robust EV charging facilities in any new multifamily developments. This is where the need is going to be the most.
    - In multifamily properties, might not be able to reach an outlet from a parking space. Walking distance to multifamily locations would be ideal.
- Keep cost in mind and make it as low as possible.
    - Pricing is a critical part of this.
    - $6-8 for an L3 charge feels reasonable. $15 is too much.
- **Make sure spaces can be open for people who need them**. Charge a "sitting" fee after a certain amount of time. Consider making the fee significant, because it can significantly impact people.
    - Maximum of 4 hours on an L2 charger.
    - Need a way to physically move cars from spaces, both EVs overstaying and ICE (non-EV) spaces.
    - Think about not putting these spaces in the front row so non-EVs are not as likely to occupy them. But don't put them in the back either!
- Excited to see more charging stations around the city.
- Add chargers with amenities nearby:
    - It's difficult to charge with kids in the car. Near bathrooms, coffee, food, etc. would be better than places with limited hours/empty lots.
    - +1 for having something to do nearby charging stations.
    - Make sure chargers can get cell/internet access
- **Keep both local travel and travelers passing through in mind**. A smattering of L3 chargers close to the freeway would encourage EV travel.
- Have the availability status of a charger be on an app.
    - PlugShare is an app where you can add notes to a charger, including availability.

- Focus on places where people will not otherwise have access to chargers.

What are your biggest concerns related to EV charging Renton?

- Keeping spaces open for users.
- Who would be responsible for maintaining EV chargers?
- Chademo chargers are hard to find – getting phased out.
- Vandalism, esp. at trailheads.
    - Would trailhead spaces only make sense far outside the city for people traveling?
- Keep costs of charging low.

Where would you like to see more EV charging stations in Renton, in terms of types of locations or specific locations? (i.e., shopping centers, gyms)

- Have L1 charger at home and L2 chargers at work. Use L3 charger when traveling. Would be helpful to have L2 chargers in places where you go for an hour or so: grocery stores, gyms. L3 chargers could be at hotels.
- Cedar River Dog Park (L2)
- Coulon Park – connects with trail system
- Community center – near gym, activity center, water park
- At school parking lots as lots of students now drive to school