



# Recommendations for Increased Electric Vehicle Access and Adoption in Salem, Oregon

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WINTER 2024

SALEM

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PPPM 410/510: TRANSPORTATION POLICY | SCHOOL OF PLANNING, PUBLIC POLICY AND MANAGEMENT



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**Michael Slater**, Salem Planning Commission

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This report represents original student work and recommendations prepared by students in the University of Oregon's Sustainable City Year Program for the City of Salem. Text and images contained in this report may not be used without permission from the University of Oregon.

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## About SCI

The Sustainable Cities Institute (SCI) is an applied think tank focusing on sustainability and cities through applied research, teaching, and community partnerships. We work across disciplines that match the complexity of cities to address sustainability challenges, from regional planning to building design and from enhancing engagement of diverse communities to understanding the impacts on municipal budgets from disruptive technologies and many issues in between.

SCI focuses on sustainability-based research and teaching opportunities through two primary efforts:

**1. Our Sustainable City Year Program (SCYP)**, a massively scaled university-community partnership program that matches the resources of the University with one Oregon community each year to help advance that community's sustainability goals; and

**2. Our Urbanism Next Center**, which focuses on how autonomous vehicles, e-commerce, and the sharing economy will impact the form and function of cities.

In all cases, we share our expertise and experiences with scholars, policymakers, community leaders, and project partners. We further extend our impact via an annual Expert-in-Residence Program, SCI China visiting scholars program, study abroad course on redesigning cities for people on bicycle, and through our co-leadership of the Educational Partnerships for Innovation in Communities Network (EPIC-N), which is transferring SCYP to universities and communities across the globe. Our work connects student passion, faculty experience, and community needs to produce innovative, tangible solutions for the creation of a sustainable society.

## About SCYP

The Sustainable City Year Program (SCYP) is a yearlong partnership between SCI and a partner in Oregon, in which students and faculty in courses from across the university collaborate with a public entity on sustainability and livability projects. SCYP faculty and students work in collaboration with staff from the partner agency through a variety of studio projects and service-learning courses to

provide students with real-world projects to investigate. Students bring energy, enthusiasm, and innovative approaches to difficult, persistent problems. SCYP's primary value derives from collaborations that result in on-the-ground impact and expanded conversations for a community ready to transition to a more sustainable and livable future.

## About City of Salem

The City of Salem is Oregon's second largest city (179,605; 2022) and the State's capital. A diverse community, Salem has well-established neighborhoods, a family-friendly ambiance, and a small town feel, with easy access to the Willamette riverfront and nearby outdoor recreation, and a variety of cultural opportunities.



The City is known for having one of Oregon's healthiest historic downtowns, hosts an airport with passenger air service, and is centrally located in the heart of the Willamette Valley, 47 miles south of Portland and an hour from the Cascade Mountains to the east and the ocean beaches to the west.

State government is Salem's largest employer, followed by the Salem-Keizer School District and Salem Health. The City also serves as a hub for area farming communities and is a major agricultural

food processing center. A plethora of higher education institutions are located in Salem, ranging from public Western Oregon University, private Willamette and Corban universities, and Chemeketa Community College.

Salem is in the midst of sustained, steady growth. As a "full-service" city, it provides residents with services such as police and fire protection, emergency services, sewage collection and treatment, and safe drinking water. Salem also provides planning and permitting to help manage

growth, as well as economic development to support job creation and downtown development. The City also provides 2,338 acres of parks, libraries and educational programs, housing and social services, public spaces, streetscaping, and public art.

Salem's vision is a safe, livable, and sustainable capital city, with a thriving economy and a vibrant community that is welcoming to all. The City's mission is to provide fiscally sustainable and quality services to enrich the lives of present and future residents, protect and enhance the quality of the environment and neighborhoods, and support the vitality

of the economy. The City is in the midst of a variety of planning efforts that will shape its future, ranging from climate action planning and implementation, a transportation system plan update, as well as parks master planning.

This SCYP and City of Salem partnership is possible in part due to support from U.S. Senators Ron Wyden and Jeff Merkley, as well as former Congressman Peter DeFazio, who secured federal funding for SCYP through Congressionally Directed Spending. With additional funding from the city, the partnership will allow UO students and faculty to study and make recommendations on city-identified projects and issues.

## Course Participants

### UNDERGRADUATE

Georgina Wasden  
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## Course Description

### **PPPM 410/510: TRANSPORTATION POLICY**

Transportation policies shape urban spatial structure and impact outcomes ranging from environmental justice to travel behavior to public health. This course provides a foundation in transportation policy and covers topics related local, state, and federal transportation policy. The course presents a brief history of U.S. transportation policy and introduces an array of transportation policy issues, including: the connections between transportation and land use; transportation, the environment, and public health; transportation finance; goods movement policy; and inter-metropolitan movements of goods and people. Course assignments use Oregon as a transportation laboratory and challenge students to synthesize knowledge and original data collection into policy recommendations.

## Executive Summary

The City of Salem sought recommendations on how to increase Electric Vehicle (EV) charging infrastructure and access. Recognizing the importance of a well-rounded and evidence-based approach, the student teams employed a variety of methodologies, including Geographic Information Systems (GIS) analysis, literature reviews, case studies, and interviews with key stakeholders. Based on this research, the students proposed multiple recommendations for how the City of Salem could increase EV charging infrastructure and:

- Ensure charging stations are conveniently located and accessible to all residents
- Emphasize the importance of public education programs and outreach efforts
- Educate the public about the benefits of electric vehicles, how to use charging stations, and the environmental impact of EVs, which can help dispel misconceptions and foster greater acceptance and adoption of EVs
- Highlight the need for increased funding for more EV charging stations and incentives

In summary, students provided the City of Salem with a set of recommendations aimed at enhancing EV charging infrastructure and access. Student findings underscored the importance of expanding charging infrastructure, educating the public, and securing adequate funding and incentives to support Salem's transition to a more sustainable and environmentally-friendly transportation system.

## Introduction

As climate change continues to pose an imminent threat, with the leading greenhouse gas emissions stemming from transportation, cities such as Salem are looking for ways to lower emissions. One of the primary strategies that the City of Salem aims to implement is the increased usage of electric vehicles (EVs). However, boosting the adoption of EVs presents several challenges, particularly in developing the necessary infrastructure to support widespread use. To facilitate this shift, cities need to ensure there are enough charging stations available to meet the demand of EV users.

This report details three topic areas aimed at studying various aspects of vehicle electrification and Climate Action Plans (CAP), specifically in the context of the City of Salem and other locations on the West Coast. These include:

- Mapping charging stations allocation in the City of Salem focused on mapping
- Review of major West Coast city CAPs' vehicle electrification sections
- Vehicle electrification implementation opportunities in Salem and Eugene centered on understanding the complexities of implementing vehicle electrification policies

To address these topics, students conducted research and analysis to identify the steps and actions needed to increase overall EV usage and enhance the supporting infrastructure in Salem. The research included evaluating current charging station availability, identifying optimal locations for new stations, and proposing policies that could incentivize both public and private investments in charging infrastructure.



# Methods

## TOPIC 1: SPATIAL ANALYSIS AND QUANTITATIVE ANALYSIS - CHARGING STATION ALLOCATION IN THE CITY OF SALEM

The first topic, “Charging Station Allocation in the City of Salem”, focused on developing a strategic plan for the placement of EV charging stations throughout Salem. Students reviewed literature to identify factors and methods for optimal charging station allocation. Students then collected data on multifamily units, land use, socioeconomic attributes, and vehicle ownership to describe Salem’s current conditions. Based on this data and literature, students designed a method to determine charging station locations and created relevant maps. Students also proposed recommendations and identified potential challenges.

### Group 1

The first charging station group focused on three main evaluation criteria for fast-charging locations regarding position and concrete realization: time and route, habit compatibility, and accessibility. For these criteria, the group focused on traffic patterns and commuter office locations identifying three priority areas: downtown Salem, southeast Salem (near Mission Street and 20th Street), and

northeast Salem (near Market Street and Hawthorne Avenue). These locations are hubs for commuters and could potentially see a lot of traffic due to their proximity to government buildings, transit hubs, and job locations. Identifying high-demand areas and assessing current infrastructure could help Salem meet their CAP sustainable mobility goals.



Figure 3 City of Salem Charging Station Priority Areas

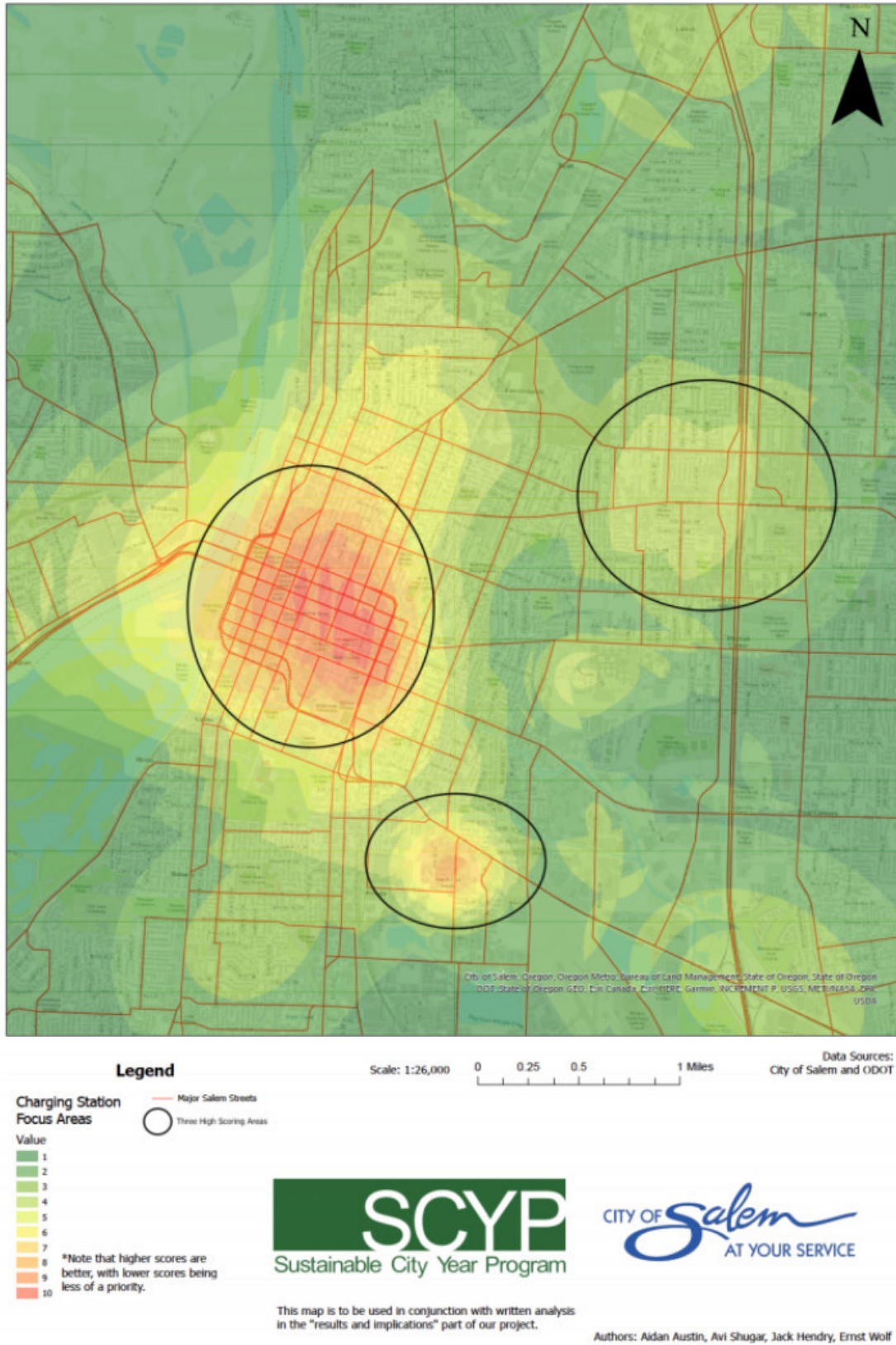


FIG. 1  
City of Salem Charging Station Priority Areas



Figure 1 demonstrates where students recommend having more charging stations based on the criteria outlined.

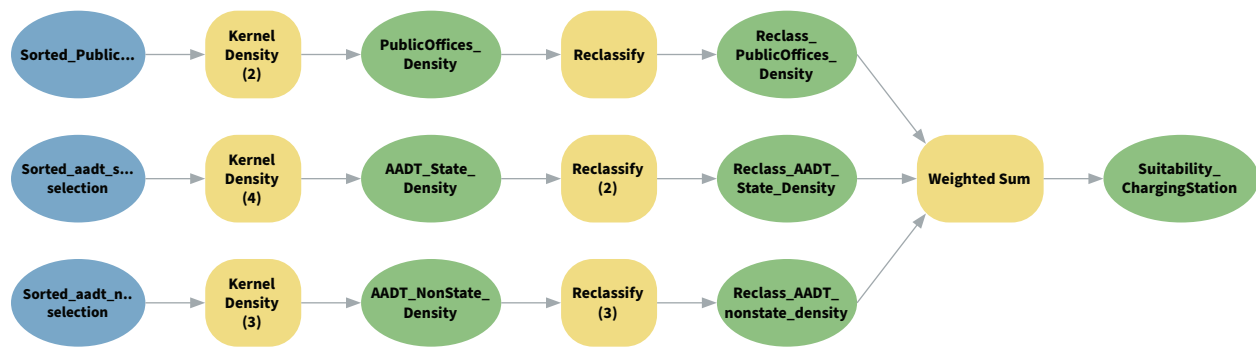
- Colors represent the various scores, with 10 (red) being the best possible score, and 1 (green) being the worst. The first, and highest scoring area (a 10), is in the central downtown Salem area.
- The second area that received a high suitability score, 9 out of 10, is in southeast Salem. A suitable area for EV chargers appears to be near the intersection of Mission Street and 20th Street. Placing electric vehicle chargers at this location could allow the City of Salem's employees to charge their vehicles during the workday, ahead of their travels up and down nearby Highways 22 and 99, or Interstate 5.
- The third area of focus that scores lower in the suitability index is near Market Street and Hawthorne Avenue, near the Lansing area. This area scores a 4 out of 10 because there are few public facilities in the surrounding region. There is currently only one EV charging station in this area of focus, leaving significant opportunity for charging expansion. In addition to this, placing charging stations near employment hubs and busy streets could encourage fair distribution and encourages adoption by people from a variety of socioeconomic backgrounds.

**Group 2**

The second group focused on EV charging infrastructure implementation and highlighted environmental considerations, effectiveness, and equitability issues. They found the most suitable sites for Electric Vehicle Charging Stations (EVCS) include Commercial Street SE, the Four Corners community, as well as several others along the outskirts of the locality. Their results also suggest that multiple sites would benefit from the adoption of Level 2 chargers as they include areas with considerable gaps in the network according to their multi-criteria analysis. Level 2 equipment offers higher-rate AC charging through 240V (in residential applications) or 208V (in commercial applications) electrical service, and is common for home, workplace, and public charging. Adding more sites within the gaps of the existing network relieves heavily used charging stations of traffic during peak times, making the use of charging stations less chaotic for

users, and potentially more appealing to interested parties that have not adopted EVs because of their perception of inconvenience. Considering a blanket approach and conducting a gap analysis of the existing transportation network could support electric vehicle expansion and construction to support a future network.

By geospatially analyzing the distribution of disadvantaged communities overlaid with usage rates and network gaps, the highest priority neighborhoods for adopting a feasibly equitable EV network include the Northgate community, particularly between the intersections of I-5, Silverton Road NE, and Portland Road NE, as well as in the Four Corners community, particularly in the neighborhoods east of the intersection of I-5 and State Street. By analyzing the distribution of multi-family residential units, areas of need may benefit from the allocation of charging stations in their neighborhood (Figure 2).



**FIG. 2**

Density layers of State, Nonstate, and of EV Fueling Stations used to create a “suitability” analysis through weighted sum tool. Note that blue boxes are inputs, while yellow are tools, and green are outputs.

As highlighted by these maps and supported by research on the various efficiency, sustainability, and equity considerations of siting, students identified a clear gap in the central southern section of Salem that could be a primary allocation location. This area lies along a frequently used main corridor, is a zone with a gap in coverage, and includes multi-family housing and

suitable developed sites for infrastructure development. Multiple Level 3 (DC fast charging) stations are recommended in this zone to fill the gap and provide efficient coverage to a high-usage area. This site would be best suited for Level 3 charging stations, as it is a densely populated corridor that is heavily frequented and would benefit from quick charging.

## **TOPIC 2: PLAN REVIEW AND POLICY IMPLEMENTATION - VEHICLE ELECTRIFICATION IN CLIMATE ACTION PLANS**

The second topic, “Vehicle Electrification in Climate Action Plans,” involved reviewing CAPs from major West Coast cities to evaluate their goals, strategies, measurements, and financial plans related to vehicle electrification and draw implications for Oregon cities, especially Salem. Students started with a literature review on vehicle electrification strategies, then reviewed state-level climate action goals, regulations, and incentives. The project also included comparing and contrasting policies from various cities and summarizing opportunities and difficulties for Salem, concluding with recommendations.

### **West Coast Cities**

Students analyzed the CAPs from four major US West Coast communities - San Diego, San Francisco, Seattle, and Los Angeles County. The group found key similarities and differences between EV adoption and goals. All have stated goals of increasing EV use and ownership significantly over the next ten years, with strategies focusing on reducing

the barriers to EV use. However, there were some differences in strategies such as Seattle’s All-EV municipal fleet, San Francisco’s focus on low-income accessibility, Los Angeles’ focus on vehicle-grid integration applications, and San Diego’s collaboration with its school district to convert school buses to zero emissions vehicles.

City	Goals	Strategies	Measurements
Seattle	<ul style="list-style-type: none"> <li>90% of all personal trips are zero emissions by 2030</li> </ul>	<ul style="list-style-type: none"> <li>Convenient access to charging</li> <li>Collaboration with Seattle City Light</li> <li>EV Municipal Fleet</li> </ul>	<ul style="list-style-type: none"> <li>GHG emissions</li> <li>EV registration</li> </ul>
San Francisco	<ul style="list-style-type: none"> <li>100% of private vehicles registered as EVs by 2034</li> <li>By 2030, 80% of trips taken by low-carbon modes</li> </ul>	<ul style="list-style-type: none"> <li>Focus on EV accessibility for low-income households</li> <li>Public awareness campaign</li> <li>Expand EV charging</li> <li>State Incentive Programs</li> </ul>	<ul style="list-style-type: none"> <li>GHG emissions</li> <li>EV registration</li> </ul>
Los Angeles	<ul style="list-style-type: none"> <li>100% of all vehicles have 0 carbon emissions by 2045</li> </ul>	<ul style="list-style-type: none"> <li>Expand EV infrastructure</li> <li>Vehicle-grid integration applications at workplaces</li> <li>Incentives for existing buildings to install charging</li> </ul>	<ul style="list-style-type: none"> <li>GHG emissions</li> <li>EV registration</li> </ul>
San Diego	<ul style="list-style-type: none"> <li>Reduce upfront costs of EVs</li> <li>771,000 EVs by 2030</li> </ul>	<ul style="list-style-type: none"> <li>Purchasing incentives from federal and state agencies</li> <li>Expand EV</li> </ul>	<ul style="list-style-type: none"> <li>GHG emissions</li> <li>EV registration</li> </ul>
		<ul style="list-style-type: none"> <li>infrastructure</li> <li>Conversion of school bus fleet to ZEVs</li> </ul>	

**TABLE 1**  
CAP Summary for Major Cities on the West Coast

To ensure EVs are equitable transportation options, public charging should be installed in low-income neighborhoods, and car rental programs focused on EVs also be implemented in low-income communities (Center for Climate and Energy Solutions, 2017, p. 1-6). EVs face barriers being adopted in lower-income areas, especially in San Francisco. Behavioral studies note that many individuals like the idea of owning an EV but are not as motivated to purchase one when compared to a gas-powered car. During their research, students pinpointed a few problematic trends:

- The number of charging stations compared to the number of gas stations. Many charging stations are being placed in small parking lots or limited spaces.
- Private practices and personal preferences significantly affect the number of gasoline-powered cars on the road. Many personal vehicles are gas-powered.
- EV infrastructure, operations, and ownership are very dependent on funding.

### **TOPIC 3: POLICY PROCESS AND IMPLEMENTATION - VEHICLE ELECTRIFICATION IMPLEMENTATION OPPORTUNITIES IN THE CITY OF SALEM AND EUGENE**

The third topic, “Vehicle Electrification Implementation Opportunities in Salem and Eugene,” centered on understanding the complexities of implementing vehicle electrification policies in these cities. This involved identifying stakeholders, designing interview questions, and conducting interviews with about ten local practitioners in both cities. The students reviewed literature on policy implementation related to climate actions, designed relevant interview questions, and identified suitable interviewees. Students then analyzed the interviews to summarize the opportunities and challenges of policy implementation in both cities and compared these findings.

#### **Plan Review of Oregon Cities**

This group analyzed the CAPs from 11 large Oregon cities (population size above 50,000) that included: Portland, Eugene, Salem, Gresham, Hillsboro, Bend, Beaverton, Medford, Springfield, Corvallis, and Albany. Three of Oregon’s 11 largest cities (Hillsboro, Springfield,

and Albany), do not have an official CAP. Cities with CAPs published their plans during different years, making some more relevant and up to date than others. Students found that while many CAPs mentioned EVs, discussions relating to vehicle electrification were minimal and lacking in many key areas.



	Portland	Eugene	Salem	Gresham	Hillsboro	Bend	Beaverton	Medford	Springfield	Corvallis	Albany
<b>Q1:</b> Does the city have a Climate Action Plan?	Y	Y	Y	Y	N	Y	Y	N	N	Y	N
<b>Q2:</b> Does the plan use the term "electric vehicles" (or another related term)?	Y	Y	Y	Y	Y	Y	Y	N	N	Y	N
<b>Q3:</b> Does the plan connect EVs to GHG emissions reductions goals?	Y	Y	Y	Y	Y	Y	Y	N	N	Y	N
<b>Q4:</b> Do any of the plan's goals broadly focus on EVs/expanding EV adoption?	N	Y	Y	Y	N	Y	Y	N	N	N	N
<b>Q5:</b> Do any of the plan's goals focus on increasing the number of EV charging stations?	N	Y	Y	Y	N	Y	Y	N	N	N	N
<b>Q6:</b> Does the plan identify specific policies or plans to meet these EV goals? If so, how many?	Y	Y	Y	Y	N	Y	Y	N	N	Y	N
<b>Q7:</b> Does the plan include performance measures to monitor progress towards EV goals?	N	N	N	N	N	Y	N	N	N	N	N
<b>Q8:</b> Does the plan include information about the financing of EV policies/plans?	N	N	N	N	N	Y	N	N	N	N	N

**TABLE 2**

Answers to each question by CAP.



Thus, in their analysis students found that city goals related to EVs lack diversity and specificity. They also found that despite significant gaps in research regarding CAPs and EVs, their findings indicate that cities with CAPs are far more prepared to introduce EVs widely than cities without CAPs. The work Salem and Gresham have done to improve accessibility for low-income communities by providing more information, creating accessible infrastructure, and developing financial plans to assist the higher upfront costs when purchasing associated with EVs is notable.

#### **Eugene Interview Group**

A student group interviewed stakeholders in Eugene to gather insights from a comparable community. This group found that the main physical restriction to electric vehicles becoming more widespread is charging stations, as well as the parking space and infrastructure needed to accommodate actively charging vehicles. Another main issue is affordability as currently, on average

EVs are more expensive than traditional internal combustion engines. Their findings highlight the necessity of incentivizing EV ownership through financial measures such as citywide rebates, which complement existing state-level incentives, and adapting EWEB's Home Charging Station Rebate to cover lower power chargers, which can provide lower-cost options and support the energy grid.

#### **Salem Interview Group**

Another group gathered insights directly from the Salem community and found through interviews that the lack of charging stations is one of the biggest obstacles Salem currently faces to increase the EV adoption rate. Interview participants highlighted Salem's large number of parking spaces and believe that electrifying the parking spaces would allow for a higher EV adoption rate. Participants also discussed a lack of government funding available to invest in EVs as a significant barrier.

## Recommendations

The first charging station group recommendations address the urgent need to expand infrastructure over the next two years. The suitability scores of each area of Salem can guide investment priorities geographically as an index. Downtown Salem, with the highest score of 10, should receive the largest investment in charging stations at about 45% of new stations based on its share of the sum of the suitability scores. This central area sees heavy traffic and concentrations of jobs and government offices, suggesting the need for more chargers. Southeast Salem is also a priority, warranting 40% of new stations. Gaps in current infrastructure must be filled to serve this zone's neighborhoods and public offices. In addition, students recommend 15% of new chargers should be installed near Market Street and Hawthorne Avenue, where Interstate 5, major roads, and public services generate substantial demand. Moving forward, Salem should involve stakeholders, such as nearby companies, citizens, and community groups, to learn more about the locations of charging stations.

The second charging group analysis had multiple recommendations. From an equity standpoint, their team supports efforts made in the future to directly build equity into EV planning and policy development. This team also recommends that the City of Salem focus

on constructing EVCS in areas that will receive the most use, focusing on areas that are currently underserved by the network. They also recommend the city consider the type of charging station used and to develop infrastructure with equity and environmental impacts in mind. This includes increased EV infrastructure closer to major corridors and multi-family housing, corridors of high flow-through traffic, and areas with higher population densities. One method for identifying the usage and desirability of EV charging stations could be done through a survey to gather community input. Another suggestion proposed maximizing charging station utility by siting the appropriate charging levels based on location. For stationary charging, Level 3 chargers are recommended for busier areas as they allow for faster charging than Level 2 chargers. Sustainable building practices should also be used when developing infrastructure, including parking lots.

The plan review groups focused on bigger West Coast cities recommended that state incentives provide adequate funding to cities with private businesses in mind and that state regulations focus on guiding private organizations working with EVs. Their vision for charging stations suggested they be as readily available and accessible as gas stations. State and local policy should focus on incentives and adequate federal funding.



The groups focused on Oregon cities' plan review also recommend that EV adoption include implementation of public education and outreach practices to help the community, overcome the technological and knowledge barrier, especially for older adults. By fostering public engagement, cities can effectively remove hesitation and alleviate consumer concerns about the transition to EVs. In addition, incorporating more progress trackers and explaining the financing of EV goals could be a useful tool to ensure successful integration of EVs.

Recommendations from the interviewing groups focused on prioritizing funding for EVs so that adoption can occur in meaningful numbers. This group recognized that misinformation is a main cause for the lack of EV use and recommended more public information regarding EV capabilities and their adoption. Informational campaigns can be used to help address common anxieties people may have regarding EVs such as driving range, battery life, etc. In addition, explaining existing incentives for purchasing EVs such as state and federal subsidies can help lead to greater adoption.

## Conclusion

In conclusion, through the recommendations highlighted in this report, the City of Salem can work to improve the accessibility and overall usage of electric vehicles. The primary barriers identified include insufficient information, inadequate charger availability, and the high costs associated with EVs. To address these challenges, the students propose a multifaceted approach involving increased funding, educational programs, and strategic placement of charging infrastructure, especially in high traffic areas. The call for increased funding is crucial, as it holds the ability to expand the EV charging network significantly. By securing financial resources from federal, state, and local levels, as well as exploring public-private partnerships, Salem can ensure more charging stations are installed. This investment is particularly important in high traffic areas, which will maximize the visibility and convenience of EV chargers, thus encouraging more residents to make the switch to electric vehicles. Educational programs and public outreach are equally important. The students emphasized the need to inform the public about the benefits of EVs, how to use charging stations, and the environmental impact of transitioning to electric vehicles. By addressing common misconceptions and providing clear, accessible information, these programs can increase public confidence and willingness to adopt EVs. This could include workshops, informational campaigns, and partnerships with local organizations to reach a broad audience.

The strategic placement of charging infrastructure is another critical recommendation. Using GIS analysis, the students identified key areas in Salem that would benefit most from additional chargers. Prioritizing these locations, such as downtown Salem, southeast Salem, and northeast Salem, will ensure that charging stations are conveniently located where they are most needed. This approach not only supports current EV users but could also make the idea of owning an EV more attractive to potential buyers by alleviating concerns about charging availability. Moreover, the students suggest that efforts should be made to ensure that EV infrastructure development is equitable. This includes placing chargers in underserved areas and ensuring that lower-income communities have access to these resources. Such measures can help bridge the gap and ensure that the transition to electric vehicles benefits all residents, regardless of their socioeconomic status.

By implementing these recommendations, the City of Salem can make significant strides toward reducing greenhouse gas emissions and promoting sustainable transportation. Through a combination of strategic infrastructure investments, public education, and equitable planning, Salem can lead the way in fostering a cleaner, greener future.

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# Appendix

**Table 1:** Data variables/sources for analyzing areas for new charging stations in the City of Salem, OR

Variables	Dataset	Year	Analytical Unit	Transformations
AADT	ODOT	2021	State-roads	See figure 2
AADT	ODOT	2021	Nonstate roads	See figure 2
Salem Public Facilities  (Filter to only include state/county government facilities).	City of Salem/SCYP	9/2023	Points	See figure 2
Existing Fuel Stations	US Department of Energy	2/2024	Points	"Filter" to show EV charging stations in City of Salem

**Figure 8: AADT Map**

- Red circles represent AADT data collection levels.
- The size of the red circles are based on the count of AADT.
- Higher AADT has larger circles, whereas smaller AADT has smaller circles.
- The public points are also listed on this map.

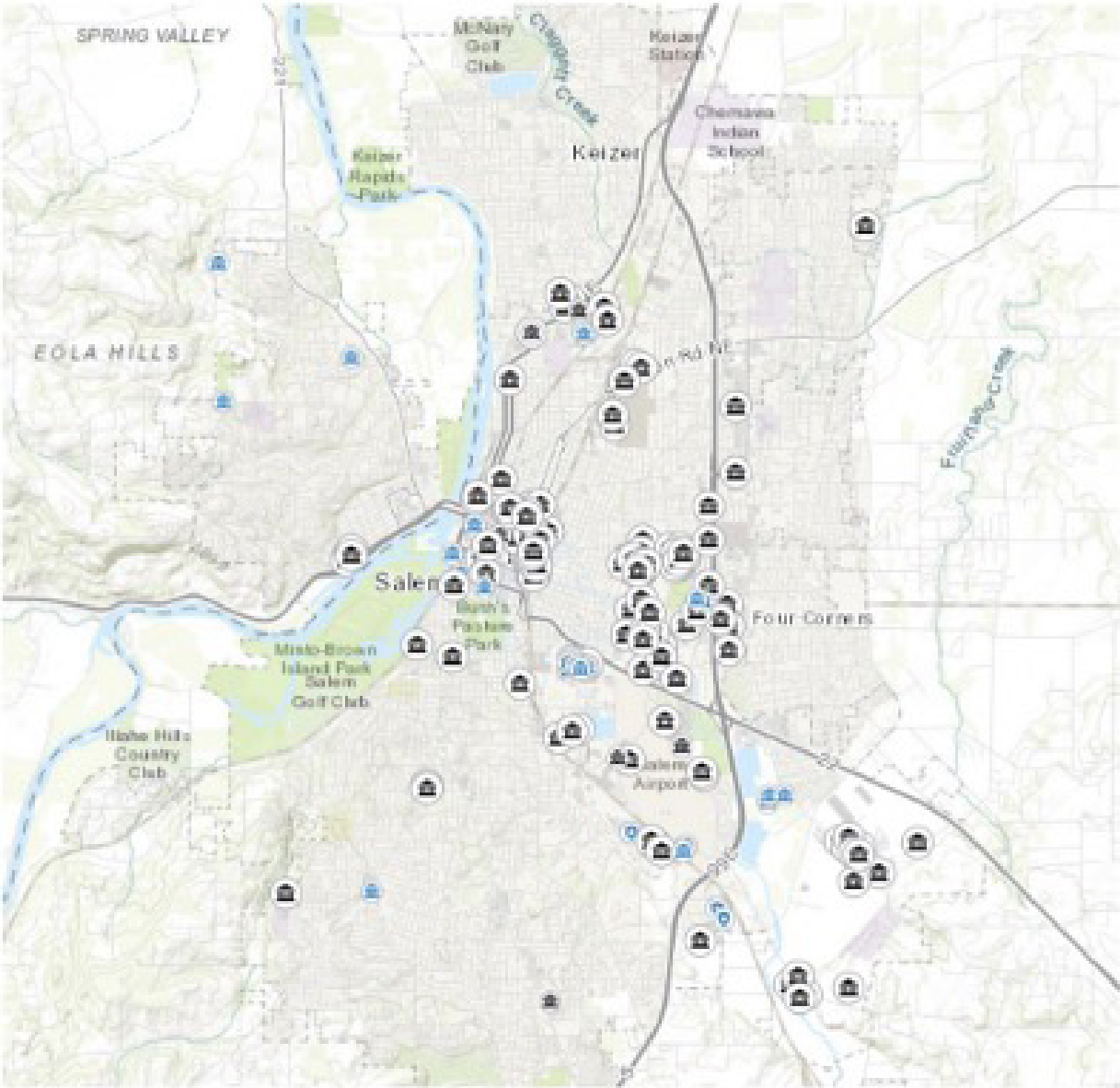


Source: ODOT, City of Salem/SCYP



Figure 9: City of Salem Public Points.

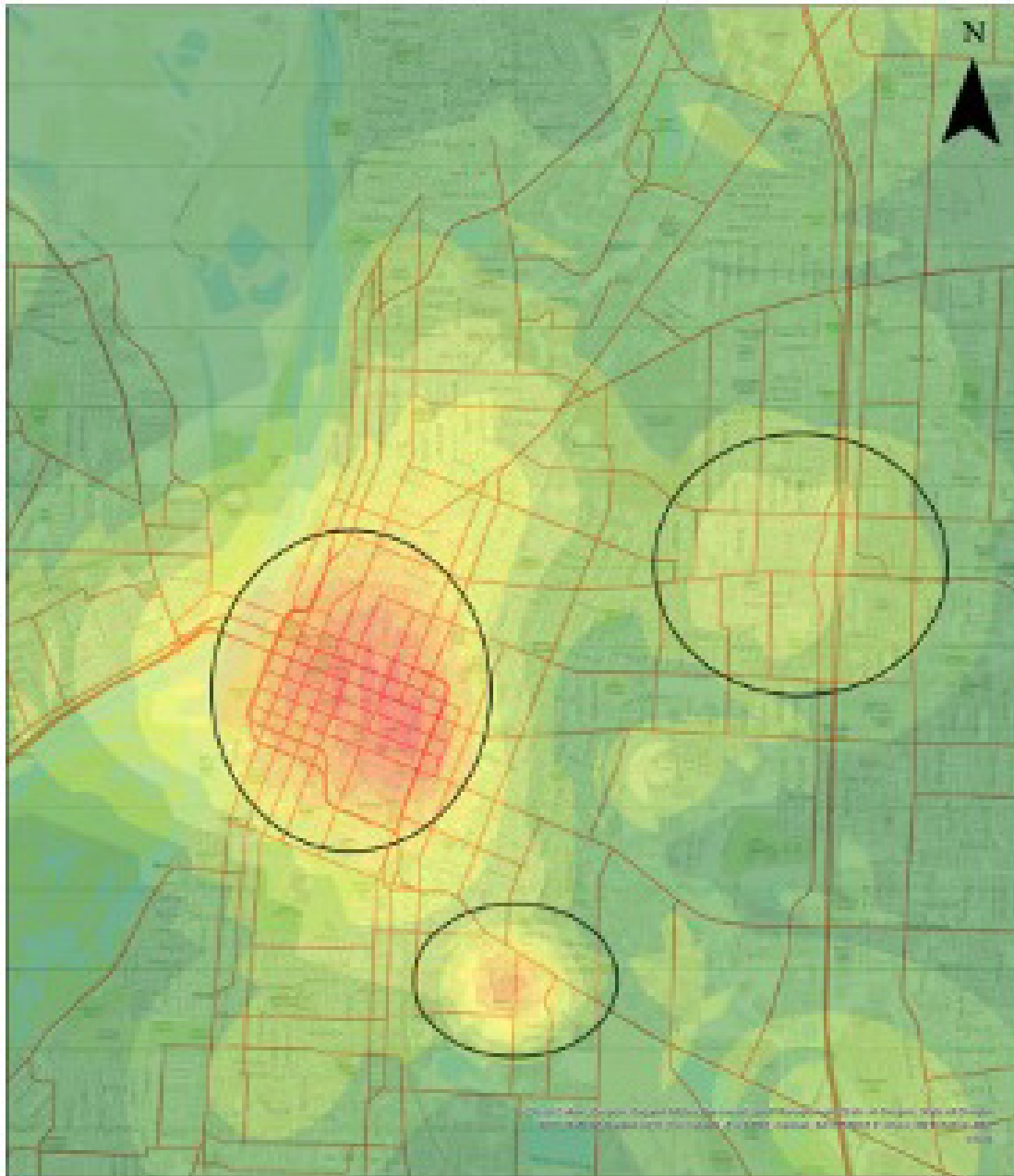
- Map contains all State, Federal, and County government office facilities.
- [An interactive version of this map is viewable at this link.](#)



Source: City of Salem/SCYP

Figure 3 (Same as on 'Figure 3' on page 9, but enlarged to show detail)

City of Salem Charging Station Priority Areas



**Legend**

Charging Station Focus Areas

- Map data source
- Focus Area

Value

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

Note that higher scores are better, with lower scores being less of a priority.

**SCYP**  
Sustainable City Year Program

city of *Salem*  
AT YOUR SERVICE

This map is to be used in conjunction with written analysis in the "Results and Implications" part of our project.

Authors: Mike Smith, Ben Morgan, Jack Hendry, David Wolf

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## Appendix A: Portland CAP Analysis

Question	Yes/No	Explanation	Key terms, concepts, or takeaways	Other notes
Does the city have a Climate Action Plan?	Yes	CAP is complete and easy to locate. CAP was developed in 2015, so is slightly old.		
Does the city have a Climate Action Plan?	Yes	The term "electric vehicle" appears in Portland's CAP 8 times.	Evs are mentioned in the CAP, but not very frequently and without much detail.	
Does the city have a Climate Action Plan?	Yes	The plan does make the connection between Evs and emissions reduction, however, it is very weak and not thorough: "widespread adoption of electric and natural gas vehicles will accelerate carbon emission reductions from the transportation sector"	The CAP discusses the connection between the transportation sector and GHG emissions, but does not adequately justify the role of Evs in emission reduction.	
Does the city have a Climate Action Plan?	No	None of the CAP's objectives name vehicle electrification explicitly. However, Evs do relate to objective 5, "reduce lifecycle carbon emissions of transportation fuels by 20%."	None of the goals target Evs specifically, but Evs do factor into some of them.	
Does the city have a Climate Action Plan?	No	None of the CAP's broad goals relate to charging stations, however, they are mentioned. Charging stations are a component of three "actions to be completed by 2020" identified to help Portland achieve objective 3.	These "actions to be completed" are out dated and it is unclear if the city reached these goals/implemented these actions.	
Does the city have a Climate Action Plan?	Yes	There are a number of "actions to be completed" that relate to Evs, however, as previously mentioned they are out dated. These actions include "update the City's Electric Vehicle Strategy, with the initial goal of adding 8,000 electric vehicles and plug-in hybrids, and evaluate opportunities to: increase the number of public access fast chargers, address barriers to charging for garage-free homes, install charging infrastructure integrated into streetlights, increase use of electric vehicles in car sharing programs, and support use of electric bikes and buses," "support electric car charging stations in publically accessible locations, work with developers, building owners and managers and parking managers to add charging stations and consider electric vehicle-ready guidelines and codes," and "develop a County fleet strategy that incorporates carbon emission reduction, electric vehicle and low-carbon transportation fuel goals."	The plan does identify 3 specific EV policies. These policies are fairly detailed and identify the lead agency in charge of implementation.	
Does the city have a Climate Action Plan?	No	The CAP does identify several measure of success for the plan broadly. These are (1) resident satisfaction, (2) transit and active transportation, (3) reduced carbon emissions, (4) complete neighborhoods, (5) healthier people, and (6) healthy watershed. However, these are very broad and do not apply to specific policies. Some are also hard to measure/they do not include specific quantifications.	The plan does include broad progress measures, but they are not adequate and hard to quantify. None of these measures relate to Evs or any action item specifically, making it difficult to understand how the city is monitoring the success/progress of each action.	
Does the city have a Climate Action Plan?	No	While there is some discussion of funding in the CAP, there is no specific information about how each action (including those related to Evs) will be funded.	Transparency and identification of funding sources needs improvement. Difficult to understand how each policy will be financed.	Under the "Climate Action Consideration" section, the CAP states the funding will occur through existing or potential financial resources, "except where otherwise indicated, the actions included in the plan can be funded through existing programs or can reasonably receive the funding required for implementation from other internal or external sources, including grants."

## Appendix B: Eugene CAP Analysis

Question	Yes/No	Explanation	Key terms, concepts, or takeaways	Other notes
Does the city have a Climate Action Plan?	Yes	Eugene has a robust Climate Action Plan and several accompanying strategies to address the ongoing ecological crisis	Eugene's CAP is one of the most robust and comprehensive plans among the 11 analyzed cities	
Does the plan use the term "electric vehicles" (or another related term)?	Yes	The CAP mentions electric vehicles 43 times, with 8 policies specifically concerning electric vehicles and a separate document providing more details regarding EV adoption in Eugene	Eugene's EV Strategy document is the most comprehensive EV adoption plan among the 11 analyzed cities	
Does the plan connect EVs to GHG emissions reductions goals?	Yes	Action Items T20-T27 - all of which are specifically related to EV adoption and implementation - project 66,000 metric tons of CO2 reduction	The City of Eugene projects its EV policies to account for the third highest reduction in CO2 emissions among all transportation high-impact practices	1. Eugene 2035 Transportation System Plan (Actions T1-T7) 2. Transportation System Plan Aligned with CRO Goals (Action T8) 3. Electric Vehicle Adoption - (Assumes 15,000 in addition to TSP) (Actions T20-T25)
Do any of the plan's goals broadly focus on EVs/expanding EV adoption?	Yes	The CAP features adoption methods including EV ride-and-drive community education events, car-sharing stations at affordable housing sites, encouraging/incincentizing ride-share companies to transition to EV fleets, and converting the City of Eugene's vehicle fleet to be all electric, including busses		
Do any of the plan's goals focus on increasing the number of EV charging stations?	Yes	Action Items T20 and T21 will introduce charging infrastructure requirements at new multi-family housing projects and commercial construction projects by 2021, as well as publicly accessible charging stations	Building more charging stations is the centerpiece of Eugene's EV plans and the city has communicated the locations of charging stations quite well through interactive maps available on the city's website	Although Eugene has developed charging infrastructure implementation plans, the city does not distinguish between slow and fast charging stations
Does the plan identify specific policies or plans to meet these EV goals? If so, how many?	Yes	In 2017, Eugene published its Electric Vehicle strategy plan, which lays out specific policies to facilitate EV adoption		Eugene organized their EV strategy to focus on four broad categories: charging infrastructure; personal Vehicles, fleets and shared mobility; education and outreach; and targets and tracking
Does the plan include performance measures to monitor progress towards EV goals?	No	The Electric Vehicle Strategy plan incorporates extremely broad progress checks, but no specific measures in tracking progress	Finding progress reports has been a challenge, indicating that the City has not yet developed any performance measures or they are not readily available for residents. Either way, this is of note.	
Does the plan include information about the financing of EV policies/plans?	No	The CAP does not specify financial details of the proposed EV policies		The City of Eugene does provide consumer financial incentives to adopt EVs such as tax credits and rebates

## Appendix C: Salem CAP Analysis

Question	Yes/No	Explanation	Key terms, concepts, or takeaways	Other notes
Does the city have a Climate Action Plan?	Yes	Salem has an extensive and recently developed CAP.		
Does the plan use the term "electric vehicles" (or another related term)?	Yes	The CAP mentions EVs 35 times throughout the document and in a variety of sections and contexts.		
Does the plan connect EVs to GHG emissions reductions goals?	Yes	Salem believes widespread electric vehicle adoption will directly lead to substantial GHG reductions. This CAP discusses the connection between transportation sector emissions reduction and EV adoption.	Transportation is the largest GHG emissions sector and Salem believes a	
Do any of the plan's goals broadly focus on EVs/expanding EV adoption?	Yes	Salem encourages residents to purchase EVs next time they are in the market for a vehicle and aim to expand EV access for low-income residents and renters.	Salem will require EV charging stations in new multifamily homes of five units or more while incentivizing new charging stations at existing homes and buildings.	Salem aims to implement a gas tax but recognizes the community must be considered in order to not deinceivize electric vehicles
Do any of the plan's goals focus on increasing the number of EV charging stations?	Yes	Salem will require EV charging stations at newly constructed multifamily residences		Salem's CAP includes a detailed cost-benefit analysis of this strategy.
Does the plan identify specific policies or plans to meet these EV goals? If so, how many?	Yes	Salem appears to incentivize EV adoption but generally defaults to a handful of state policies.		Salem projects that they will reach their carbon emissions reduction goals just with state-level climate policies
Does the plan include performance measures to monitor progress towards EV goals?	No	Salem includes progress measures for its overarching goals, but not specific trackers for EV adoption		
Does the plan include information about the financing of EV policies/plans?	No	The CAP does not include financing information		

## Appendix D: Gresham CAP Analysis

Question	Yes/No	Explanation	Key terms, concepts, or takeaways	Other notes
Does the city have a Climate Action Plan?	Yes			
Does the plan use the term "electric vehicles" (or another related term)?	Yes	Electric vehicles are mentioned 11 times throughout their climate action plan.	Electric vehicles are mentioned within sections on transportation policy, and the fleets and vehicles policy. There is a dedicated section to electric vehicle adoption and implementation goals.	
Does the plan connect EVs to GHG emissions reductions goals?	Yes	Electric vehicles are seen as a mitigation course and is a key part of building resilience to climate change within the transportation sector.	EV's are seen as a sustainability goal to and that is why Gresham have dedicated a specific subsection of the transportation policy section in order to reduce GHG produced by the city.	
Do any of the plan's goals broadly focus on EVs/expanding EV adoption?	Yes	Gresham prioritizes on the expansion of electric vehicles within the city emphasizing the expansion and creation of a green fleet of vehicles.	Gresham has a dedicated sub-section to expanding electric vehicle access. Most of the strategies involve expanding charging station access and investing in charging infrastructure in high traffic areas.	This involves creating new safety and operational standards for charging stations as well as creating an information hub of incentives.
Do any of the plan's goals focus on increasing the number of EV charging stations?	Yes	Most of the information provided within the climate action plan on electric vehicles involves expanding access to charging stations, as well as creating new operational and safety standards for EV charging stations.	Gresham aims to create EV charging hubs in high traffic areas, along with updating current codes and regulations in order to support the development of new charging stations especially at city building's or parks.	
Does the plan identify specific policies or plans to meet these EV goals? If so, how many?	Yes	Each broad policy goal is supported through sections detailing implementation strategies. However these strategies are usually very broad without any tangible goals.	While there are technically 25 implementation strategies that support EV adoption goals these are often broad and repetitive goals like "assemble a project team" or "apply for federal and state grants". Some of the more specific goals include partnering with Portland General Electric in order to increase charging infrastructure, and increasing EV charging infrastructure in order to have 40% of parking spaces with 5 or more spaces to have a charging station. These outlets would be 220V.	
Does the plan include performance measures to monitor progress towards EV goals?	No	There is only a few tangible goals regarding electric vehicle adoption within the entire plan making it difficult for the city to measure their performance.	Increasing charging access to 40% of parking spaces with 5 or more spaces is one of the few performance measures located within the plan. There is only a small number of specific implementation strategies that can provide a way to monitor the city's progress like providing education and partnering with stakeholders in order to create better infrastructure.	
Does the plan include information about the financing of EV policies/plans?	No	Gresham has broad goals of applying for State and Federal funding in order to achieve their EV implementation goal, however, the CAP fails to specify where funding for specific policies will come from.	There is a lack of specifics involved with applying to these grants and sources of funding. The most specific grant involved in the plan is the mention of applying for a Federal grant for chargers and electrical infrastructure. Otherwise Gresham's funding plans for EV adoption are very broad with little substance.	

## Appendix E: Hillsboro

Question	Yes/No	Explanation	Key terms, concepts, or takeaways	Other notes
Does the city have a Climate Action Plan?	No	Hillsboro does not have a Climate Action Plan, but they do have a "Community Plan" and several community & government sustainability goals.	The Community Plan incorporates aspects of a traditional CAP but is more focused on full-spectrum community development - not just climate adaption.	Hillsboro is hoping to publish their CAP in 2025.
Does the plan use the term "electric vehicles" (or another related term)?	Yes	Electric vehicles are briefly mentioned once in the Community Plan.		
Does the plan connect EVs to GHG emissions reductions goals?	Yes	The city's "Energy and Mobility" actions, under which EV implementation falls, are all connected to GHG emissions reduction goals.		
Do any of the plan's goals broadly focus on EVs/expanding EV adoption?	No	Hillsboro appears to be focusing on building infrastructure as opposed to directly expanding adoption.		
Do any of the plan's goals focus on increasing the number of EV charging stations?	Yes	The city is aiming to expand access to EV charging stations, specifically at multi-family housing units.	Developing charging stations specially near denser concentrations of residents is a common strategy.	
Does the plan identify specific policies or plans to meet these EV goals? If so, how many?	No	There is no publicly available information regarding plans to follow through on EV goals as there is no official CAP yet.	Given the mentioning of EVs in the broader community plan, it is reasonable to assume that Hillsboro will include more comprehensive plans in their CAP.	
Does the plan include performance measures to monitor progress towards EV goals?	No	Similarly to question 6, the available initiatives are in their earliest stages.		Hillsboro has performance and progress measures for prior (and outdated) climate initiatives.
Does the plan include information about the financing of EV policies/plans?	No	Again, more information on the details of EV plans will likely not be available until the CAP is released.		

## Appendix F: Bend CAP Analysis

Question	Yes/No	Explanation	Key terms, concepts, or takeaways	Other notes
Does the city have a Climate Action Plan?	Yes			
Does the plan use the term "electric vehicles" (or another related term)?	Yes	The term electric vehicle is used nine times throughout the plan.	Electric vehicle adoption is seen as a key action.	
Does the plan connect EVs to GHG emissions reduction goals?	Yes	Electric vehicles are seen as a key action in reducing GHG emissions from the transportation sector.	Beverton believes smart GHG mitigation strategies from all aspects of the transportation sector will reduce emissions and costs. The movement of vehicles accounts for 27% of all of Beverton's GHG emissions.	
Do any of the plan's goals broadly focus on EVs/expanding EV adoption?	Yes	Expanding EV adoption is seen as an important strategy to reduce the high GHG emissions rate that comes from Beverton's transportation sector.	Currently there are 8 charging stations at city facilities for public and city fleet use. Beverton is going to expand this along with expanding "EV readiness" or charging stations in new buildings as required by Oregon state law for cities over 100,000 people. Beverton also has plans to support the electrification of the school bus fleet. They also support electrification of public transit buses collaborating with trimet.	Beverton aims to support all income levels in expanding EV access. In 2018 Trimet introduced the first electric bus located in Beverton.
Do any of the plan's goals focus on increasing the number of EV charging stations?	Yes	Beverton has multiple strategies to increase EV charging access.	Beverton has outlined expanding charging stations at multi-family and commercial buildings in partnership with PGE. The plan outlines a goal to develop an electric vehicle charging strategy in the public right of way. Beverton is collaborating with PGE to create an "electric avenue" of charging stations for public use.	
Does the plan identify specific policies or plans to meet these EV goals? If so, how many?	Yes	There are many sub policies to increase charging access as well as supporting the increase in electric vehicle adoption.	Beverton supports the electrification of school and public bus fleets which has the potential to reduce up to 5,000 GHG emissions from the transportation sector. Electric avenue and creating more charging access at public facilities is seen as a vital goal in order to reduce GHG emissions. Fast charging is seen of particular importance especially for low income communities looking to transfer away from high gas prices.	
Does the plan include performance measures to monitor progress towards EV goals?	No	Each EV policy is accompanied by a "mitigation potential" or estimate. However, there are no specific targets or measures that can be used to monitor progress.	For each EV adoption goal there is a general measure of how much emissions should be reduced. For example the electrification of school buses within Beverton will reduce 1,000-5,000 tons of emissions. This is a clear target that can be monitored to provide accountability, however there is no timeline for when these targets would be achieved.	
Does the plan include information about the financing of EV policies/plans?	No	While each EV policy has a projected cost range estimate of implementation, the CAP does not provide information about where this funding will come from.	Each EV adoption policy has a cost estimate to provide some financial accountability. For example the electrification of school buses within Beverton is projected to cost more than \$250 per metric ton of emissions. The plan also mentions seeking and advocating for funding to support transportation investments but doesn't specify what these sources may be.	
Does the plan include information about the financing of EV policies/plans?				

## Appendix G: Beaverton CAP Analysis

Question	Yes/No	Explanation	Key terms, concepts, or takeaways	Other notes
Does the city have a Climate Action Plan?	Yes			
Does the plan use the term "electric vehicles" (or another related term)?	Yes	The term electric vehicle is used nine times throughout the plan.	Electric vehicle adoption is seen as a key action.	
Does the plan connect EVs to GHG emissions reductions goals?	Yes	Electric vehicles are seen as a key action in reducing GHG emissions from the transportation sector.	Beaverton believes smart GHG mitigation strategies from all aspects of the transportation sector will reduce emissions and costs. The movement of vehicles accounts for 27% of all of Beaverton's GHG emissions.	
Do any of the plan's goals broadly focus on EVs/expanding EV adoption?	Yes	Expanding EV adoption is seen as an important strategy to reduce the high GHG emissions rate that comes from Beaverton's transportation sector.	Currently there are 8 charging stations at city facilities for public and city fleet use. Beaverton is aiming to expand this along with expanding "EV readiness" or charging stations in new buildings as required by Oregon state law for cities over 100,000 people. Beaverton also has plans to support the electrification of the school bus fleet. They also support electrification of public transit buses, collaborative with Timet.	Beaverton aims to support all income levels in expanding EV access. In 2019 Timet introduced the first electric bus, located in Beaverton.
Do any of the plan's goals focus on increasing the number of EV charging stations?	Yes	Beaverton has multiple strategies to increase EV charging access.	Beaverton has outlined expanding charging stations at multi-family and commercial buildings in partnership with PG&E. The plan outlines a goal to develop an electric vehicle charging strategy in the public right of way. Beaverton is collaborating with PG&E to create an "electric avenue" of charging stations for public use.	
Does the plan identify specific policies or plans to meet these EV goals? If so, how many?	Yes	There are many sub policies to increase charging access as well as supporting the increase in electric vehicle adoption.	Beaverton supports the electrification of school and public bus fleets which has the potential to reduce up to 5,000 GHG emissions from the transportation sector. Electric avenue and creating more charging access at public facilities is seen as a vital goal in order to reduce GHG emissions. Fast charging is seen of particular importance especially for low income communities looking to transition away from high gas prices.	
Does the plan include performance measures to monitor progress towards EV goals?	No	Each EV policy is accompanied by a "mitigation potential" or estimate, however, there are no specific targets or measures that can be used to monitor success.	For each EV adoption goal there is a general measure of how much emissions should be reduced. For example the electrification of school buses within Beaverton will reduce 1,000-5,000 tons of emissions. This is a clear target that can be monitored to provide accountability, however there is no timeline for when this a target would be achieved.	
Does the plan include information about the financing of EV policies/plans?	No	While each EV policy has a projected cost range estimate of implementation, the CAP does not provide information about where this funding will come from.	Each EV adoption policy has a cost estimate to provide some financial accountability. For example the electrification of school buses within Beaverton is projected to cost more than \$250 per metric ton of emissions. The plan also mentions seeking and advocating for funding to support transportation investments but doesn't specify what these sources may be.	

## Appendix H: Medford CAP Analysis

Question	Yes/No	Explanation	Key terms, concepts, or takeaways	Other notes
Does the city have a Climate Action Plan?	No	Medford is in the process of developing a CAP, with no date set for adoption		The city has published a Vulnerabilities Report intended to serve as a precursor to a CAP
Does the plan use the term "electric vehicles" (or another related term)?	No	There is no mention of electric vehicles in the Vulnerabilities Report	Furthermore, there is no mention of electric vehicles anywhere on the city's website	
Does the plan connect EVs to GHG emissions reductions goals?	No	Medford does not have a CAP		The Vulnerabilities Report broadly connects future potential climate goals to reducing GHG emissions
Do any of the plan's goals broadly focus on EVs/expanding EV adoption?	No	There is no mention of electric vehicles on the city's website		
Do any of the plan's goals focus on increasing the number of EV charging stations?	No	There are no publicly available plans to develop EV infrastructure in Medford		Per PlugShare.com, there are 184 EV charging stations in Medford
Does the plan identify specific policies or plans to meet these EV goals? If so, how many?	No	There are no specific policies laid out in the Vulnerabilities Report		
Does the plan include performance measures to monitor progress towards EV goals?	No	There are very few specifics regarding future climate action initiatives, apart from that they are in progress		
Does the plan include information about the financing of EV policies/plans?	No	Again, no specifics about climate initiatives are publicly available at this time		



## Appendix I: Springfield CAP Analysis

Question	Yes/No	Explanation	Any terms, concepts, or strategies	Other notes
Does the city have a Climate Action Plan?	No	Springfield does not currently have a climate action plan, although Eugene and Springfield frequently work together on local projects opening the possibility for further collaboration in terms of sustainability practices.		Close
Does the plan use the term "electric vehicles" (or another related term)?	No			
Does the plan connect EVs to GHG emissions reductions goals?	No			
Do any of the plan's goals broadly focus on EVs/expanding EV adoption?	No			
Do any of the plan's goals focus on increasing the number of EV charging stations?	No			
Does the plan identify specific policies or plans to meet these EV goals? If so, how many?	No			
Does the plan include performance measures to monitor progress towards EV goals?	No			
Does the plan include information about the financing of EV policies/plans?	No			

## Appendix J: Corvallis CAP Analysis

Question	Yes/No	Explanation	Key terms, concepts, or takeaways	Other notes
Does the city have a Climate Action Plan?	Yes	CAP is present, easy to find, and relatively up-to-date (2016).		
Does the plan use the term "electric vehicles" (or another related term)?	Yes	The term "electric vehicle"/"EV" is used 13 times in a variety of sections.	Electric vehicles are mentioned in goal/action sections and in background/information sections that stress the need to reduce GHG emissions.	The use of electric vehicle terminology, while present, is not very in-depth. EVs are only mentioned in a handful of sentences.
Does the plan connect EVs to GHG emissions reductions goal?	Yes	The plan clearly explains the link between transportation and US GHG emissions. EVs are listed among a number of other strategies as ways that communities can reduce their GHG emissions and air pollution.	This plan states that EVs are "highest efficiency options, including embedded and lifecycle energy consumption, for commute vehicles and nearly all uses for a vehicle other than occasional long distance trips." Thus, the plan asserts that EVs are one of the most efficient strategies to mitigate transportation sector GHG emissions.	Plan asserts that EVs are a strategy to reduce emissions and uses the 2012 report by the Union of Concerned Scientists to back up the claim. However, this section is very small and only consists of one paragraph, so it does lack some detail.
Do any of the plan's goals broadly focus on EVs/expanding EV adoption?	No	While the plan does not explicitly state "electric vehicles" in any of its goals, two strategies relate to EVs: "Promote Electric and Lower-Carbon Fueled Vehicles" and "Fleet Fuel Efficiency."	Goals in this plan are very broad (i.e. "the Climate Action Plan will support community preparation for anticipated climate change-related impacts (such as water shortages, severe weather events, and unpredictable energy prices and availability) and enhance the community's ability to adapt and be resilient")	
Do any of the plan's goals focus on increasing the number of EV charging stations?	No	No mention of EV charging stations in the plan.		
Does the plan identify specific policies or plans to meet these EV goals? If so, how many?	Yes	Both strategies listed in Question 4 mention EVs in their corresponding action. The "Promote Electric and Lower-Carbon Fueled Vehicles" strategy is accompanied by the action item "Accelerate transition to electric vehicles" and "Fleet Fuel Efficiency" has the action of "Right size transit, heavy duty and light duty vehicles, increase fuel efficiency and use of low carbon fuels and electricity. Consider electric vehicles and hybrids where duty cycle allows - especially sedans."	Both action items that relate to EVs are very broad and do not include specific policies. This could limit their success.	
Does the plan include performance measures to monitor progress towards EV goals?	No	No mention of performance measures or ways to gauge progress for any strategy.		
Does the plan include information about the financing of EV policies/plans?	No	There is some vague discussion about how the plan will be funded, but no specific mention of EV policies.		

# Appendix K: Albany CAP Analysis

Question	Yes/No	Explanation	Key terms, concepts, or takeaways	Other notes
Does the city have a Climate Action Plan?	No	The city of Albany doesn't have an official climate action plan as many larger cities do. The closest plan Albany has is its involvement in Oregon's Climate Friendly Equitable Communities program.		
Does the plan use the term "electric vehicles" (or another related term)?	No			
Does the plan connect EVs to GHG emissions reductions goals?	No			
Do any of the plan's goals broadly focus on EVs/expanding EV adoption?	No			
Do any of the plan's goals focus on increasing the number of EV charging stations?	No			
Does the plan identify specific policies or plans to meet these EV goals? If so, how many?	No			
Does the plan include performance measures to monitor progress towards EV goals?	No			
Does the plan include information about the financing of EV policies/plans?	No			

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