



City of Boulder Electric Mobility Plan

November 2022



PARTNERS IN ENERGY
An Xcel Energy Community Collaboration

ACKNOWLEDGEMENTS

Thank you to the following individuals who contributed to developing this Electric Mobility Plan. The content of this plan is derived from a series of planning workshops hosted by Xcel Energy's Partners in Energy.

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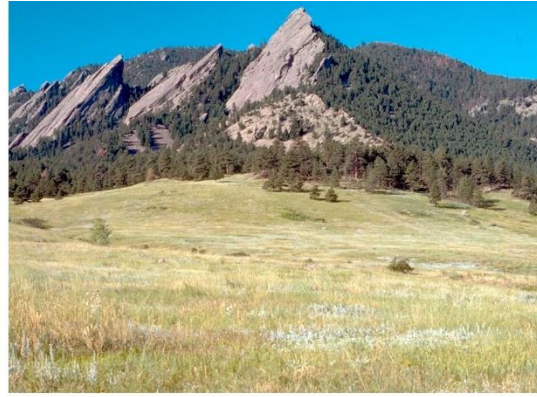
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City of Boulder Electric Mobility Plan

About this Plan

This Electric Mobility Plan was developed through a year-long partnership between the City of Boulder and Xcel Energy to identify and operationalize strategies that support a fully integrated zero emissions mobility network in Boulder. The plan builds on existing policy and a history of leadership on electric mobility in Boulder, to reinforce the city and Xcel Energy’s commitment to partner on strategic initiatives over the next two years and beyond.

The plan was developed within the context of Boulder and Xcel Energy’s 2020 Energy Partnership Agreement and Xcel Energy’s 2021-2023 Transportation Electrification Plan to identify opportunities for collaboration on initiatives that further Boulder’s priorities.

Boulder’s Electric Mobility Goals

The focus of this plan is intentionally broader than electric vehicles alone, as the city is also focused on electrifying transit vehicles and micromobility options. The strategies included in the plan are grounded in Boulder’s overarching climate action and transportation plan goals:

Climate Action Plan (2021 Update)

- 70% community-wide emissions reduction by 2030 against a 2018 baseline
- Become a net zero emissions city by 2035
- Become a carbon-positive city by 2040

Transportation Master Plan (2019)

Create a safe, accessible, and sustainable multimodal transportation system that connects people with each other and where they want to go.

The GoEV City resolution established by the city in 2020 established a community-wide vehicle electrification goal for Boulder:

Electric Vehicle Adoption Goal

- 30% of all vehicles registered in Boulder will be zero emissions by 2030
- 29,300 registered electric vehicles in 2030

Our Focus Areas

To achieve this vision and ambitious goal, the Electric Mobility Action Team identified the following focus areas to prioritize strategies and resources:



Lead by Example



Community Adoption






Charging Solutions



Plan Strategies

To achieve this vision and ambitious goal, the Electric Mobility Action Team identified the following focus areas to prioritize strategies and resources:

| FOCUS AREAS | STRATEGIES 2022-2024 | |
|---|---|---|
|  <p>Lead by example</p> | <p>Municipal operations prioritize electrified mobility options for fleet and employee travel, as well as the installation of infrastructure necessary to support those operations. The fleet policy requires purchase of an electric vehicle where financially and operationally feasible.</p> | <ul style="list-style-type: none"> • L-1: City Fleet Electrification & EV Supply Infrastructure • L-2: City of Boulder Work Travel Trips |
|  <p>Community Adoption</p> | <p>Access to electric mobility options for all Boulder residents and businesses.</p> | <ul style="list-style-type: none"> • CA-1: Electric Vehicle Outreach and Communications • CA-2: Micromobility Incentives |
|  <p>Charging Solutions</p> | <p>Removing barriers for charging at home, providing shared use charging hubs for fleets and EV drivers, and expanding electrified mobility charging options.</p> | <ul style="list-style-type: none"> • CS-1: Regional Fleet Charging Hub • CS-2: Vehicle-to-Building CarShare Pilot • CS-3: Community Charging Hub(s) • CS-4: Curbside / Neighborhood Charging Policies & Programs • CS-5: Multifamily Charging Incentives for Income-Qualified Customers. |

Cross Cutting Themes

Four cross-cutting themes informed the prioritization of strategies in this plan and will guide implementation:

Equitable: Prioritize strategies that remove barriers to transportation electrification, particularly for disproportionately impacted communities.

Innovative: Prioritize innovative strategies including pilot projects, policy, and programs that realize new ways to support transportation electrification. Consider the potential to replicate and apply innovative strategies throughout Boulder and in other communities.

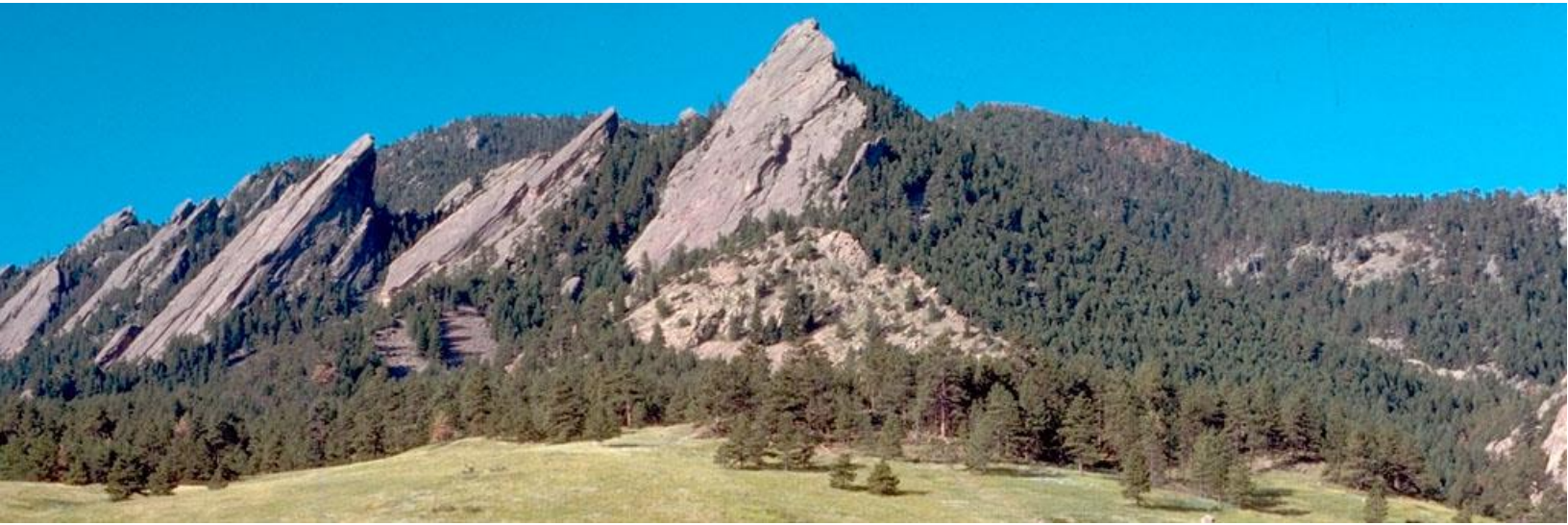
Integrated: Prioritize strategies that integrate multiple Advanced Transportation Modes and support a fully connected transportation system including first- and last-mile connections.

Versatile: Prioritize strategies that are flexible; incorporate opportunities to adjust based on observed results, shifting priorities, and changing conditions.



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Introduction: Boulder's Electric Mobility Plan



In November 2021, the City of Boulder and Xcel Energy came together to begin developing an Electric Mobility Plan for Boulder. This Plan builds on existing policy and significant work already undertaken to electrify mobility in Boulder and reinforces the city and Xcel Energy's commitment to partner on strategic electric mobility initiatives over the next two years and beyond.

The Plan was developed by a team of representatives from Boulder's Climate Initiatives and Transportation departments, as well as Xcel Energy staff. The focus is intentionally broader than electric vehicles alone. Instead, the Plan is intended to situate and connect the city's electric vehicle goals within Boulder's overarching vision for a fully integrated zero emissions mobility network.

The components of this Electric Mobility Plan include:

- **Boulder's Electric Mobility Policy Context:** A look at existing City of Boulder plans and policies related to electric mobility.
- **Where We Are Now:** A review of Boulder's electric mobility baseline and relevant community characteristics.
- **Where We Are Going:** Boulder's electric mobility goals, focus areas, and cross-cutting themes.
- **Our Short-Term Priorities:** Strategies within each focus area that will be implemented in 2022 - 2025 and contribute to the achievement of Boulder's electric mobility goals.
- **How We Will Stay on Track:** The City of Boulder and Xcel Energy's commitment to implement the strategies identified in this Plan, and to ongoing tracking and monitoring.
- **Appendix I:** Xcel Energy EV Programs.
- **Appendix II:** References

Boulder's Electric Mobility Policy Context



This Electric Mobility Plan does not establish any original policy or create new goals for the city. Rather, the Plan is designed to identify, consolidate, and operationalize strategies that support existing policy direction that have been established through public process and adopted by Boulder City Council, and can be advanced through the City of Boulder and Xcel Energy's Partnership. Boulder's Electric Mobility Plan has been developed in the context of Xcel Energy's Transportation Electrification Plan - to identify opportunities for the city and Xcel Energy to collaborate on initiatives that further Boulder's priorities.

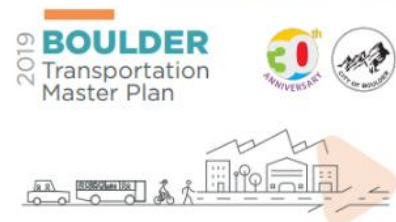
The primary plans and policies informing the development of this Plan are summarized below and also highlighted within each strategy.

City of Boulder Policy and Plans

Transportation Master Plan (2019)

The [Transportation Master Plan](#) (TMP) is the guiding policy document for the City of Boulder's transportation system. The vision of the TMP is to "create a safe, accessible and sustainable multimodal transportation system that connects people with each other and where they want to go" (City of Boulder, 2019). The TMP identifies initiatives designed to help Boulder achieve this vision and create a transportation system that will:

- Be safe
- Be equitable
- Be reliable
- Provide travel choices
- Support clean air and Boulder's climate commitment



The TMP includes policies designed to support the electrification of a wide range of mobility options while improving the accessibility, connectivity, and functionality of equitable transportation in Boulder. The TMP is also aligned closely with the [Boulder Valley Comprehensive Plan](#) (City of Boulder and Boulder County, 2021)

Climate Action Plan Update (2021)

The [2021 Climate Action Plan Update](#) renewed Boulder’s commitment to achieving carbon neutrality and set out the city’s intent to accelerate and amplify climate action at the regional, national, and global scale (City of Boulder, 2021).

The update created a new sense of urgency for climate action and established the community’s goals to:

- Reduce emissions 70% by 2030 against a 2018 baseline
- Become a Net Zero city by 2035
- Become a Carbon-Positive city by 2040¹

The Climate Action Plan includes an objective to “provide clean mobility solutions that meet community needs” and explicitly identifies two mobility targets:

- Zero emissions mobility options will be culturally, geographically, and economically diverse by 2035.



¹ Carbon-Positive means that an activity goes beyond achieving net zero carbon emissions to create an environmental benefit by removing additional carbon dioxide from the atmosphere (City of Boulder Update on Climate Action Plan, June 8 2021)

Electric Vehicle Goals

The City of Boulder has established electric vehicle goals both for the municipal fleet and the wider community. The transition to electric vehicles is intended to reduce greenhouse gas emissions and to improve access to transportation options for all community members. In 2020, Boulder City Council adopted a Resolution declaring Boulder a “GoEV City” and setting out the city’s pledge to work with the community on programs, policies, incentives, and regulatory approaches to electrify the transportation sector.

Boulder’s overarching electric vehicle goals are:

- Electrify all vehicles in the municipal fleet by 2030 ([City of Boulder EV Goals](#))
- Transition 30% of all vehicles within the city to zero emissions by 2030 and electrify all vehicles in Boulder by 2050 ([City of Boulder GoEV City Resolution](#))

While Boulder’s adopted electrification goals are specific to municipal and private motor vehicles, the city is also focused on electrifying transit vehicles, electric shared micromobility options such as e-bikes and scooters, and supporting the adoption of private e-bikes.

City of Boulder – Xcel Energy Partnership Agreement (2020)

In 2020, the City of Boulder and Xcel Energy entered into an Energy Partnership Agreement to set a new course for the community’s energy future (City of Boulder, 2022). At the center of Boulder and Xcel Energy’s partnership is a commitment to collaborate on local projects and programs that support a shared vision for zero emissions electricity and reduced natural gas and transportation emissions. In addition, the partners agree to identify and pursue specific initiatives that address the gap between Xcel Energy’s 80% carbon emissions goal and the Boulder community’s goal of 100% renewable or zero emissions electricity.

One focus area of the Partnership Agreement is on closing Boulder’s electricity-sector emissions gap. Zero emissions electricity provides the foundation for building and transportation sector emissions reductions that contribute to Boulder’s community-wide emission goals as described above.

Xcel Energy Carbon-Free Electricity and Transportation Electrification Plan

Pairing transportation electrification with renewable electricity will be critical to achieving Boulder’s community emissions goals.

Xcel Energy’s 2021-2023 Transportation Electrification Plan establishes a vision to enable one out of five vehicles in the areas served by Xcel Energy to be electric by 2030, and for all electricity to be carbon-free by 2050. In 2021, 39% of Xcel Energy’s Colorado electricity supply was generated from carbon-free sources (Xcel Energy, 2021) and that percentage is increasing. Research by the Union of Concerned Scientists showed that 94% of people in the United States live in an area where driving an EV produces fewer emissions than a gasoline-powered vehicle that achieves 50mpg (Union of Concerned Scientists, 2020). Xcel Energy’s Clean Energy Plan establishes a commitment and pathway to reduce carbon emissions from electricity supplied to Colorado by 85% from 2005 levels, and to deliver more than 80% of electricity from renewable sources by 2030 (Xcel Energy, 2022). Together, these commitments are anticipated to cut nearly 5 million tons of carbon emissions across 1.5 million electric vehicles in the areas served by Xcel Energy (Xcel Energy, 2019).

The Xcel Energy Transportation Electrification Plan (TEP) created a portfolio of EV initiatives, programs, and incentives to support EV purchase, charging infrastructure, and innovative pilot projects. TEP offerings are funded by Xcel Energy customers through a TEP rider that appears on monthly electricity bills. All Boulder customers are eligible to participate in Transportation Electrification Plan programs and the Boulder Electric Mobility Plan strategies are designed to leverage these funds. Xcel Energy will propose its 2024-2026 Transportation Electrification Plan in spring 2023. The knowledge and experience gained from the implementation of the current TEP, including in Boulder, will be used to inform development of the next plan.

Regional Transportation Electrification Plan for Boulder County Communities

In August 2021, representatives from local governments within Boulder County came together with key stakeholders - including business associations, state agencies and nonprofit organizations, and Xcel Energy - to develop a strategic plan to reduce greenhouse gas emissions through equitable transportation electrification. City of Boulder staff participated in the creation of the first [Regional Transportation Electrification Plan for Boulder County Communities](#) and will continue to contribute to ongoing implementation of strategies identified in the plan. Several of the strategies identified in the City of Boulder Electric Mobility Plan align closely with those included in the Regional Plan. A coordinated regional approach to implementation will help scale up and amplify efforts in the city.

Where We Are Now



In identifying opportunities for accelerated, collaborative, electric mobility action in Boulder, it is helpful to first understand the current level of adoption. Additionally, we must understand relevant community characteristics that could impact the approach to action going forward.

Electric Vehicle Adoption

Boulder has seen high rates of EV adoption compared to both the state of Colorado and the national average. The number of EVs on the road in Boulder zip codes has increased rapidly over the past 10 years, from just 74 in 2012 to 4,404 in October 2022. EVs accounted for approximately 5% of all vehicle registrations in Boulder, compared to an average light-duty EV adoption rate of approximately 1.4% statewide (Atlas Public Policy, 2022)². Just 0.4% of all registered vehicles in the US are EVs (Axios, 2022).

Figure 1 shows the increase in original EV registrations over time, along with the share of all vehicle registrations in Boulder zip codes. EVs accounted for over 10% of vehicle registrations in Boulder over the six months leading up to October 2022 (Atlas Public Policy, 2022). In contrast, approximately 4.6% of new vehicles registered in the US in May 2022 were electric (Axios, 2022).

² Percentage EV adoption calculated using “EVs on the road” from the EValuateCO dashboard October 2022 snapshot data and total 2021 vehicle registrations in Boulder - provided by the project management team (purchased from IHS Markit) and scaled up to account for one year of population growth.

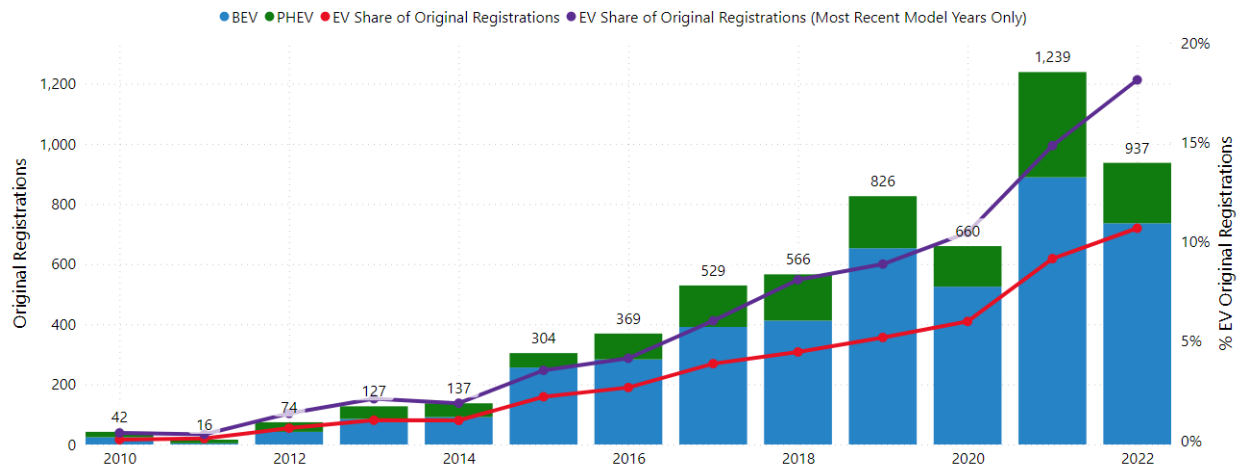


Figure 1. Original EV registrations in Boulder zip codes 2010 - October 2022. The bars show new battery-only (blue) and plug-in hybrid (green) vehicle registrations (measured on the left y-axis), while the (red) lines show new EVs as a share of all vehicle registrations (measured on the right y-axis) and of the most recent vehicle models (purple). An “original registration” is a vehicle that shows up in the State of Colorado database for the first time and could be either a new sale or a vehicle coming in from out of state (Atlas Public Policy, 2022).

Electric Vehicle Charging

The availability of public charging ports in Boulder is currently keeping pace with high levels of EV adoption. While 80% of EV owners do most of their charging at home, public Level 2 and DC fast charging stations ensure access for longer-distance commuters, visitors, those without access to home charging, and transportation services such as ride hailing and delivery fleets.

As shown in Figure 2, in February 2022, there were 376 total charging stations in Boulder zip codes, including 354 Level 2 ports and 22 DC fast charging ports (Atlas Public Policy, 2022). Even with high rates of EV adoption, Boulder currently exceeds the state average for number of charging ports per capita and number of ports per EV. Statewide there are 0.13 DC fast charging ports and 0.65 Level 2 charging ports per 1,000 people, while in Boulder those numbers are 0.17 and 2.68 respectively (Atlas Public Policy, 2022). Similarly, the Colorado average for number of EVs per Level 2 charging port is 18.13, while Boulder has one Level 2 charging port for every 12.44 EVs (Atlas Public Policy, 2022).

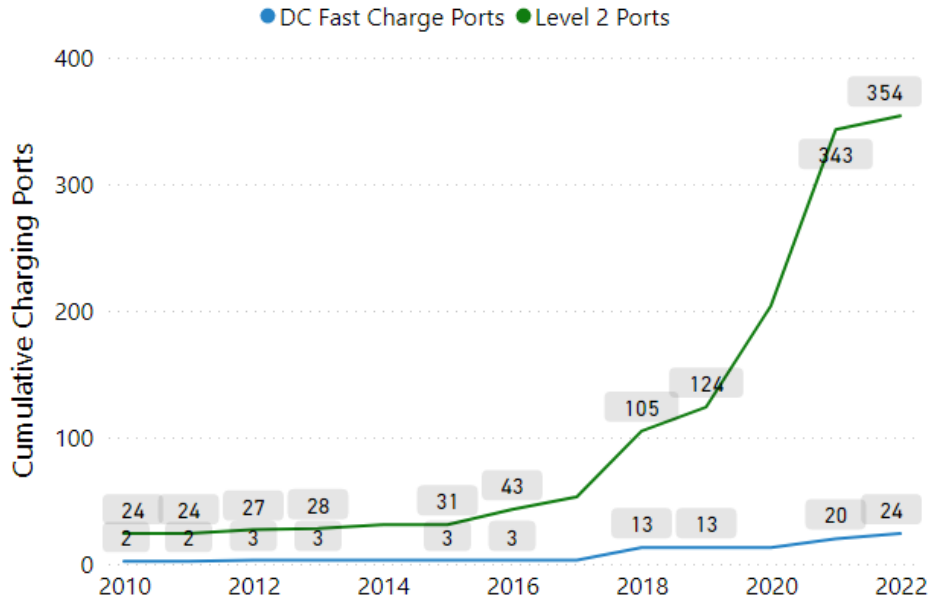


Figure 2. Level 2 and DC fast charging ports in City of Boulder zip codes (EValueCO dashboard)

Micromobility and Mode Share Diversity

Privately-owned and shared micromobility options, such as electric-assist bikes (e-bikes) and electric scooters (e-scooters) are an integral component of Boulder’s transportation system. Electric mobility extends beyond electric vehicles to prioritize a fully integrated, equitable transportation network that also embraces the use of smaller, less obtrusive modes of transportation. According to a report published by the North American Bike Share Association (NABSA), over 128 million trips were taken on shared micromobility options across North America in 2021, including 18.8 million e-bike trips and 62.2 million e-scooter trips (NABSA, 2021). It is estimated that shared micromobility trips avoided approximately 54 million pounds of carbon emissions by replacing motor vehicle trips. Pedal bikes reduce trip emissions by 100%, while e-bikes and e-scooters reduce emissions by an estimated 97% and 98% respectively (NABSA, 2021).

In Boulder, between August 2021 and August 2022, over 500,000 trips were taken on shared e-bikes and e-scooters combined (City of Boulder Ride Report, 2022).

In 2020, 48.5% of Boulder residents drove alone to work; a number significantly lower than the statewide figure of 73% (American Community Survey, 2020). However, the percent of regional single occupancy vehicle (SOV) trips by non-resident Boulder



employees continues to remain high, at around 80% (City of Boulder, 2018). Micromobility options, paired with electric transit for regional trips, may provide a viable solution to lower this percentage.

Today, a fairly large percentage of Boulder residents take transit, walk, bike, skate, or scoot to get to work or school, and to access goods and services. The planning for and promotion of privately-owned and shared micromobility, for both local and regional trips, holds great potential to significantly reduce car dependency, vehicle miles traveled (VMT), traffic congestion, and greenhouse gas emissions.

Community Characteristics and Equitable Access

While Boulder is a state and national leader in EV adoption rates, access to EVs has not been equitably distributed to date. 2019 research found that households earning less than \$100,000 per year represented 72% of gasoline vehicle purchases but only 44% of EV purchases (Muehlegger & Rapson, 2019). The same study found that Black and Latino car buyers represent 41% of gasoline vehicle purchases but only 12% of EV purchases and another study found that the median income of EV buyers in California was \$150,000 compared to \$90,000 for gasoline vehicle buyers (Turrentine, Tal, & Rapson, 2018).

Many factors, including cost, housing and commute characteristics, can impact individual and community access to EVs and EV charging. While many vehicle manufacturers are beginning to release lower-cost electric models, EVs typically carry a higher price tag than gas- and diesel-powered equivalents in 2022. With 33% of Boulder residents living in households with an annual income less than or equal to twice the federal poverty level³ (EPA, 2022) and 20% of people in Boulder living in poverty (American Community Survey, 2020), cost remains a significant barrier to EV ownership for many.

The high cost of housing in Boulder also creates a barrier to EV access and 53% of Boulder residents spend more than 45% of household income on housing and transportation, with the average household spending 43% of income on housing and transportation as shown in Figure 3 (Center for Neighborhood Technology, 2022). In addition to impacting individual access to EVs for those living in Boulder, the high cost of housing has the secondary effect of pushing much of Boulder's workforce outward to surrounding areas.

Boulder's concentration of businesses and services, combined with high home prices and a high cost of living means that many of the people employed within the city commute in from surrounding areas. As shown in Figure 4, in 2021 an estimated 60% of Boulder's commuters lived outside the city limits, based on labor force estimates and local survey data collected by the City of Boulder (City of Boulder, 2021). EV drivers with a longer commute are more likely to need charging away from home, increasing the demand for public and workplace charging, or alternative mobility solutions.

³ Note that many of those living below the poverty line within Boulder are likely students.

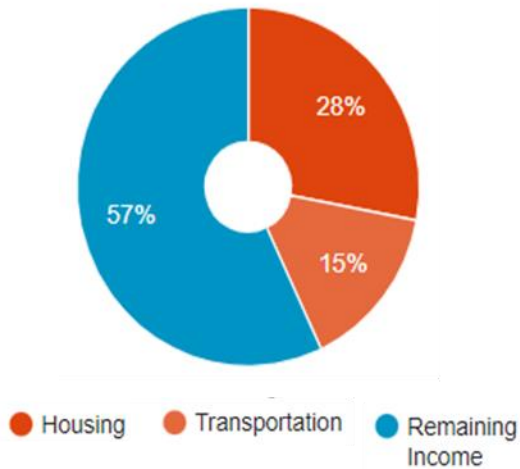


Figure 3. Housing and transportation spending as a percentage of household income in Boulder (Center for Neighborhood Technology, 2022).

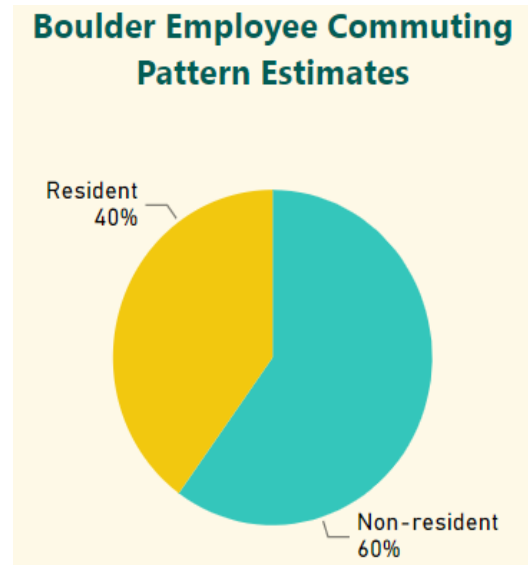


Figure 4. Estimated percentage of commuting within Boulder by residents and non-residents (City of Boulder, 2021).

Efforts to reduce transportation emissions and increase electric mobility within Boulder must therefore address barriers not only for the city’s residents but also for those in surrounding areas who travel to the city for work, services, and recreation. Xcel Energy’s Transportation Electrification Plan offers rebates of \$3,000 to \$5,500 to income-qualified customers for the purchase of new or used electric vehicles. The Transportation Electrification Plan also offers on-bill financing options and incentives for the installation of home charging, for residents of both single-family and multifamily homes, with additional incentives available for income-qualified customers.

Housing Characteristics

An estimated 80% of EV owners complete most or all of their charging at home. Due to the ease of plugging in while at home and the relatively low cost of residential electricity, access to home charging is an important driver to EV adoption. Therefore, housing type, parking access, and home ownership will influence who can easily drive an EV. Single-family and multifamily homes with off-street parking can most easily install EV charging. Single-family home renters and multifamily home renters/residents may need to negotiate with homeowners’ associations and landlords in order to install charging/get charging installed. Residents of all housing types that lack off-street parking may experience difficulty with accessing home charging and will therefore rely most heavily on public charging.

Renters and multifamily home residents also experience other challenges with installing home charging. For example, residents of multifamily homes may be reluctant to invest in improving property they do not own. Additionally, some renters do not directly hold and pay for electric utility accounts and are therefore less able to take advantage of utility incentives for home charging. Finally, property owners may have little financial motivation to install charging infrastructure for tenants (although demand for EV charging from tenants is growing).

In Boulder, 42% of homes are owner-occupied and single-family homes make up about 41% of city housing structures (American Community Survey, 2020). This suggests that while many

residents will have relatively easy access to home charging, there is still a significant portion of households (that rent or live in multifamily residences) may have to overcome barriers in order to charge at home.

Moreover, houses built before 1970 (about 20% of homes in Boulder) may need electrical upgrades in order to meet code and standards to install home charging. Xcel Energy's Transportation Electrification Plan and the federal Inflation Reduction Act offer incentives to help reduce the cost of charging infrastructure upgrades (Plug in America, 2022).

Current Projects and Programs

The City of Boulder and the Boulder community have long demonstrated state and national leadership on climate and sustainability work. This plan builds on not only the policy and planning context described earlier in this document, but also on many projects and programs that are already underway in Boulder. Some of the existing efforts not covered in the 2022-2024 strategies below include:

- **Electric Fleet:** The City of Boulder leads by example with a vehicle fleet that includes 40 electric vehicles, with plans to electrify 200 vehicles by 2030.
- **City-Owned Charging Stations:** The City of Boulder currently owns and operates 54 public level 2 charging ports across the community.
- **Colorado Energy Office Fast Charge Corridor:** The City of Boulder partnered with ChargePoint to build four fast charge stations in downtown Boulder as part of the statewide fast charge network.
- **Vehicle-to-Building Pilot:** A partnership between Fermata Energy and the City of Boulder to install bidirectional charging at the North Boulder Recreation Center. Boulder was recognized for this innovative project with the Smart Cities North America Award.
- **Electric Transit:** Four electric buses in operation on the HOP route, operated in partnership with Via Mobility Services, with a goal to electrify the HOP entire fleet by 2030.
- **Electric Shared Micromobility Program:** Boulder's Shared Micromobility Program is comprised of 300 electric assist bikes (e-bikes) through BCycle and 300 electric scooters (e-scooters) through Lime. Lime has been operating in a limited-service area in east Boulder since August 2021. City-wide expansion is proposed for 2023. It is anticipated that both BCycle and Lime will significantly increase their respective fleet sizes in 2023 and beyond, commensurate with demand.
- **Electric CarShare:** Colorado CarShare is a nonprofit carshare provider offering more than 55 shared vehicles in the Denver metro area and beyond, including electric vehicle options within Boulder. Colorado CarShare provides subsidies for low- to medium-income communities.
- **Electric Vehicle Codes:** Boulder's Energy Conservation Code requires the installation of EV ready, capable, installed charging spaces for residential and commercial new construction. EV parking is enforced via Boulder's Municipal Code.

Where We Are Going



Goal Alignment

To help guide the planning process and plan implementation, the Planning Team focused on furthering existing or planned goals, policies, and projects to accelerate electric mobility adoption, as well as solutions to meet the City of Boulder and Xcel Energy's transportation electrification goals.

The GoEV City resolution established by the City of Boulder committed to having 30% of all its vehicles zero-emission vehicles by 2030. To achieve that goal, an estimated 29,300 registered vehicles would need to be zero-emissions by 2030. The number of EV registrations for every 1,000 vehicles, to achieve 30% adoption in 2030 (when accounting for growth in total vehicle registrations in line with population growth), is shown in Figure 5.

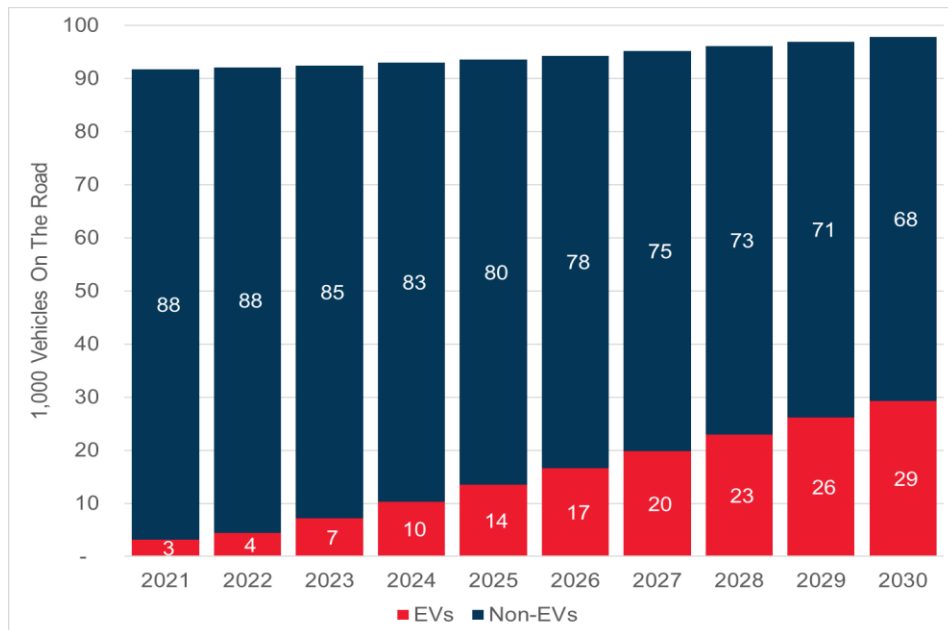
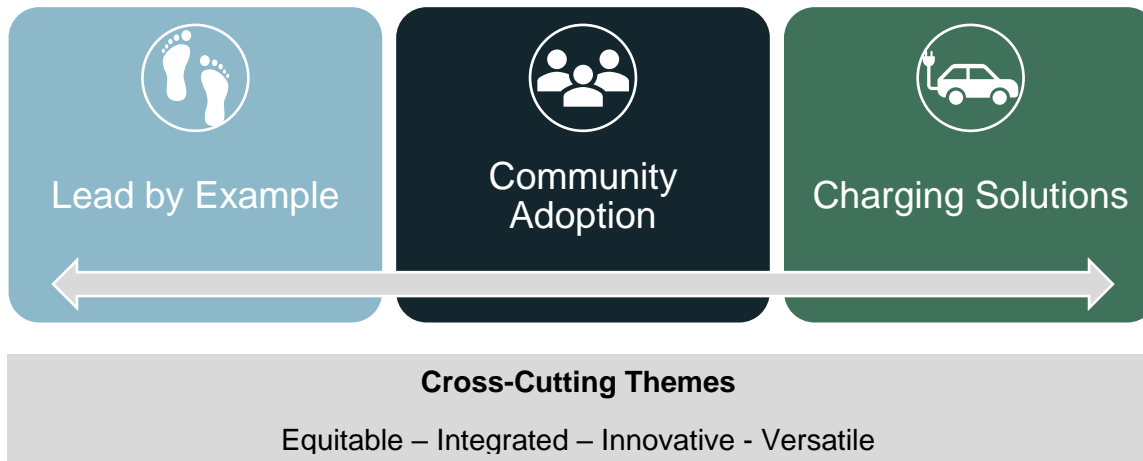


Figure 5. EV registrations (1,000 vehicles) required, to meet Boulder's 30% EV adoption by 2030

It is important to note that current transportation electrification is not equitably distributed, and skews toward higher-income residents (as noted in the Community Characteristics and Equity section). In addition to privately owned vehicles transitioning to electric, strategies in this plan focus on increasing electrified mobility options for those who currently face barriers to driving and owning an EV, as well as working toward a scenario where the benefits of electrified mobility can be enjoyed by all Boulder residents and visitors.




Focus Areas and Cross-Cutting Themes

To achieve a community-wide commitment to transportation electrification, the EV Action Team identified the following focus areas and cross-cutting themes to prioritize strategies and resources.



Focus Areas

These focus areas help organize the plan strategies in order to help achieve the plan vision and goals.

| | |
|--|---|
| <p>Lead By Example</p>  | <p>Municipal operations prioritize electrified mobility options for fleet and employee travel, as well as installation of the infrastructure necessary to support those operations. The fleet policy requires purchase of an electric vehicle where financially and operationally feasible.</p> |
| <p>Community Adoption</p>  | <p>Access to electric mobility options for all Boulder residents and businesses.</p> |
| <p>Charging Solutions</p>  | <p>Removing barriers for charging at home, providing shared-use charging hubs for fleets and EV drivers, and expanding electrified mobility charging options.</p> |

Cross-Cutting Themes

These themes show up in each focus area - as both considerations taken during the planning process and as key components of implementation.

- **Equitable:** Prioritize strategies that remove barriers to transportation electrification, particularly for disproportionately impacted communities.
- **Integrated:** Prioritize strategies that integrate multiple Advanced Transportation Modes and support a fully-connected transportation system, including first- and last-mile connections.

- **Innovative:** Prioritize innovative strategies including pilot projects, policy, and programs that realize new ways to support transportation electrification. Consider the potential to replicate and apply innovative strategies throughout Boulder and in other communities.
- **Versatile:** Prioritize strategies that are flexible and incorporate opportunities to adjust, based on observed results, shifting priorities, and changing conditions.

Electric Mobility Impact

The strategies included in this plan were selected to both advance electric transportation in Boulder and contribute to overarching transportation emissions reduction. Strategies were prioritized with the cross-cutting themes described above in mind. These strategies also aim to create a more resilient transportation system while increasing equitable outcomes by removing barriers to affordability and access.

Successful implementation of this plan by 2030 will result in:

- Estimated 105,900 MTCO₂e GHG emissions avoided annually⁴
- 29,300 EVs on the road

⁴ Based on light-duty vehicle assumptions for grams of CO₂ per mile and vehicle miles traveled. This accounts for the expected emissions factor of Xcel Energy electricity in 2030.

Our Short-Term Priorities

Strategy Introduction / Summary

For each focus area, the Planning Team identified the following priority strategies for implementation in 2022-2024, along with some additional strategies for longer-term implementation.

| Focus Area | Strategy |
|--------------------|---|
| Lead By Example | <p><u>2022 - 2024</u> L-1: City Fleet Electrification & EV Supply Infrastructure L-2: City of Boulder Work Travel Trips</p> |
| Community Adoption | <p><u>2022 - 2024</u> CA-1: Electric Vehicle Outreach and Communications CA-2: Micromobility Incentives</p> |
| | <p><u>2024 - 2030</u> <i>EV Resale Market</i> <i>Workforce Development</i> <i>Zero or Low-Emissions Zones</i> <i>Rideshare and Vanpool Electrification</i></p> |
| Charging Solutions | <p><u>2022 - 2024</u> CS-1: Regional Fleet Charging Hub CS-2: Vehicle-to-Building CarShare Pilot CS-3: Community Charging Hub(s) CS-4: Curbside / Neighborhood Charging Policies and Programs CS-5: Multifamily Charging Incentives for Income-Qualified Customers.</p> |

Focus Area: Lead by Example

This focus area aims to position the City of Boulder as a leader for its residents, commuters, and visitors. Strategies in this focus area develop opportunities for the City of Boulder to reduce emissions associated with its own municipal fleet. In addition, transitioning the municipal fleet will increase the visibility of EVs within the community, reinforce the city's commitment to its goals, and ensure that the city is demonstrating actions and solutions that community members and businesses can take to increase the adoption of electric mobility. Successes and lessons learned by the City of Boulder can further foster electrified mobility, with peer sharing with other Boulder County communities through efforts such as the Boulder County Regional Transportation Electrification Plan.

Priority strategies for this focus area include municipal fleet electrification and transitioning City of Boulder staff work travel to alternative transportation options.

The following strategies were identified as priorities for years 2022-2024. Detailed action plans were developed for strategies already underway and for those to be implemented in the next 1-2 years (short term).

L-1: City Fleet Electrification and EV Supply Infrastructure

This strategy is aimed at continuing and accelerating the electrification of City of Boulder fleet vehicles. The city has long recognized the importance of leading by example and, in 2019, the city partnered with Sawatch Labs to complete a fleet electrification plan. At the end of 2021, the City of Boulder had 32 fleet EVs, accounting for approximately 50-60% of the city's total non-public safety light-duty fleet.

The City of Boulder fleet policy requires all staff to evaluate the viability of electrification or alternative options, prior to purchasing a new city vehicle, including:

- Evaluation of historical vehicle usage data (e.g., typical routes, time of use, average daily and annual mileage, four-wheel drive, towing, and truck-bed hauling utilization).
- Demonstration of why vehicle pooling cannot meet work requirements.

City departments are required to purchase EVs whenever financially and operationally viable, with battery electric vehicles being the preferred option, and plug-in hybrid vehicles the second option if battery electric options are not viable. If plug-in electric options are prohibitively expensive or will not meet operational needs, an exception may be granted by the Fleet Manager.

To support increased fleet electrification, charging infrastructure is currently procured based on where the vehicle is parked and the supporting electrical infrastructure at the site.

The next phase of fleet electrification will focus on ongoing replacement of light-duty fleet vehicles, pilot projects that explore the viability of emerging medium- and heavy-duty electric vehicles and technology to support essential municipal functions such as snow plowing and police department operations. This work will also evaluate alternative options for charging infrastructure, including shared and public charging.

| Existing Policy Context | |
|---|--|
| <p>City of Boulder Policy and Plans</p> <ul style="list-style-type: none"> ▪ Fleet Electrification <ul style="list-style-type: none"> ○ 35% of vehicles by 2030, with additional vehicles electrified as more models become available. ○ Adoption of plug-in electric vehicles and demonstration of new technology (2019 TMP). ○ City of Boulder Fleet Policy. <p>Alignment with Boulder County Regional Transportation Electrification Priorities</p> <ul style="list-style-type: none"> ▪ Share with, and learn from other communities, successes and challenges. | |
| Metrics of Success | |
| <ul style="list-style-type: none"> ▪ Percentage of light-duty electric vehicles in municipal fleet ▪ Number of medium-, heavy-duty, and specialized electric vehicles in municipal fleet | |
| Roles and Responsibilities | |
| <p>City of Boulder Role: Lead</p> <ul style="list-style-type: none"> ▪ Administer and enforce city fleet policy. ▪ Identify opportunities for pilot projects. <p>Contact: Fleet Manager (Tristano Greco), Construction Project Analysis (Cam Johnson)</p> | <p>Xcel Energy Role: Support</p> <ul style="list-style-type: none"> ▪ Potential funding to support EV infrastructure serving municipal fleet vehicles. ▪ Potential funding to support innovative pilot projects through Partnerships, Research, and Innovation (PRI) offering. <p>Contact: Brodie Ayers</p> |
| Key Implementation Steps and Timeline | |
| Action Steps | Timeline |
| 1. Continue to install charging sufficient to meet the demand of fleet vehicles and pursue opportunities for innovative charging solutions such as central fast charging hubs and/or bidirectional charging. | Ongoing |
| 2. Continue implementation of the city's fleet policy to purchase electric vehicles whenever financially and operationally viable. | Ongoing |
| 3. Explore opportunities to pilot emerging technologies. | Ongoing |
| Technical Feasibility and Considerations | |
| <ul style="list-style-type: none"> ▪ Lack of vehicle models currently available to meet all city operational needs (e.g., snow plowing, police department (PD)). ▪ Increased complexity associated with installing central fast charging hubs to meet a variety of fleet needs. | |
| Impact | |
| <p>EV Adoption and GHG Emissions</p> <ul style="list-style-type: none"> ▪ Reduce greenhouse gas emissions associated with municipal fleet operations. <p>Equity</p> <ul style="list-style-type: none"> ▪ Potential to reduce air quality burden. | |

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| <p>Resilience</p> <ul style="list-style-type: none"> ▪ Potential to explore opportunities for bidirectional charging. |
| <p>Funding Considerations</p> |
| <p>Funding Needs</p> <ul style="list-style-type: none"> ▪ Funding to install charging infrastructure. <ul style="list-style-type: none"> ▪ In some cases, funding may be needed to cover incremental cost of electric vehicles. <p>Potential Funding Sources</p> <ul style="list-style-type: none"> ▪ Xcel Energy Transportation Electrification Plan ▪ Potential for state funding through Clean Fleet Vehicle & Technology Project Portfolio identified in the Clean Fleet Enterprise Ten-Year Plan |

L-2: City of Boulder Work Travel Trips

Explore opportunities to reduce greenhouse gas emissions and realize financial savings while improving mobility options for City of Boulder employee work travel trips. This strategy involves taking a holistic approach to reviewing employee work trips, including evaluating the use of existing central pool vehicles and opportunities to transition to shared electric vehicles. This strategy also recommends identification and implementation of opportunities to encourage alternative transportation such as transit, walking or biking, or shared electric micromobility. City of Boulder municipal employees already receive a variety of benefits to encourage the use of transportation options, including an RTD EcoPass, Boulder BCycle membership, and vanpool subsidies, rather than a single-occupant vehicle.

| | | |
|--|--|---|
| <p>Existing Policy Context</p> | | |
| <p>City of Boulder Policy and Plans</p> <ul style="list-style-type: none"> ▪ Fleet Electrification <ul style="list-style-type: none"> ○ 100% fleet electrification by 2030 (GoEV City Resolution) ○ Adoption of plug-in electric vehicles and demonstration of new technology (2019 TMP) <p>Alignment with Boulder County Regional Transportation Electrification Priorities</p> <ul style="list-style-type: none"> ▪ CA: Employee EV training (2024-2030 strategy) | | |
| <p>Metrics of Success</p> <ul style="list-style-type: none"> ▪ City budget financial savings ▪ Greenhouse gas emissions reduction | | |
| <p>Roles and Responsibilities</p> | | |
| <p>City of Boulder Role: Lead</p> <ul style="list-style-type: none"> ▪ Inventory and evaluate City of Boulder employee trips and utilization of existing pool vehicles. ▪ Engage city employees to determine transportation preferences. | <p>Xcel Energy Role: Support</p> <ul style="list-style-type: none"> ▪ Potential funding to support electric car share at city facilities through Electric Vehicle Infrastructure (EVSI) and Partnerships, Research and Innovation (PRI) offerings. | <p>Other Partners</p> <ul style="list-style-type: none"> ▪ Private car share ▪ Ride share companies ▪ Micromobility companies ▪ EV charging installers and providers |

| | | |
|--|---|------------------------|
| <ul style="list-style-type: none"> Coordinate with private mobility companies. <p>Contact: Fleet manager (Tristano Greco), Departmental Fleet Owners</p> | <p>Contact: Brodie Ayers</p> | |
| <p>Key Implementation Steps and Timeline</p> | | |
| <p>Action Steps</p> | | <p>Timeline</p> |
| <p>1.</p> | <p>Inventory and evaluate common employee trips including utilization of existing City of Boulder pool vehicles.</p> | <p>2023</p> |
| <p>2.</p> | <p>Review Alternatives to Vehicle Ownership results from the city’s fleet electrification analysis. Analyze changes to fleet since the analysis was completed in order to confirm that results remain consistent.</p> | <p>2023</p> |
| <p>3.</p> | <p>Identify opportunities to replace individual vehicle use with transit, micromobility, or shared electric vehicles (i.e., where vehicles are currently underutilized and/or trips align with existing transit or micromobility infrastructure).</p> | <p>2023</p> |
| <p>4.</p> | <p>For vehicles that are good candidates for replacement based on the 2019 fleet electrification analysis, engage employees to determine preference for city-ownership of pooled vehicles or privately-operated car share, ride share, transit, or micromobility.</p> | <p>2023</p> |
| <p>5.</p> | <p>Identify and coordinate with private mobility companies around business case feasibility, potential vehicles, and locations for shared micromobility and/or electric vehicles.</p> | <p>2023</p> |
| <p>6.</p> | <p>City of Boulder and Xcel Energy coordination with private mobility companies, to determine site suitability, infrastructure needs, and available funding.</p> | <p>2023</p> |
| <p>Technical Feasibility and Considerations</p> | | |
| <ul style="list-style-type: none"> Business case model to ensure that mobility is available for city staff when needed. Identification of site host locations accessible to city staff. | | |
| <p>Impact</p> | | |
| <p>EV Adoption and GHG Emissions</p> | | |
| <ul style="list-style-type: none"> Reduce greenhouse gas emissions associated with municipal fleet operations. | | |
| <p>Funding Considerations</p> | | |
| <p>Funding Needs</p> | | |
| <ul style="list-style-type: none"> Funding may be required to support the purchase of EVs (for shared city-owned fleet vehicles or private car share and ride share vehicles), charging infrastructure by a private car share or ride share company. Funding required to support the use of carshare vehicles by city employees. | | |
| <p>Potential Funding Sources</p> | | |
| <ul style="list-style-type: none"> State funding through Community Accelerated Mobility Projects identified in the Community Access Enterprise Ten--Year Plan | | |

Focus Area: Community Adoption

This focus area aims to encourage Boulder residents to purchase, lease, or otherwise choose to use electrified mobility rather than a gas-powered vehicle. While the Charging Solutions focus area supports community EV adoption through infrastructure, this focus area directly addresses barriers that prevent residents from considering electrified mobility in the first place. Priority strategies for this focus area include broad education and outreach efforts to promote EVs and other electrified mobility, incentives to reduce the cost of electrified mobility, and EV workforce development.

Even with the progress and uptake of electrified mobility to date, there are still many barriers to electrified mobility, including the upfront cost of purchasing an EV, as well as misconceptions about EVs. In a 2020 Colorado study, 66% of respondents who drive EVs indicated that they have a fear of running out of EV charge before reaching their destinations, even though 80% drive their primary vehicle 30 miles or less—per day - well within the typical EV charge range (E-Source, 2020). Education and outreach need to be paired with solutions that reduce the purchase price of EVs. The same Colorado study found that 51% of respondents expect to pay less than \$25,000 for their next vehicle, which is less than the average price of new and used vehicles in Colorado as well as less than the average sticker price of most available EVs (Svaldi, 2022) (Kelley Blue Book, 2022). The study also found that 35% of respondents expect to purchase their next vehicle from the used market, which is currently lacking in EV availability.

Widespread electrified mobility adoption will require a transformational change at a broader scale than within the influence of a municipality, including a large-scale experienced and trained workforce or a resale market for EVs. However, there are steps and strategies the City of Boulder can take and implement to begin building a local network.

The following strategies were identified as priorities for years 2022-2030. Detailed action plans were developed for strategies already underway and those to be implemented in the next 1-2 years (short term). Strategies identified as longer-term priorities will need to be developed during a plan update.

CA-1: Electric Vehicle Outreach and Communications

Develop and update "One Stop Shop" for outreach and education materials to address misunderstandings, increase awareness of EV initiatives, and encourage community adoption. This strategy will ensure that needed and accurate education materials are accessible and available in multiple languages. In addition to developing materials, an awareness campaign will inform audiences about the materials. The campaign will engage and coordinate with local stakeholders and community ambassadors to disseminate information.

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| Existing Policy Context |
| Alignment with Boulder County Regional Transportation Electrification Priorities <ul style="list-style-type: none">▪ Boulder County Regional EV Plan CA-1: Regional community outreach.▪ State of Colorado has developed communication and education collateral at EVCO.Colorado.Gov that the Boulder County Regional TE implementation subgroup will share with communities. |
| Metrics of Success |
| <ul style="list-style-type: none">▪ Website page views▪ Social media impressions |

| Roles and Responsibilities | | |
|--|--|--|
| <p>City of Boulder Role: Lead</p> <ul style="list-style-type: none"> As appropriate, City of Boulder staff will implement the Boulder County Regional Transportation Electrification Plan outreach and educational materials. As appropriate, City of Boulder staff will customize and use the State of Colorado and regional collateral. <p>Contact:</p> <ul style="list-style-type: none"> Matt Lehrman | <p>Xcel Energy Role: Support</p> <ul style="list-style-type: none"> As appropriate will share information and collateral about Xcel Energy EV programs. Support development or customization of outreach materials and awareness campaign. <p>Contact:</p> <ul style="list-style-type: none"> Iffie Jennings Partners in Energy | <p>Other Partners</p> <ul style="list-style-type: none"> State of Colorado developing education and outreach materials |
| Key Implementation Steps and Timeline | | |
| Action Steps | | Timeline |
| 1. | Review state’s outreach and education materials when they are released. | 2022 |
| 2. | Determine if separate website is needed, consider the information and materials that would be included, consider framework to organize information and materials, engage local organizations to inform what materials are most needed. | 2023 |
| 3. | If needed, design material and/or website to host information. Coordinate an awareness campaign about the release of the materials. | 2023 |
| 4. | Coordinate with local organizations to disseminate information. | 2023 |
| Technical Feasibility and Considerations | | |
| <ul style="list-style-type: none"> Will need regularly scheduled updates with the most current information, incentives, program offerings. Materials may need to be translated. | | |
| Impact | | |
| <p>EV Adoption</p> <ul style="list-style-type: none"> Outreach and education materials will provide accurate information about electric mobility leading to better informed decision making for targeted audience. <p>Equity</p> <ul style="list-style-type: none"> Reliable, accurate information will be easy to access and refer to. Coordinating with local organizations will support equitable dissemination of information. | | |
| Funding Considerations | | |
| <p>Funding Needs</p> <ul style="list-style-type: none"> Funding potentially needed for material creation, website design, translation services. | | |

CA-2: Micromobility Incentives

Explore the potential to provide incentives that encourage community adoption of electric micromobility options, for example e-bike purchase rebates, incentives to participate in shared micromobility programs. This strategy will encourage transportation options that reduce single occupancy vehicle trips and greenhouse gas emissions.

| Existing Policy Context | | |
|---|---|---|
| <p>City of Boulder Policy and Plans</p> <ul style="list-style-type: none"> ▪ Transportation Master Plan: Explore e-bike incentives and shared micromobility options <p>Alignment with Boulder County Regional Transportation Electrification Priorities</p> <ul style="list-style-type: none"> ▪ Boulder County Regional EV Plan 2024-2030: Equitable E-Bike Programs | | |
| Metrics of Success | | |
| <ul style="list-style-type: none"> ▪ Shared micromobility program participation ▪ Uptake of micromobility incentives if local program developed ▪ Impact of incentives (percentage of people receiving incentives who would not otherwise have made a purchase) | | |
| Roles and Responsibilities | | |
| <p>City of Boulder Role: Lead</p> <ul style="list-style-type: none"> ▪ Research existing incentive programs. ▪ Design incentive program with input from community. ▪ Administration of local incentives and/or support for regional administration of incentives. <p>Contact:</p> <ul style="list-style-type: none"> ▪ David Kemp | <p>Xcel Energy Role: Support</p> <ul style="list-style-type: none"> ▪ Support outreach of local incentives and/or regional incentives. <p>Contact:</p> <ul style="list-style-type: none"> ▪ Partners in Energy | <p>Other Partners</p> <ul style="list-style-type: none"> ▪ Shared micromobility operators ▪ Community-Based Organizations ▪ Center for People with Disabilities |
| Key Implementation Steps and Timeline | | |
| Action Steps | | Timeline |
| 1. | Research existing programs and opportunities for model programs, for example Denver. | 2023 |
| 2. | Engage residents and other partners and findings of research to inform development of micromobility options. | 2023 |
| 3. | Design program that creates incentives for individual and/or shared micromobility such as e-bikes. | 2023 |
| 4. | Administer program. | 2024 |
| 5. | Evaluate program to ensure it is meeting intended outcomes and goals. | 2024 |

Technical Feasibility and Considerations

- Design of program can encourage more equitable outcomes.
- Infrastructure needed for biking applies to e-bikes – bike lanes, bike racks, bike repair stations.
- Potentially need charging infrastructure for e-bikes.

Impact

EV Adoption and GHG Emissions

- Increasing affordable electric micromobility options, leading to decreased emissions.

Equity

- Micromobility expands electric mobility options available to all community members.

Resilience

- Expanding the diversity of advanced transportation options supports community vitality and resilience.

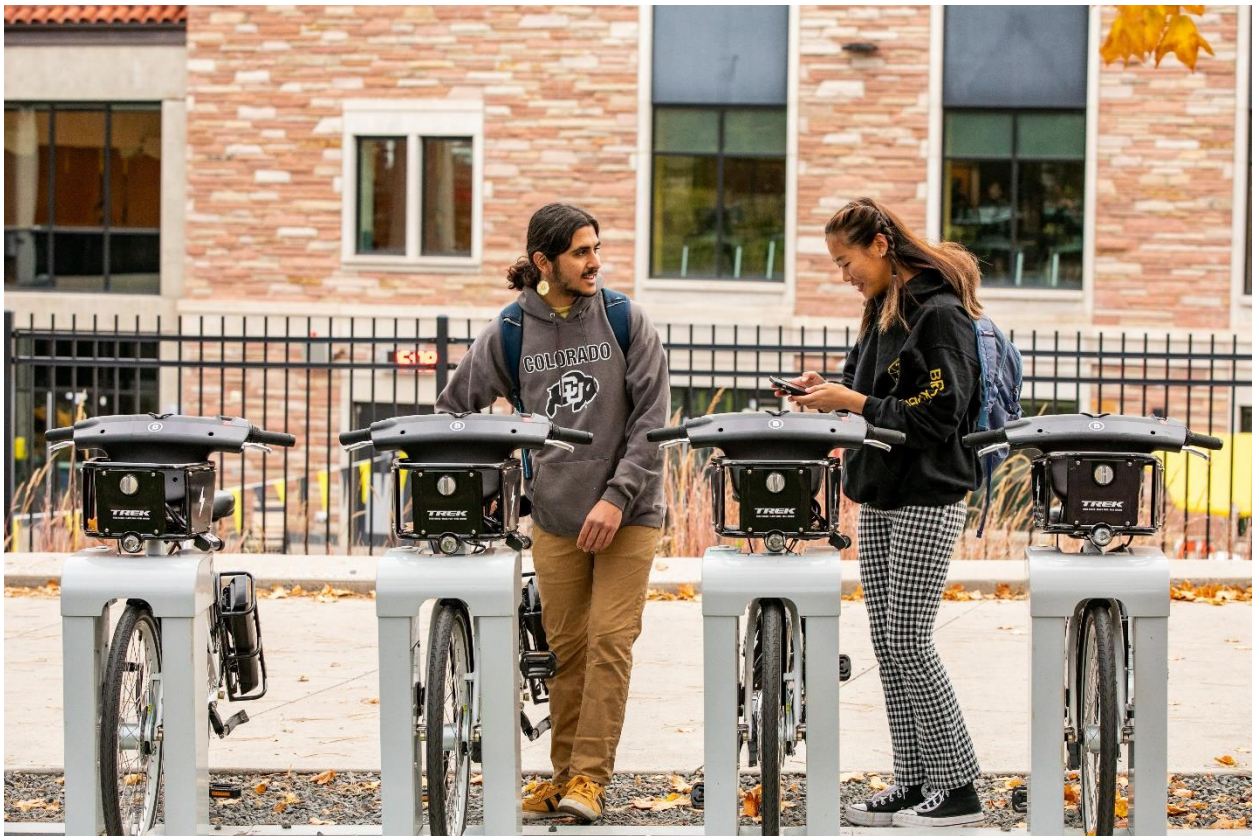
Funding Considerations

Funding Needs

- Funding required for the incentives for micromobility options.

Potential Funding Sources

- Colorado Energy Office (CEO) can provide Colorado e-bike funding
- Potential to include in 2024-2026 Transportation Electrification Plan



Strategies for Future Consideration (2024 – 2030)

EV Resale Market

Develop programs that support and promote a local resale market for previously used EVs, such as engagement with vehicle dealerships and other alternative channels for selling used vehicles. In 2019, over 70% of vehicles purchased or leased in the US were used, and the average price of a used vehicle was \$20,600 compared to \$38,003 for a new vehicle (US Department of Transportation, 2022). Developing a robust resale market for EVs will be critical to enhancing the affordability and accessibility of EV adoption. While the availability of used EVs has been limited to date, as more EVs become available for resale it will be critical to develop this market sector.

Workforce Development

Support initiatives to increase access to green-collar jobs that support EVs and associated infrastructure. These jobs may include mechanics and electricians who specialize in EVs and charging infrastructure. Focus on efforts that benefit: 1) disadvantaged workers, who often experience difficulty accessing workforce pipelines, and/or 2) workers from local, under-resourced and underemployed communities. Promote existing workforce development offerings and support development of new offerings as needed, in partnership with the Boulder County Regional EV Plan Implementation Team.

Zero- or Low-Emissions Zones

Zero- or low-emissions/clean air zones restrict or deter combustion vehicles from entering an area in order to advance zero emission mobility, including zero-emission vehicles, biking/e-biking, and walking. Policies must consider equity impacts in order to avoid unintended consequences, such as shifting pollution to disproportionately impacted areas, and may apply to all modes or may target vehicles with significant particulate emissions, such as medium- and heavy-duty trucks and buses. Cities often begin clean air zones within a core center of the city and expand the area over time, such as expanding out to wide ring roads.

Rideshare and Vanpool Electrification

Partner with transportation network companies (TNCs) and Vanpool companies to increase EV access for rideshare and vanpool drivers.

Uber and Lyft have already committed to zero-emission operations by 2030, but local jurisdictions still have important roles to play in the rideshare space. They can require TNCs to drive only EVs if the company wants to operate within the jurisdiction (established as part of the permitting/licensing process), impose volume caps on ride-hailing vehicle licenses while exempting electric ride-hailing vehicles (and, over time, license only EVs), provide differential taxes or fees to encourage EVs, or provide subsidies for rideshare EVs.

The City of Boulder currently partners with Enterprise to support vanpool access for all residents and also provides additional support for municipal employees, helping provide a convenient and affordable alternative to single occupancy vehicle travel. The city may consider advocating for, incentivizing, or requiring electrification of the vanpool fleet. These requirements may be enacted in conjunction with zero emission zones and other fleet electrification standards. The City of Boulder can also support the deployment of zero emission TNC and vanpool vehicles with charging infrastructure policies and with curbside management strategies.

Focus Area: Charging Solutions

This focus area aims to increase charging access for individuals and fleets as well as to pilot innovative new technologies that support a fully integrated zero emissions transportation network. Strategies in this focus area include the creation of new charging models for individual and fleet EVs, while also offering alternatives to private vehicle ownership and exploring EV benefits for energy resilience and grid management. Strategies include community and regional fleet charging hubs, curbside and neighborhood charging policies to serve those without access to home charging and for vehicles such as ride hailing and delivery fleets, and incentives to encourage income-qualified multifamily property owners to install charging at those locations.

Establishing a range of charging options and incentives will encourage more EV adoption from residents who may face higher barriers to home charging access. Moreover, as fleets begin to electrify, and need additional charging before completing their operations and returning to their depot or home base, regional fleet charging hubs may need to be utilized. The City of Boulder is poised to develop innovative solutions that increase the feasibility for more fleets and individuals to electrify vehicles.

Charging Solutions Strategies

The following strategies were identified as priorities for years 2022-2024. Detailed action plans were developed for strategies already underway and those to be implemented in the next 1-2 years (short term).

CS-1: Regional Fleet Charging Hub

This strategy will move forward existing efforts to develop a regional fleet electric transit bus and vehicle charging and maintenance facility that supports local and regional transit needs and advances sustainability goals. The regional fleet charging hub is a partnership between the City of Boulder, CU Boulder, Boulder Valley School District, and Xcel Energy. Progress is already underway, including development and signature of a Memorandum of Understanding between the partners, purchase of a Via Mobility site for the facility, and placement of an order for electric buses. The partners continue to work together to identify funding sources for the charging hub.

This innovative project may serve as a demonstration project that could be emulated by other communities.

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| Existing Policy Context |
| <p>City of Boulder Policy and Plans</p> <ul style="list-style-type: none"> ▪ Emissions <ul style="list-style-type: none"> ○ Climate Action Plan: 70% reduction by 2030, Net Zero by 2035, Carbon Positive by 2040 ○ Transportation Master Plan: 50% reduction in transportation emission by 2030 ▪ EV goals; Transition the HOP bus fleet from diesel to electric by 2030 <ul style="list-style-type: none"> ○ Go EV City Resolution: 30% zero emissions vehicles by 2030 and 100% by 2050 <p>Alignment with Boulder County Regional Transportation Electrification Priorities</p> <ul style="list-style-type: none"> ▪ PU-4: Shared Mobility / Delivery Fleets Charging |
| Metrics of Success |
| <ul style="list-style-type: none"> ▪ GHG and criteria pollutant emissions reduced annually ▪ Number or percentage of electric vehicles in fleets, including school bus electrification ▪ Vehicle miles traveled by electric fleets (from charging at that site) |

| <ul style="list-style-type: none"> Capacity to charge fleet vehicles (% of fleets) | | |
|---|--|--|
| Roles and Responsibilities | | |
| <p>City of Boulder Role: Lead Project Partner</p> <ul style="list-style-type: none"> Collaborate in concept development, project funding securement, design and construction of Regional Fleet Charging Hub(s) in partnership with other lead project partners (Via Mobility Services, CU Boulder, and Boulder Valley School District) and stakeholders. <p>Contact:</p> <ul style="list-style-type: none"> Danny O'Connor Matt Lehrman Lex Telischak | <p>Xcel Energy Role: Support</p> <ul style="list-style-type: none"> Provide support for development of Regional Fleet Charging Hub(s), including through connection to Xcel Energy funding opportunities. Provide support to fleets, including through Xcel Energy EV fleet advisory services (e.g., Fleet Electrification Advisory Program (FEAP), EVSI). <p>Contact: Brodie Ayers</p> | <p>Other Lead Project Partners</p> <ul style="list-style-type: none"> CU Boulder Via Mobility Boulder Valley School District <p>Other Partners</p> <ul style="list-style-type: none"> RTD Boulder County EV charging station providers |
| Key Implementation Steps and Timeline | | |
| Action Steps | Timeline | |
| 1. Consider applying for Higher Emissions Community (HEC) designation to leverage enhanced Community Charging Hub rebates through Xcel Energy. | 2023 | |
| 3. Commission a feasibility and programming study to determine partner needs. | 2023 | |
| 4. Identify applicable incentives, grant programs, and other potential funding sources. | 2023 | |
| 5. Begin project design and construction. | TBD | |
| Technical Feasibility and Considerations | | |
| <ul style="list-style-type: none"> Electrical infrastructure requirements to support multiple charging stations with redundancy, to ensure station operability. Feasibility and consideration of the electrical infrastructure capacity to support large simultaneous charging events. Design of the Regional Fleet Charging hub to accommodate large vehicles Pricing structure design that is flexible in order to meet affordable operational needs of different fleets. Determine operations and maintenance schedule and responsibilities. To ensure station redundancy and reliability. Determine best practices to reduce site demand and enable efficient charging. | | |

- Charging compatibility to power multiple and different bus and transit vehicle makes.
- Integrate facility with Via Mobility Services-adjacent operations headquarters and charging infrastructure.

Impact

EV Adoption and GHG Emissions

- Reduce air toxins pollution, with particular focus on underserved areas and populations disproportionately impacted by transportation pollution.
- Reduce greenhouse gas emissions in transportation sector.

Resilience

- Adds charging capacity and redundancy for fleet’s operating electric vehicles in the region.

Resource Considerations

Funding Needs

- Funding required for design, construction, and operation of Regional Fleet Charging Hub.

Potential Funding Sources

- Xcel Energy Transportation Electrification Plan
- Potential for state funding through the [Community Access Enterprise](#), through Community-Accelerated Mobility Project (CAMP) and Fleet Infrastructure Resources
- Infrastructure Investment and Jobs Act created the [National Electric Vehicle Infrastructure \(NEVI\) Program](#) offering, focuses first on funding interstate corridor EV infrastructure and then opens to multiple-fleet charging centers

CS-2: Vehicle-to-Building CarShare Pilot

This strategy will move forward efforts underway to expand the existing Vehicle-to-Building pilot project in partnership with Fermata Energy at a Boulder Housing Authority location. This project will see the installation of multiple bidirectional charging stations to serve multiple low-income car share vehicles. This innovative project will provide insight into the viability and opportunities around peak demand shaving with multiple bidirectional chargers and vehicles.



Progress has already been made on this project, including site selection and submission of an application for Xcel Energy Partnerships for Research and Innovation (PRI) Equitable Car Share funding to cover the cost of Nissan Leaf carshare vehicles. An additional application has been submitted for Xcel Energy’s EVSI program, to support project infrastructure costs. The city and Xcel Energy are collaborating through the PRI Vehicle-to-Building offering to cover the cost of bidirectional charging and the city has identified additional funds to support the ongoing viability of a low-income multifamily carshare program at this location.

| Existing Policy Context | | |
|---|---|--|
| <p>City of Boulder Policy and Plans <u>Go EV City Resolution:</u> Improve transportation and social equity <u>Transportation Master Plan:</u> Initiative 5: Shaping Innovation and New Forms of Mobility Alignment with Boulder County Regional Transportation Electrification Priorities</p> <ul style="list-style-type: none"> ▪ CA:3 – Equitable EV Carshare Program (2022-2024) ▪ Public Charging Vehicle-to-Grid Charging (2024-2030) | | |
| Metrics of Success | | |
| <ul style="list-style-type: none"> ▪ Number of bidirectional chargers installed ▪ Number of carshare vehicles available for low-income multifamily use ▪ Demand “peak-shaving” impact of multiple bidirectional chargers ▪ Vehicle miles traveled by multifamily residents using low-income carshare vehicles | | |
| Roles and Responsibilities | | |
| <p>City of Boulder Role: Co-Lead</p> <ul style="list-style-type: none"> ▪ Municipal funding to support ongoing carshare operation. ▪ Liaison with Boulder Housing Partners. ▪ Support determining on-site infrastructure requirements. <p>Contact:</p> <ul style="list-style-type: none"> ▪ Matt Lehrman | <p>Xcel Energy Role: Co-Lead</p> <ul style="list-style-type: none"> ▪ Funding support through PRI and EVSI offerings. ▪ Lead on-site feasibility work and determination of on-site infrastructure requirements. <p>Contact:</p> <ul style="list-style-type: none"> ▪ André Gouin ▪ Brodie Ayers | <p>Other Partners</p> <ul style="list-style-type: none"> ▪ Sturgeon Electric ▪ Fermata Energy ▪ Boulder Housing Partners ▪ Colorado Car Share |
| Key Implementation Steps and Timeline | | |
| Action Steps | | Timeline |
| 1. | Complete on-site feasibility assessment to confirm electrical infrastructure requirements and feasibility. | 2022 – 2023 |
| 2. | Confirm funding sources for any infrastructure upgrades required, charging stations and vehicles | 2023 |
| 3. | Install bidirectional charging stations | 2023 |
| 4. | Launch low-income car share program in partnership with Colorado CarShare | 2023 |
| 5. | Collect and analyze data regarding car share utilization and peak demand shaving benefits on an ongoing basis | 2023 and ongoing |
| Technical Feasibility and Considerations | | |
| <ul style="list-style-type: none"> ▪ Site assessment based on proximity and electrical infrastructure ▪ Determine electrical infrastructure needs to support multiple bidirectional charging stations | | |

| |
|---|
| <ul style="list-style-type: none"> ▪ Electric vehicles with bidirectional charging capabilities currently limited but expected to expand in the next 1-2 years |
| <p>Impact</p> <p>EV Adoption and GHG Emissions</p> <ul style="list-style-type: none"> ▪ Increases access to driving an EV to both while removing the need to own a personal vehicle. ▪ Potential grid and emissions benefits associated with demand peak shaving due to multiple bidirectional charging stations. <p>Equity</p> <ul style="list-style-type: none"> ▪ Expanded access to the benefits of transportation electrification and shared mobility for multifamily housing residents. <p>Resilience</p> <ul style="list-style-type: none"> ▪ Potential for bidirectional charging to support building energy resilience, for example, critical load support during outages. |
| <p>Resource Considerations</p> <p>Funding Needs</p> <p>Funding required to support infrastructure improvements, installation of chargers, purchase of electric vehicle, and operation of carshare on an ongoing basis.</p> <p>Potential Funding Sources</p> <ul style="list-style-type: none"> ▪ Xcel Energy PRI Equitable Car Share project ▪ Xcel Energy EVSI program ▪ Xcel Energy for PRI Vehicle-to-Building project ▪ Potential for state funding through the Community Access Enterprise through Community-Accelerated Mobility Project (CAMP) |

CS-3: Community Charging Hub(s)

Develop community charging hub(s) with a mixture of level 2, fast charging and micromobility charging for drivers without access to home charging, delivery fleets, car share, ride share, and other fleets. It is anticipated that community charging hubs may be designed differently based on use case and the type of customer to be served, including consideration of the number of plugs, type of charging infrastructure needed, and location. The community charging hub(s) may be part of a mobility hub, connecting multiple modes of transportation, and providing first and last mile connections for transit, carshare, and rideshare.

| |
|---|
| <p>Existing Policy Context</p> <p>City of Boulder Policy and Plans</p> <p>Transportation Master Plan:</p> <ul style="list-style-type: none"> ▪ Identify locations, policies, and regulations to support mixed land uses and the development of highly connected mobility hubs, particularly in locations without existing fast charging stations (e.g., east, north, and south Boulder) (Action 3.E) ▪ Develop mobility hubs with a wide range of mobility options to address first- and last-mile connections for transit riders (Action 5.F) ▪ In appropriate locations, partner with car share, ride share, micromobility, and delivery fleets to support electrification (Action 5.C) <p>Alignment with Boulder County Regional Transportation Electrification Priorities</p> <ul style="list-style-type: none"> ▪ Boulder County Regional EV Plan PU-3: Mobility Hubs |
|---|

| Metrics of Success | | |
|---|--|--|
| <ul style="list-style-type: none"> ▪ Site identification, design, and construction of community charging hub(s) ▪ Number of community charging stations installed at mobility hub to provide shared charging ▪ Distance from charging hubs to neighborhoods with limited access to home charging ▪ Utilization of Charging Hub(s), if available | | |
| Roles and Responsibilities | | |
| <p>City of Boulder Role: Lead</p> <ul style="list-style-type: none"> ▪ Lead concept development, design, and construction of Community Charging Hub(s) - in parallel with community Mobility Hub and in partnership with other partners and stakeholders. <p>Contact:</p> <ul style="list-style-type: none"> ▪ Matt Lehrman ▪ Lex Telischak | <p>Xcel Energy Role: Support</p> <ul style="list-style-type: none"> ▪ Provide support for development of Community Charging Hub(s) including through connection to Xcel Energy funding opportunities. <p>Contact:</p> <ul style="list-style-type: none"> ▪ Brodie Ayers ▪ Mike Tuley ▪ Angie Bedolla / Iffie Jennings | <p>Other Partners</p> <ul style="list-style-type: none"> ▪ Micromobility companies ▪ Ride share companies ▪ Car share companies ▪ Delivery fleets ▪ Site hosts |
| Key Implementation Steps and Timeline | | |
| Action Steps | | Timeline |
| 1. | Determine type and timing of charging infrastructure as well as any technical specifications needed for different use cases, including public charging, car share, ride share, and micromobility. Evaluate whether charging needs for each can be met at the same location. | 2022 – 2023 |
| 2. | Identify potential location(s) for Community Charging Hub(s) serving each community charging use case identified. | 2022 – 2023 |
| 3. | Identify partners and begin stakeholder and broader community engagement to inform goals, scope, and design elements of Community Charging Hub. | 2023 |
| 4. | Consider engaging Boulder’s data community in defining and collecting data metrics to support tracking and proof of concept, including economic impact, siting. | 2023 |
| 5. | Work with partners to conduct assessment of potential location(s) based on project goals, scope, and design elements. Identify any technical feasibility requirements, infrastructure needs, or other potential barriers. | 2023 |
| 6. | Identify potential funding sources including Xcel Energy incentives (i.e., through designation as an HEC), local funding, and state and federal grant opportunities. | 2023 |
| 7. | Begin design and construction of Community Charging Hub(s). | 2024 |

| | | |
|----|--|------|
| 8. | Launch Community Charging Hub(s) and evaluate use and functionality on an ongoing basis. | 2024 |
|----|--|------|

Technical Feasibility and Considerations

- Consideration of the feasibility to host different types of charging, to serve different vehicle types and use cases at a shared site.
- Electrical infrastructure requirements to support multiple charging stations.
- Pricing structure design to support multiple use cases and equitable community charging.
- Determining a maintenance schedule and responsibilities to ensure that stations are reliable.

Impact

EV Adoption and GHG Emissions

- Increased accessibility of equitable community charging, leading to increased EV adoption and reduced transportation emissions.
- Opportunities for shared charging for car share, ride share, micromobility, and fleets will support increased electrification.
- Integration of multiple transportation modes, encouraging alternative transportation and reducing vehicle miles traveled.

Equity

- Potential to prioritize Community Charging Hub location(s) in close proximity to multifamily housing developments and/or other neighborhoods with limited access to home charging, in connection with incentives to support EV purchases.
- Potential for Community Charging Hub(s) to provide affordable and/or no-cost charging for non-residents commuting into Boulder.
- Support for electrification of fleet vehicles in areas disproportionately impacted by transportation emissions.
- Support for micromobility options helping to expand the benefits of transportation electrification.

Resilience

- Potential to integrate bidirectional charging and battery storage to provide resilience functions. This could be potentially leveraged for demand reduction efforts related to charging.
- Expanding the diversity of advanced transportation options to support community vitality and resilience.

Resource Considerations

Funding Needs

- Funding required to support community engagement, design, construction, and operation of Community Charging Hub.

Potential Funding Sources

- Xcel Energy EVSI incentives
- Xcel Energy Community Charging Hub incentives (for income qualified areas and designated HECs)
- Xcel Energy PRI bidirectional charging program
- Colorado Energy Office Charge Ahead grant funding
- Colorado Energy Office Community Accelerated Mobility Project grant funding

CS-4: Curbside and/or Neighborhood Charging Policies and Programs

Develop and enact policies and programs to support curbside and/or neighborhood charging, to serve a variety of residents and commercial customers. Curbside and/or neighborhood charging has the potential to provide convenient, affordable charging access for community members without access to home charging, such as those without access to a garage or off-street parking. In addition, curbside charging may also serve delivery fleets, car share, ride share, and other fleets for which distributed charging access could be beneficial. During 2022, the City of Boulder conducted research on curbside charging policies, programs, and products available in other communities; the intent of this strategy is to build and act upon that existing work.

| Existing Policy Context | | |
|---|---|--|
| <p>City of Boulder Policy and Plans Go EV City Resolution: Improve transportation and social equity Transportation Master Plan: Initiative 5: Shaping Innovation and New Forms of Mobility Promote home and public charging Alignment with Boulder County Regional Transportation Electrification Priorities</p> <ul style="list-style-type: none"> ▪ HW-3: Equitable Single Family Home Charging Incentives ▪ PU-4: Shared Mobility / Delivery Fleets Charging | | |
| Metrics of Success | | |
| <ul style="list-style-type: none"> ▪ Implementation of policies and programs to support curbside and/or neighborhood charging ▪ Number of charging stations serving residents without access to home charging ▪ Financial metrics such as return on investment/payback (TBD) | | |
| Roles and Responsibilities | | |
| <p>City of Boulder Role: Lead</p> <ul style="list-style-type: none"> ▪ Develop and implement curbside / neighborhood charging policies. ▪ Ongoing monitoring and evaluation. <p>Contact:</p> <ul style="list-style-type: none"> ▪ Matt Lehrman | <p>Xcel Energy Role: Support</p> <ul style="list-style-type: none"> ▪ Provide research to support development of curbside / neighborhood charging policies. ▪ Provide support to pilot project, including through connection to Xcel Energy funding opportunities. <p>Contact:</p> <ul style="list-style-type: none"> ▪ Brodie Ayers ▪ Partners in Energy | <p>Other Partners</p> <ul style="list-style-type: none"> ▪ Neighborhood associations ▪ Charging installers ▪ Local community facilities and services such as schools, gardens, community centers ▪ CU Campus ▪ Privately owned parking lots, if applicable |
| Key Implementation Steps and Timeline | | |
| Action Steps | | Timeline |
| 1. | Identify plans, codes, and policies that currently pose a barrier to curbside / neighborhood charging in Boulder; define criteria that may permit community members to install charging at the curbside or other accessible locations within their neighborhood. | 2022 |

| | | |
|----|--|------------------|
| 2. | Engage residents and other partners in order to inform the development of neighborhood charging policies and programs. Participate in and connect with implementation of Boulder County Regional Transportation Electrification Plan Equitable Single-Family Home Charging Incentives strategy (HW-3). | 2023 |
| 3. | Design policy and programs to allow for curbside and/or neighborhood charging. | 2023 |
| 4. | Launch program for residents and businesses to apply for curbside and/or neighborhood charging | 2023 |
| 5. | Monitor charger use, community perception, and other metrics; adjust pilot program as needed to meet community needs | 2023 and ongoing |
| 6. | Evaluate policy and programs to inform development of community-wide or targeted policy approach to neighborhood charging | 2023 |

Technical Feasibility and Considerations

- Electrical infrastructure for curbside and/or neighborhood charging.
- Sustainable ownership models and pricing structure to support home charging for residents without access to off-street parking.
- Consider pairing curbside and/or neighborhood charging policies and programs with incentives and outreach for EV purchase.
- Challenges restricting curbside or other neighborhood parking access to EV charging.
- Consider future development and/or alternative transportation infrastructure in the location of curbside charging.
 - Avoid areas slated for potential pedestrianization or protected bike lanes.
 - Incorporate charging infrastructure into future housing developments alongside alternative infrastructure.

Impact

- EV Adoption and GHG Emissions**
- Access to convenient, affordable charging at home for residents without access to off-street parking, leading to increased EV adoption
- Equity**
- Removing barriers to charging at home for residents in areas with limited access to off-street parking.
- Resilience**
- Potential to explore future integration of bidirectional charging with microgrids, to provide power supply resilience at the neighborhood scale.

Resource Considerations

- Funding Needs**
- No additional funding required to develop and enact policies.
 - Possible funding required to install or support installation of neighborhood charging stations.
- Potential Funding Sources**
- Xcel Energy EVSI incentive, EV Accelerate at Home
 - Potential for Xcel Energy income qualified/HEC incentives
 - Colorado Energy Office Community Accelerated Mobility Project grant funding
 - Potential for 2024-2026 Transportation Electrification Plan funding

CS-5: Multifamily Charging Incentives for Income-Qualified Customers

Evaluate options to provide incentives for charging infrastructure serving income-qualified multifamily housing residents. Examples could include rebates, vouchers, or other incentives to help multifamily properties and households in multifamily properties install EV charging.

| Existing Policy Context | | |
|--|--|--|
| <p>City of Boulder Policy and Plans Transportation Master Plan: Promote home and workplace charging</p> <p>Alignment with Boulder County Regional Transportation Electrification Priorities</p> <ul style="list-style-type: none"> ▪ HW-1: Multifamily Charging Outreach ▪ HW-2: Equitable Multifamily Charging Incentives | | |
| Metrics of Success | | |
| <ul style="list-style-type: none"> ▪ Development and launch of incentive program at local and/or regional scale ▪ Uptake of incentives ▪ Multifamily housing units with access to EV charging | | |
| Roles and Responsibilities | | |
| <p>City of Boulder Role: Support</p> <ul style="list-style-type: none"> ▪ Participate in Boulder County Regional Transportation Electrification Home and Workplace Charging Subgroup. ▪ Identification of local multifamily property managers and other stakeholders. ▪ Administration of local incentives and/or support for regional administration of incentives. <p>Contact: Matt Lehrman</p> | <p>Xcel Energy Role: Support</p> <ul style="list-style-type: none"> ▪ Support to identify infrastructure requirements. ▪ Support to identify applicable funding programs. ▪ Support with best practice research and outreach. ▪ Application support from Xcel Energy EV Advisors. ▪ Connection to TEP funding opportunities, including on-bill financing options and income-qualified customer incentives. <p>Contact: Brodie Ayers</p> | <p>Other Partners</p> <ul style="list-style-type: none"> ▪ Southwest Energy Efficiency Project (SWEET) ▪ Drive Clean Colorado. ▪ Boulder Transportation Connections ▪ Boulder Housing Partners ▪ Community-Based Organizations |
| Key Implementation Steps and Timeline | | |
| Action Steps | | Timeline |
| 1. | Participate in Boulder County Regional Home and Workplace Charging Subgroup and contribute to implementation of Multifamily Charging Outreach and Equitable Multifamily Charging Incentives strategies. | Align with Boulder County Regional Transportation Electrification Plan implementation. |
| 2. | Leverage findings of the Boulder County Regional Multifamily Charging Incentives feasibility study to | Align with Boulder County Regional Transportation |

| | | |
|--|---|--------------------------------------|
| | design local incentive program and/or support local implementation of a regional incentive program. | Electrification Plan implementation. |
| Technical Feasibility and Considerations | | |
| <ul style="list-style-type: none"> ▪ Determine electrical infrastructure requirements. ▪ Determine equitable pricing structures. ▪ Align with outreach on EV benefits and vehicle purchase incentives. | | |
| Impact | | |
| EV Adoption and GHG Emissions | | |
| <ul style="list-style-type: none"> ▪ Increased access to home charging, driving increased EV adoption by multifamily residents. | | |
| Equity | | |
| <ul style="list-style-type: none"> ▪ Prioritize incentives for low- to moderate-income households and multifamily housing developments. ▪ Explore equitable pricing for multifamily residents and cost-recovery mechanisms for property managers. ▪ Explore the potential to combine EV charging incentives with carshare. ▪ Support outreach by property owners to residents. to determine resident needs and demand for EV charging. ▪ Explore potential to collaborate with other income-based programs to streamline application/eligibility and leverage outreach, community relationships, and funding. | | |
| Resilience | | |
| <ul style="list-style-type: none"> ▪ Explore the potential for bidirectional Vehicle-to-Building and/or Vehicle-to-Grid charging to support resilience. | | |
| Resource Considerations | | |
| Funding Needs | | |
| <ul style="list-style-type: none"> ▪ Funding required to offer and administer multifamily charging incentives. | | |
| Potential Funding Sources | | |
| <ul style="list-style-type: none"> ▪ Align with other funding opportunities to maximize impact, including Xcel Energy TEP multifamily, HEC, and Income Qualified offerings ▪ Federal competitive EV grants ▪ Charge Ahead Colorado grants ▪ Community Access Enterprise Funding for Service Panel Upgrades and Residential Resources (from Year 2 of the Enterprise) | | |

How we will stay on track



Implementation Approach

This Plan outlines strategies to advance electric mobility in Boulder. It will be important that plan implementation is cyclical in nature, with tracking and evaluation built in to sustain progress and allow for course adjustment(s) if necessary, as shown in Figure 6.

Implementation will be grounded in this plan’s [cross cutting themes](#) to advance electric mobility that is *equitable, integrated, innovative, and versatile*.

Equitable:

Prioritize strategies that remove barriers to transportation electrification, particularly for disproportionately impacted communities.

Implementation of this Electric Mobility Plan creates opportunities to operationalize the city’s 2021 [Racial Equity Plan](#) and Sustainability + Resilience Framework, including through use of the Racial Equity Instrument and community partnerships. Additionally, strategies within this plan provide an opportunity to leverage and create new funding for EVs and EV charging in disproportionately impacted communities.

The state’s [Charge Ahead Colorado](#) grant program offers enhanced charging station incentives for income qualified entities and applicants within disproportionately impacted census block groups (see Figure 7).

[Enhanced Xcel Energy rebates](#) for EV charging are also available for income-qualified

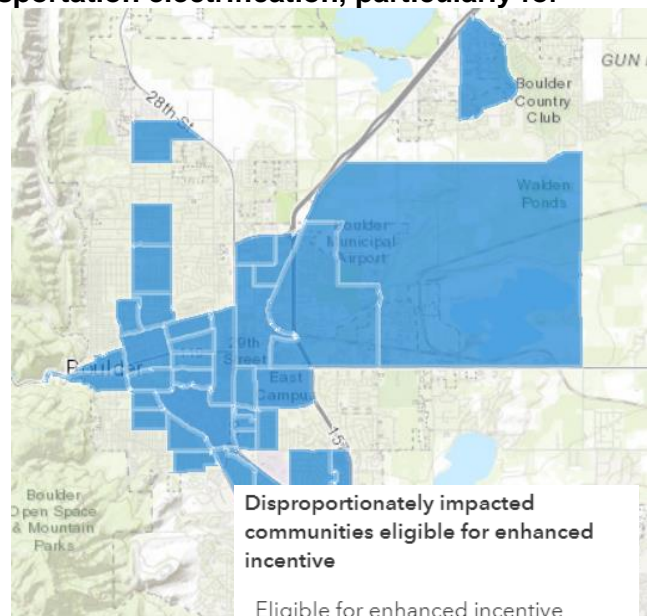


Figure 7. Disproportionately impacted communities eligible for enhanced Charge Ahead Colorado incentives (Colorado Energy Office, 2022).

organizations and HECs. While there are currently no designated HECs within Boulder, publicly available mapping tools such as [EPA EJScreen](#) and CDPHE’s [EnviroScreen](#) may be used to identify areas within Boulder that may be suitable for designation and/or are home to income-qualified organizations (see Figure 8 and Figure 9).

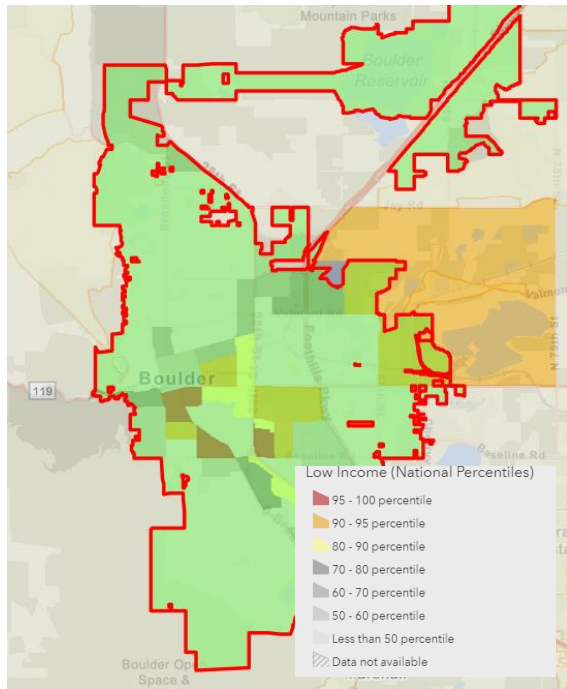


Figure 8. Percent low-income population by census block group in Boulder (low-income individuals are defined as those whose ratio of household income to poverty level in the past 12 months was less than 2). Block groups highlighted in darker red are in the 95th percentile or higher for low-income population at the national scale (EPA, 2022).

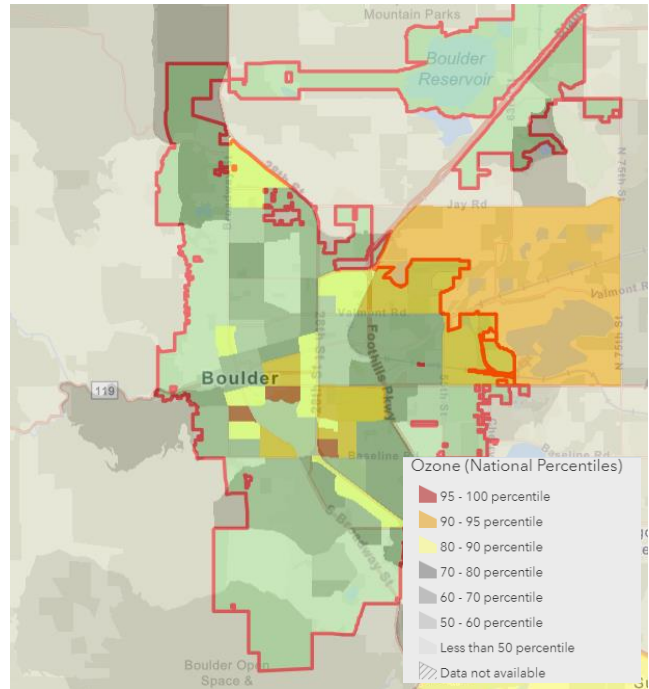


Figure 9. Ozone pollution by census block group in Boulder. Block groups highlighted in darker red are in the 95th percentile or higher for ozone pollution at the national scale (EPA, 2022).

Integrated:

Prioritize strategies that integrate multiple Advanced Transportation Modes and support a fully connected transportation system including first- and last-mile connections.

Implementation of this plan will require ongoing coordination between City of Boulder departments and Xcel Energy in order to ensure that strategies to increase electric vehicle adoption are contextualized and integrated within broader transportation planning. As an updated City of Boulder Transportation Master Plan is developed, this plan may influence new actions and policies. Similarly, the strategies and action steps within this plan will need to be evaluated in light of emerging transportation priorities, policies, and projects.

Innovative:

Prioritize innovative strategies including pilot projects, policy, and programs that realize new ways to support transportation electrification. Consider the potential to replicate and apply innovative strategies throughout Boulder and in other communities.

In alignment with the sentiment of the Energy Partnership Agreement between Xcel Energy and the City of Boulder, implementation of this plan will involve the ongoing identification of opportunities for collaborative innovation.

Versatile:

Prioritize strategies that are flexible and incorporate opportunities to adjust based on observed results, shifting priorities, and changing conditions.

The strategies in this plan were developed by the planning team to reflect established City of Boulder priorities, the current electric mobility landscape, and existing technologies. In this rapidly changing sector, it will be important to update strategies to reflect not only shifting local priorities but also electric mobility sector trends, technological advancements, and emerging Xcel Energy offerings and funding opportunities.

Different strategies included in this plan will require different implementation approaches and structures. A summary of the primary implementation approach or structure is provided in Table 2.

Tracking and Reporting Progress

To ensure that this plan remains on track, the project management team will track progress toward the overarching plan goals and strategy metrics on an annual basis. A summary of metrics by strategy is provided in Table 1.

Table 1. City of Boulder electric mobility 2030 goal and 2025 interim milestone.

| 2030 Goal | Baseline | 2025 Interim Milestone | Metric | Data Source |
|--|--|---|---|--|
| Transition 30% of all vehicles registered in Boulder to zero-emissions by 2030 | 5% (4,404 EVs on the road in October 2022) | 14% (13,500 registered EVs ⁵) | Percent of total registered vehicles that are EVs | IHS data purchased by the City of Boulder (total registered vehicles in Boulder) and Atlas Policy EValuateCO dashboard (number of EVs on the road) |

⁵ This 2025 interim milestone is calculated as a linear interpolation of the 30% by 2030, using forecasted total vehicle numbers based on County population forecasts from the State Demographer’s Office.

Table 2. City of Boulder electric mobility strategies, primary implementation approach, and metrics.

| | 2022 – 2025 Strategy | Primary Implementation Approach | Strategy Metrics |
|--------------------|--|---|---|
| Lead By Example | L-1: City Fleet Electrification & EV Supply Infrastructure | Internal City of Boulder working group, led by fleet manager, with participation from other climate initiatives and transportation department staff as needed. | <ul style="list-style-type: none"> ▪ % light-duty EVs in municipal fleet ▪ # medium-, heavy-duty, and specialized EVs in municipal fleet |
| | L-2: City of Boulder Work Travel Trips | Coordination with Xcel Energy and other partners as needed. | <ul style="list-style-type: none"> ▪ \$ city budget savings ▪ Estimated MTCO_{2e} emissions reduced |
| Community Adoption | CA-1: EV Outreach and Communications | Participation in Boulder County Regional Transportation Electrification Plan Community Adoption Subgroup. | <ul style="list-style-type: none"> ▪ Website page views ▪ Social media impressions |
| | CA-2: Micromobility Incentives | Working group formed of city staff and community partners. | <ul style="list-style-type: none"> ▪ Shared micromobility program participation ▪ Uptake and impact of micromobility incentives |
| Charging Solutions | CS-1: Regional Fleet Charging Hub | Project implementation group formed of project partners (City of Boulder, CU Boulder, Boulder Valley School District, Xcel Energy, Via Mobility). | <ul style="list-style-type: none"> ▪ GHG and criteria pollutant emissions ▪ # and % of EV in local fleets ▪ VMT by EV fleets ▪ Capacity to charge fleet vehicles |
| | CS-2: Vehicle-to-Building CarShare Pilot | Project implementation group formed of Xcel Energy, City of Boulder, Boulder Housing Partners, Fermata Energy, and Colorado CarShare. Coordination with other partners as needed. | <ul style="list-style-type: none"> ▪ # bidirectional chargers installed ▪ # low-income carshare vehicles ▪ Demand management impact ▪ Low-income carshare vehicle usage |
| | CS-3: Community Charging Hub(s) | Initial working group formed of City of Boulder and Xcel Energy, with other partners engaged as needed during project scoping. | <ul style="list-style-type: none"> ▪ # Charging Hub location(s) and distance to neighborhoods with limited home charging access ▪ # charging stations installed ▪ Utilization of charging hubs |
| | CS-4: Curbside / Neighborhood Charging Policies and Program | Internal City of Boulder working group, with support from Xcel Energy as needed. Other partners to be engaged as needed. | <ul style="list-style-type: none"> ▪ Policies and programs implemented ▪ # neighborhood charging stations ▪ Financial metrics such as return on investment/payback (TBD) |
| | CS-5: Income-Qualified Multifamily Charging Incentives | Participation in Boulder County Regional Transportation Electrification Plan Home and Workplace Charging Subgroup. | <ul style="list-style-type: none"> ▪ Development and launch of incentive program ▪ Uptake of incentives ▪ Multifamily housing units with access to EV charging |

Appendix I: Xcel Energy EV Programs

In 2021, [Xcel Energy's Transportation Electrification Plan \(TEP\)](#) was approved by the Colorado Public Utilities Commission (PUC). The TEP is intended to support the State's EV goals and help position Colorado as a national leader in vehicle electrification. It includes a portfolio of programs, services, and rebates - funded by Xcel Energy customers - that are designed to benefit all drivers, all customers, and the state, by helping to reduce greenhouse gas emissions and air pollution while keeping electric bills low and benefiting the grid (Public Service Company of Colorado, 2021).

Residential Programs

Home Wiring Rebate

Xcel Energy electric service customers in Colorado who enroll in the Optimize Your Charge program and purchase an eligible Level 2 charger and/or install wiring to support an eligible Level 2 charger may apply for a rebate of up to \$500 to help cover the cost of wiring. Income-qualified customers are eligible for a higher \$1,300 rebate.

Optimize Your Charge

The Optimize Your Charge program rewards EV drivers who agree to charge during off-peak hours with an annual \$50 bill credit.

EV Accelerate at Home

Through the EV Accelerate at Home program, Xcel Energy electric service customers can rent a Level 2 home charger, select an off-peak charging schedule, and have the charging station installed and maintained by Xcel Energy. EV Accelerate at Home participants pay a \$13.29 per month rental fee through their Xcel Energy electricity bill and are also eligible for the Wiring Rebate and the Optimize Your Charge bill credit described above.

EV Purchase / Lease Rebate for Vehicles

In addition to helping customers overcome cost barriers related to EV charging, Xcel Energy offers income-qualified electric service customers up to \$3,000 off the cost of a used EV, or \$5,500 off the cost of a new EV. The rebates are instant and non-taxable when income-qualified customers buy or lease from a Colorado-based car dealer in Xcel Energy's [EV Dealer Network](#),

Residential Income Qualification Requirements

To be eligible for income-qualified programs, customers must demonstrate a household income below:

- 60% of the state of Colorado's median income
- 200% of the relevant federal poverty level
- 80% of the area median income

OR be currently enrolled in any of the following programs:

- State of Colorado Low-Income-Energy Assistance Program (LEAP)
- Energy Outreach Colorado's Colorado Affordable Residential Energy Program (CARE)
- Colorado's Weather Assistance Program (WAP)
- Xcel Energy income-qualified Demand-Side Management program
- Xcel Energy income-qualified Community Solar Gardens program
- Supplemental Nutrition Assistance Program (SNAP)

- Temporary Assistance for Needy Families (TANF) program

Multifamily Programs

Xcel Energy supports home charging for those who live in multifamily housing such as apartments or condominiums and will install, own, and maintain a dedicated service connection for EV charging, including the necessary transformer upgrades, service conductors, and a new meter. Additionally, Xcel Energy will install, own, and maintain the EV Supply Infrastructure, including new service panels, conduit and wiring between the new meter and the charger. For more information on all Multifamily Charging programs, visit the [Xcel Energy website](#).

Multi-Family Housing with Assigned Parking

Xcel Energy will own, install, and maintain EV supply infrastructure and charging equipment for a monthly fee when residents have dedicated parking spaces with charges tied to their utility bills.

Multifamily properties meeting income-qualified criteria or located in an HEC are eligible for an enhanced incentive of \$800 per charging station under the Assigned Parking program.

Multi-Family Housing with Shared Parking

Xcel Energy will own, install, and maintain EV supply infrastructure and charging equipment for a monthly fee, with a new meter installed for shared charging equipment.

Alternatively, multifamily housing property owners may install, own, and maintain their own charging equipment from an Xcel Energy approved provider list. Xcel Energy will install, own, and maintain the EV supply infrastructure and install a new meter for the shared chargers.

Multifamily properties meeting income-qualified criteria or located in an HEC are eligible for an enhanced incentive of \$2,200 per charging station under the Shared Parking program.

New Construction

New multifamily construction properties may earn a rebate for every parking spot with EV charging enabled. Xcel Energy will provide up to \$2,000 for EV Ready, EV Capable, or EV Installed ports that are in excess of those required by applicable building codes.

Commercial Programs

EV Advisors

Xcel Energy's EV Advisors are available to guide businesses through a customized EV charging plan and support identification of applicable resources and incentives.

EV Support Infrastructure (EVSI)

Xcel Energy will provide no- to low-cost turn-key construction services for infrastructure at public charging sites receiving Xcel Energy commercial electric service in Colorado.

Charger Service

Xcel Energy will own, install, and maintain Level 2 EV supply equipment for a monthly fee for fleet and workplace customers.

Critical Peak Pricing Program

The Critical Peak Pricing program is designed to incentivize charging during off-peak hours, at times of day when cleaner generation allows for more sustainable charging. This program is available to customers receiving Xcel Energy commercial electric service in Colorado, with EV

charging on a secondary voltage service where the electric power and energy is used solely for EV charging and is metered separately from other loads.

Income Qualified and Higher Emissions Communities (HEC) Enhanced Incentives

Commercial customers who meet income-qualified criteria or are located in HECs are eligible for enhanced rebates. Please visit the [Xcel Energy website](#) to learn more about income qualification criteria, HEC eligibility, and benefits.

Fleet Electrification Advisory Program (FEAP)

Xcel Energy's Fleet Electrification Advisory Program begins with an analysis to help determine the best course of action for fleet electrification. In partnership with Sawatch Labs, participating in FEAP allows fleet operators to assess individual vehicles - to determine if the vehicle owner's driving needs could be met with an electric vehicle (EV). Additionally, FEAP assesses charging site suitability and estimates the cost of infrastructure installation. Finally, FEAP helps advise on rate plans and pilot programs to lower costs. For more information visit [Xcel Energy's FEAP webpage](#).

Small Business Rebate

Customers can receive up to \$2,500 per port, with a maximum of three ports, to offset wiring costs to install EV infrastructure. For more information, visit [Xcel Energy's EV charging for small business website](#).

Appendix II: References

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