



An Electric Vehicle Readiness and Action Plan for the Garfield County Region

April 2024



ACKNOWLEDGEMENTS

Thank you to the following individuals who contributed many hours of service to developing this Electric Vehicle (EV) Readiness and Action Plan.

This planning process was led by Xcel Energy Partners in Energy, Garfield Clean Energy (GCE), and Clean Energy Economy for the Region (CLEER). Garfield Clean Energy contracts with CLEER to develop and deliver its programs and services. CLEER is a 501c3 organization that provides programs and tools to help western Colorado communities reach adopted clean energy targets with an emphasis on economic development and economic diversification. Xcel Energy is one of the main electric utilities serving Garfield County communities, serving approximately 51% of electric customers. Holy Cross Energy, the other major electric utility in the region, also supported this effort.

Partners in Energy is a two-year collaboration to develop and implement a community's energy and EV goals.

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GARFIELD COUNTY REGION

Electric Vehicle Readiness and Action Plan Executive Summary

About this Plan

The purpose of this plan is to identify our baseline for vehicle electrification in our community, examine both challenges and opportunities for the transition to vehicle electrification, and identify strategies to address those challenges and opportunities. This plan is intended to guide EV Action for GCE and CLEER, and to inspire EV action in Garfield County and its member communities. This Electric Vehicle (EV) Readiness and Action Plan combines detailed work plans of short-term strategies with suggestions for longer-term progress and resources for collective action across the County.

Garfield Clean Energy Vision

GCE will be an innovative leader in advancing energy efficiency, renewable energy and clean transportation to protect the environment and build a strong, resilient and diverse economy.

Since 2009, Garfield Clean Energy (GCE) has been an innovative leader in advancing energy efficiency, renewable energy, and clean transportation to protect the environment and build a strong, resilient, and diverse economy. This plan was developed through a partnership between GCE, Clean Energy Economy for the Region, Holy Cross Energy and Xcel Energy Partners in Energy, with input from over 40 community stakeholders across two workshops, four focus groups, and an online survey. The stakeholder team included representatives from the Garfield County region including local municipalities, transportation authorities, electric utilities, Colorado Mountain College staff, equity advocates, the general public, and the State of Colorado.

EV Infrastructure and Vehicle Baseline

In December 2023, Garfield County had a total 626 Battery Electric Vehicles (BEVs) on the road, making up around 1% of the 65,228 light-duty vehicles on the road (Atlas Public Policy, 2023). Another 261, or 0.4% of vehicles on the road in 2023 were Plug-in Hybrid Electric Vehicles (PHEVs) (Atlas Public Policy, 2023). Statewide, there are 75,745 BEVs and 29,418 PHEVs on the road, making up 1.6% and 0.6% of light-duty vehicles on the road respectively. BEVs and PHEVs together account for approximately 8% of registrations for new vehicles in the Garfield County region, and 11.6% statewide, indicating that adoption is increasing (Atlas Public Policy, 2023). There has been a sharp growth in EV adoption since 2010. As of July 2023, there are 81 Level 2 Charging Ports, and 44 DC Fast Charging ports within Garfield County.

A Vision for the Garfield County Region's Electric Vehicle Future

The Garfield County region will be a community where equitable access to EVs and EV charging infrastructure is valued across all sectors. All community members and visitors will have convenient, reliable, and affordable access to EVs and EV charging.

Our Metrics of Success

This EV readiness and action plan seeks to accomplish the following targets:



Transition at least 15% of all registered vehicles to zero-emissions electric by 2030



Contribute to meeting the state EV target of 940,000 EVs on the road by 2030



Contribute to Colorado’s reduction of GHG emissions targets as described in the Greenhouse Gas Pollution Reduction Roadmap

Our Strategic Priorities









To achieve this vision and metrics of success, the Electric Vehicle Readiness and Action Plan for the Garfield County Region is divided into four focus areas. Each focus area includes one or more short-term strategies with action plans to be implemented over the next 18 months. Some focus areas also include long-term and/or toolkit strategies. These strategies do not include action plans and are described in more detail below.



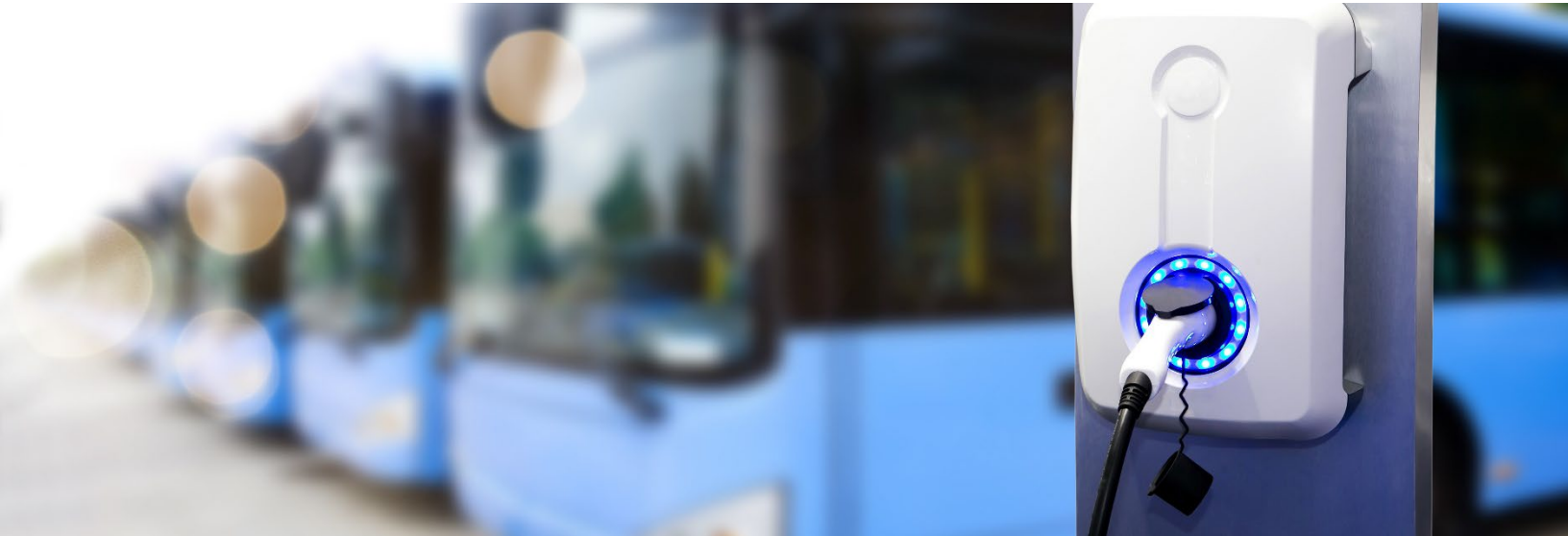
Toolkit strategies provide concise recommendations, best practices, or resources to support Garfield County communities advance implementation beyond the action plans identified in each focus area. Municipalities, non-profits, and other community organizations can leverage toolkit strategies to advance their own priorities. Toolkit strategies are identified with the “tools” icon.



Long-term strategies were identified as important components to fulfilling this plan’s vision, but are recommended for implementation beyond the 18-month implementation period associated with short-term strategies. Long-term strategies are identified with the “diverging road” icon.

FOCUS AREA	DESCRIPTION	SHORT-TERM STRATEGIES
CODES AND POLICY SUPPORT (C)	 <p>Identify opportunities to advance EV infrastructure through county and municipal codes and policies</p>	<ul style="list-style-type: none"> • Strategy C-1: Provide Energy and EV Code Education Opportunities to Communities • Strategy C-2: Connect Developers to Incentives •  Establish a process for in-house electrical permit inspection.
EQUITABLE EV ACCESS (A)	 <p>Perform outreach and engagement to all members of the community about EV benefits and resources</p>	<ul style="list-style-type: none"> • Strategy A-1: Public Outreach Campaign • Strategy A-2: Work with Local Dealerships •  Considerations for improving charging access for renters
EV CHARGING INFRASTRUCTURE (I)	 <p>Identify and pursue strategic opportunities to advance the network of public charging available throughout the county</p>	<ul style="list-style-type: none"> • Strategy I-1: Increase Workplace Charging • Strategy I-2: Assist Multifamily Property Owners and Managers with Charging Infrastructure • Strategy I-3: Support EV Charging Along Regional Travel Corridors •  Provide guidance on charging ownership and maintenance •  Provide guidance on how to approach Level 2 charger siting
FLEET AND TRANSIT (F)	 <p>Support fleets along their transportation electrification journeys</p>	<ul style="list-style-type: none"> • Strategy F-1: General Fleet Electrification • Strategy F-2: Micro-mobility Electrification • Strategy F-3: Transit Electrification

INTRODUCTION



Why an EV Readiness Plan and Our Approach

The purpose of this plan is to identify our baseline for vehicle electrification in our community, examine both challenges and opportunities for the transition to vehicle electrification, and identify strategies to address those challenges and opportunities. This plan is intended to guide EV Action for GCE and CLEER, and to inspire EV action in Garfield County and its member communities.

In 2017, Garfield Clean Energy (GCE) worked with Xcel Energy Partners in Energy to create an Energy Action Plan for the Garfield County Region. In 2022, Garfield Clean Energy and Xcel Energy Partners in Energy led an update to the 2017 Garfield County Energy Action Plan. The Energy Action Plan identified five goals:

- Goal 1: Energy Savings in the Built Environment
- Goal 2: Carbon-Free Electricity
- Goal 3: Clean Mobility
- Goal 4: Greenhouse Gas Emissions
- Goal 5: Clean Energy Economic Development and Jobs

This EV Readiness and Action Plan focuses on Goal 3: Clean Mobility, which states:

The Garfield County Region will transition at least 15% of all registered vehicles to zero-emissions electric by 2030; support alternative fuels where electric is not yet feasible or where alternative fuels are desirable; and help increase mode share for biking, walking and transit.

Under the Clean Mobility Goal, the Energy Action Plan identified transportation electrification as a key focus area. The Transportation Electrification focus area forms the framework for this plan and identifies the following strategies:

- 3.1. Provide access to incentives, funding, and information that will make it easier for people to purchase Electric Vehicles (EVs), which include Battery Electric Vehicles (BEVs) and Plug-in Hybrid Electric Vehicles (PHEVs). Remove barriers to these purchases and ensure equitable access to electric vehicles.
- 3.2. Provide technical assistance, as well as access to incentives, information, and support, to encourage fleet electrification
- 3.3. Continue to improve access to, improve, and maintain electric vehicle charging infrastructure.
- 3.4. Support efforts to electrify the public transit fleet.
- 3.5. Provide assistance to local governments, related to the adoption of codes and policies that support EV adoption and multimodal transportation.

This EV Readiness and Action Plan combines detailed short-term strategy work plans with suggestions for longer-term progress and resources for collective action across the Garfield County region to address these strategies.

The components of this EV Plan are detailed below:

- **EV Planning Context.** Outlines the current Garfield County EV infrastructure and vehicle landscape.
- **Where We Are Going.** Describes the region’s EV vision and goals through a planning horizon of 2025.
- **How We Are Going To Get There.** Identifies focus areas and strategies to achieve the defined goals, along with targets and metrics that quantify.
- **How We Stay On Course.** Outlines how the project managers will track progress toward targets, goals, and the vision, and how it will adapt to a changing landscape during the coming 18-month implementation period.
- **Appendices.** Provides a glossary of terms and list of references.

Planning Process

This Electric Vehicle (EV) Readiness and Action Plan provides a framework to support EV adoption throughout the Garfield County region. The Garfield County region, for the context of this plan, is defined as the collection of communities, community members, businesses, and visitors that live, work, and travel through Garfield County. This region is unique in that there is strong interconnectedness with neighboring communities throughout the Interstate 70 and Highway 82 corridors.

This EV Readiness and Action Plan was created in a one and a half-year process to help our community evaluate how we may reach goals set out in GCE's 2017 Energy Action Plan, updated in 2023, and set forth by the State of Colorado.

This EV Readiness and Action Plan was developed through a partnership between GCE, CLEER, Holy Cross Energy and Xcel Energy Partners in Energy, with input from over 40 community stakeholders across two workshops, four focus groups, and an online survey. The stakeholder team included representatives from the Garfield County region including local municipalities, transportation authorities, electric utilities, Colorado Mountain College staff, equity advocates, the general public, and the State of Colorado.

About Partners in Energy

Xcel Energy is an electric and natural gas utility providing energy to power millions of homes and businesses across eight Western and Midwestern states. Each community Xcel Energy serves has its own unique priorities and vision for its energy future. To continue to innovatively support its communities, Xcel Energy launched Partners in Energy in 2014 as a collaborative resource with tailored services to complement each community's vision.

About Garfield Clean Energy (GCE)

GCE is an independent, local government authority overseeing programs and services to help residents, businesses, and local governments become more energy efficient and tap clean energy as a means to creating a stronger, more resilient economy. The programs and services of GCE are managed by CLEER, a nonprofit organization working to accelerate the transition to a clean energy economy, increase independence, and reduce our contribution to climate change.

GCE is a collaborative of the following entities:

- Garfield County
- Town of Parachute
- City of Rifle
- Town of Silt
- Town of New Castle
- City of Glenwood Springs
- Town of Carbondale
- Colorado Mountain College
- Roaring Fork Transportation Authority
- Holy Cross Energy
- Garfield County Public Library District

Defining EVs for This Planning Process

This plan focuses on increasing the adoption of Battery Electric Vehicles (BEVs) and plug-in hybrid electric vehicles (PHEVs). BEVs are powered by all-electric vehicle motors, and are charged with electricity instead of fueled with gasoline or diesel. The travel range of BEVs can be anywhere from 80 to 500 miles on a single charge, depending on the vehicle's battery capabilities. Battery recharge times depend on the capacity of the battery and the amperage of the charger. Other factors include the type of charger used, level of battery depletion, and ambient air temperatures. A PHEV provides a combination of both an electric vehicle motor and a gasoline engine and produces less tailpipe emissions than a traditional internal combustion engine (ICE). PHEVs use energy from the electric vehicle motor until the battery charge is fully depleted, which can occur between 15 to 50 miles, at which point the gasoline engine takes over. The distance that a PHEV can travel on a single charge and full tank of gasoline ranges between 350 and 600 miles. The battery is charged similarly to the BEV through a plug, and the fuel tank is filled by a traditional gas station (Drive Change. Drive Electric, 2019). PHEVs can be important options for drivers with limited access to charging.

The Clean Mobility Goal in GCE's Energy Action Plan states that the "Garfield County region will transition at least 15% of all registered vehicles to zero emissions electric by 2030; support alternative fuels where electric is not yet feasible or where alternative fuels are desirable; and help increase mode share for biking, walking, and transit." While PHEVs are not "zero-emissions," climate, geographic, and economic factors influence our community's ability to rapidly adopt BEVs. Therefore, in the best interest of this community, this EV Readiness and Action Plan will encourage the transition from internal combustion engine (ICE) to include PHEVs if transition to BEVs is not feasible.

EV PLANNING CONTEXT



This EV Readiness and Action Plan builds on significant work done to-date in the Garfield County region and is designed to align with and complement existing efforts. In identifying opportunities for EV action in the Garfield County region, it is helpful to understand the area’s planning and EV adoption context. This section provides an overview of relevant planning efforts, EV adoption trends, charger installation patterns, and community characteristics with implications for EV action.

There Are Several Planning Efforts Driving EVs Forward

Colorado EV Plan 2023

The [Colorado EV Plan 2023](#) is an update to the state’s 2018 and 2020 plans and continues to accelerate adoption of EVs of all types in Colorado. The plan builds on the existing targets:

- 940,000 light-duty EVs by 2030
- 2.1 million EVs by 2035
- 35,000 medium and heavy-duty vehicles by 2030
- Includes a 2050 vision of 100% electric light-duty vehicles and 100% zero emission medium and heavy-duty vehicles

Colorado EV Infrastructure Plan

Beginning in 2022, each state is required to annually develop an [EV Infrastructure Development Plan](#) for approval by the Federal Highway Administration to receive the National Electric Vehicle Infrastructure (NEVI) Formula Program funds. Colorado’s EV Infrastructure Plan outlines the state’s strategy for utilizing the NEVI formula program funding, which is expected to provide \$56.5 million over five years to deploy EV chargers along highway corridors. In Garfield County, both Interstate 70 and Colorado State Highway 82 are eligible for NEVI funding (Figure 1).

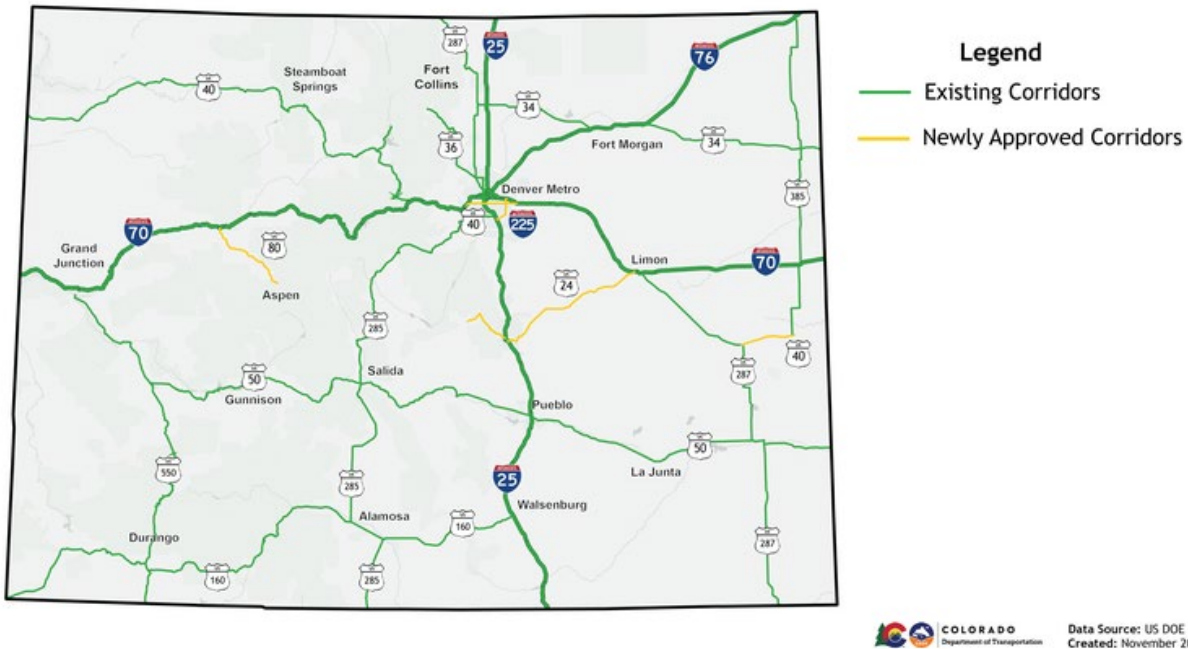


Figure 1. Federally Designated EV Corridors in Colorado, 2023.

Roaring Fork Transportation Authority (RFTA)

RFTA offers public transit services to three counties and 70 linear miles. The agency’s fleet currently includes about 90 buses fueled by clean diesel, compressed natural gas (CNG) and battery electric buses. RFTA has committed to transition 100% of their revenue and non-revenue fleet to electric by 2050. Currently, RFTA has eight electric buses, four dual port EV chargers, and is conducting electrical upgrades for four more chargers (Roaring Fork Transportation Authority, 2023). RFTA has developed and will implement a Zero Emissions Bus (ZEB) Transition Plan that includes all regional transit electrification efforts.

Xcel Energy EV Goals

Xcel Energy’s EV vision is to enable one out of five vehicles in its service area to be electric by 2030 and all vehicles to run on carbon-free electricity or other clean energy by 2050.

Holy Cross Energy EV Goals

Holy Cross Energy pledges to assist with upfront costs of charging installation, support community partners in developing a public EV fast-charging network, partner with local transit authorities and school districts in rate-adjustments at specific times of day and focus internally on beneficial electrification for HCE operations.

EV Action Led by Garfield Clean Energy and CLEER

Garfield Clean Energy and CLEER have paved the way for Garfield County’s EV Readiness and Action plan by leading a variety of efforts across the region, including EV Ride-and-Drives and workshops, webinars, website content, and educational materials on electric vehicle benefits, offered in both English and Spanish. Additionally, CLEER manages the state grant-funding entity, Colorado Clean Diesel Program, helping individuals, businesses, and government entities replace diesel equipment with electric. CLEER also acts as an independent consultant for all aspects of EVs and EV infrastructure. GCE and CLEER have collaborated with

the Colorado Energy Office’s EV Equity Advisor to ensure that outreach and programs are accessible to all community members. This includes making online and printed materials available in both English and Spanish and providing childcare and food at some community events.

CLEER also collaborated with the Colorado Energy Office in the development of the ReCharge Colorado EV coaching service, a program that has been operating for over 12 years. CLEER continues to offer free coaching in a 14-county region to individuals, businesses, government entities, multi-family housing units, and nonprofits through the ReCharge Colorado program. This program includes electric fleet vehicle events focused on fleet owners and heavy equipment operators on electrification of fleets and heavy equipment, as well as fleet charging grants, rebates, tax credits, and funding opportunities. This has built strong partnerships with vehicle dealerships, HOAs, EV installation experts and electricians, and local EV clubs.

EV Adoption Is Occurring Unevenly Across the County

Garfield County is one of the largest counties in Colorado, covering nearly two million acres. This relatively rural county is home to a mixture of small communities and larger, more urban communities (Figure 2).

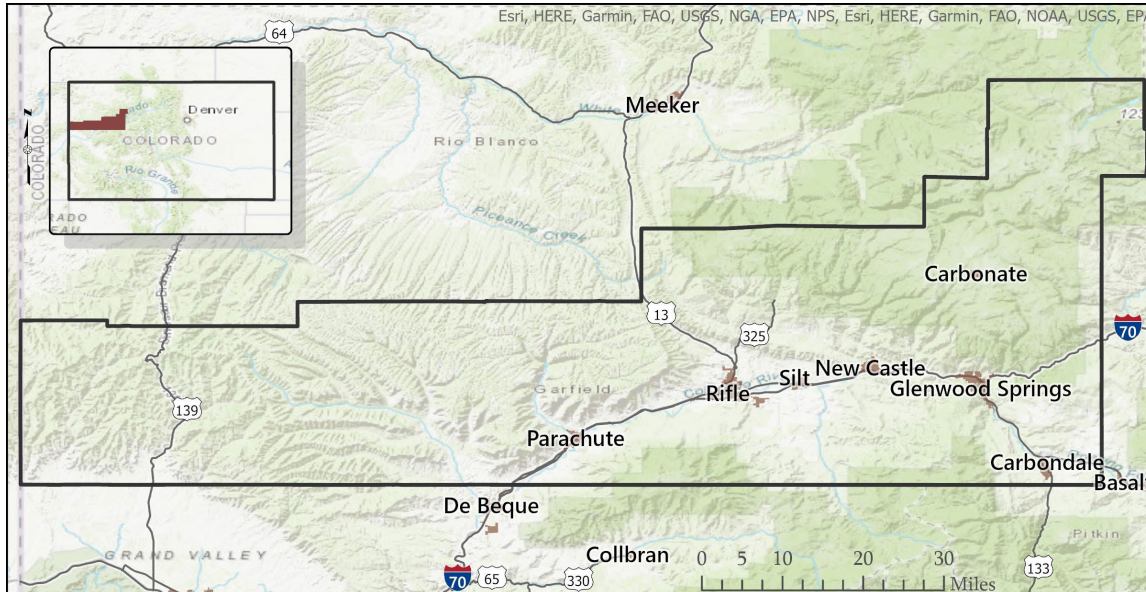


Figure 2. Garfield County Context Map.

Over 41% of residents live in unincorporated Garfield County and the fastest growing communities are New Castle and Parachute (Table 1). However, the majority of EVs are registered in the Glenwood Springs and Carbondale areas (Atlas Public Policy, 2023).

Table 1. Population Growth by Jurisdiction from the [Colorado State Demography Office](#)

Jurisdiction	2017 Population	% of 2017 County Population	2020 Population	% of 2020 County Population	% Growth
Glenwood Springs	9,735	17%	10,030	16%	3%
Carbondale	6,358	11%	6,443	10%	1%
New Castle	4,523	8%	4,918	8%	9%

Rifle	10,039	17%	10,423	17%	4%
Parachute	1,283	2%	1387	3%	8%
Silt	3,348	6%	3,538	6%	6%
Unincorporated Garfield County	23,585	40%	25,041	41%	6%
Total	58,871		61,780		

The difference in EV adoption rates across Garfield County may be driven by a number of factors, including discrepancies in household income, access to charging, geographic location, commute time, and performance concerns related to mountain environments.

Common Barriers to EV Adoption in the Garfield County Region

Common barriers to EV adoption in the Garfield County region include range anxiety, unfamiliarity with EVs, lack of workforce training, upfront cost, lack of charging infrastructure, and lack of education and awareness. In addition to these barriers, some community members may hold values that are not compatible with EV adoption. For instance, some community members may simply prefer to drive internal combustion engine vehicles. This plan does not seek to alter the values of any community member, but rather to provide useful information to all community members.

GCE and CLEER work closely with local utilities, nonprofits, municipalities, and regional and state entities to remove educational, cost, and infrastructure barriers through the provision of educational events, workshops and webinars that consider funding for EVs and EV infrastructure, workplace and multifamily housing charging infrastructure, debunking myths about EVs, workforce training, and understanding the functionality of EVs in rural mountainous environments.

One common barrier to EV adoption is the fear the EVs won't have enough charge to get to the next charging station (range anxiety). Increasing convenient access to charging along the major corridors that connect communities within the county can help to reduce range anxiety, especially for residents in more rural areas, and visitors traveling long distances within and through the county. In addition, ensuring that both new and existing chargers are well maintained and functioning through regular maintenance checks will help alleviate concerns of reliability of charging infrastructure. Workforce training within the region will also help increase community autonomy in maintaining EVs and EV infrastructure.

A lack of workplace charging and multifamily housing charging presents another barrier in the adoption of EVs, related to range anxiety. Currently, GCE and CLEER are working toward increasing charging infrastructure at the most common places to charge vehicles: at home and at work. By ensuring charging is available at these locations, the barrier of range anxiety can be eased. Through outreach and regional collaborative efforts, workplace and multifamily housing charging is increasing. Once charging infrastructure in these places increases, this barrier will no longer be a factor.

Cold temperatures and mountainous terrain can reduce range. Winter conditions can reduce passenger vehicle range by 8-9% and mountainous terrain can reduce range by an additional 7-9%. However, aggressive driving style may result in the largest reduction of range, at 20% (Dollinger and Fischeraurer, p.

14, 2021). Education to help communities understand EV range in high mountain communities and driving style presents another opportunity for reducing range anxiety.

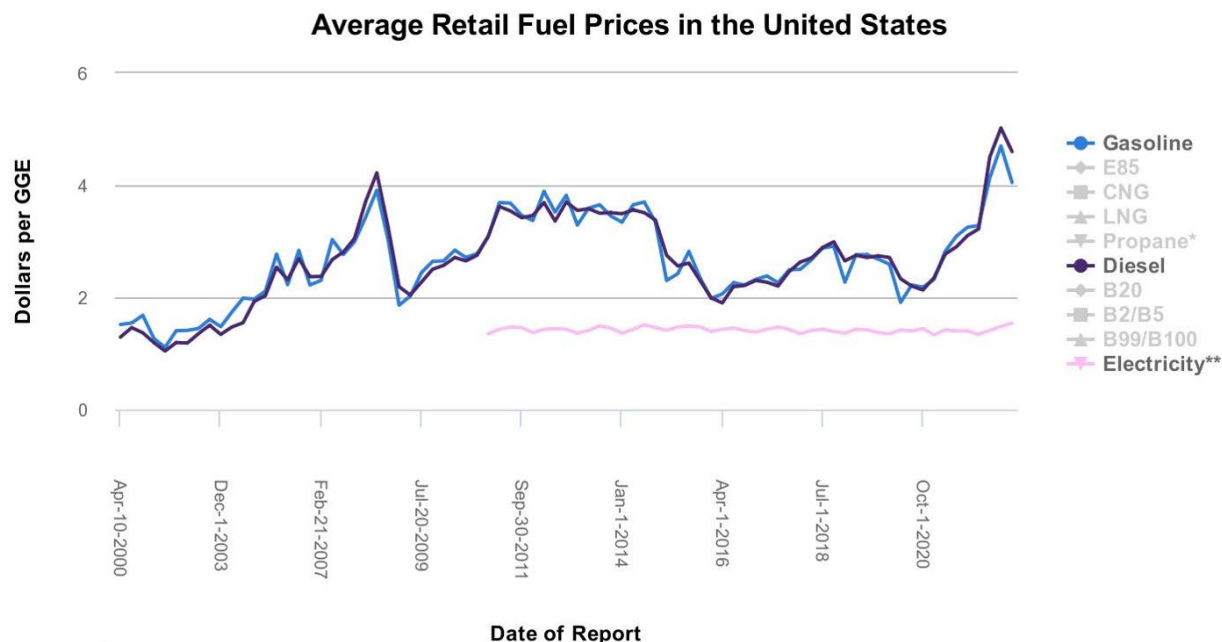
Another common barrier is the fear that EVs don't perform as well as gasoline or diesel-powered vehicles. In reality, many EVs have similar or better performance, especially when it comes to torque, vehicle comfort, reduced noise, and surrounding air quality. Community education and exposure to vehicles through Ride-and-Drive events can help overcome this barrier. Connecting with local dealers to ensure desirable models are stocked and well promoted can also help to address this concern. Ensuring that dealership employees are educated about their EVs will also aid in EV adoption in the Garfield County region.

Upfront costs of EVs are a particular barrier for many residents in the Garfield County region. Average median household income for Garfield County is \$82,772 (U.S. Census Bureau, 2022). Typical expenses including food, childcare, medical, housing, transportation, civic, and other expenses require that a household with two working adults and two children have an annual income after taxes of \$100,361 in Garfield County (Massachusetts Institute of Technology Living Wage Calculator, 2023, www.livingwage.mit.edu). Typical annual salaries range from \$32,977 to \$139,427 (www.livingwage.mit.edu). Because the cost of living is significantly higher in the Garfield County region than in other parts of the state, strategies that raise awareness of existing utility, regional, state, and federal tax credits and incentives that offset upfront costs of EVs will be key in the adoption of EVs in our region.

Longer Commutes Could Mean More Savings

The average US household spends about 13% of their annual income on transportation costs (Institute for Transportation And Development Policy, 2019). Comparatively, Garfield County residents spend 22% on transportation (H&T Index, n.d.). Transportation spending in Garfield County is driven up partially by the dispersed, rural nature of the region and by long commute times. 51% of Garfield County residents work outside of the county and the average commute time is around 31 minutes (U.S. Census Bureau, 2022). While this commute time is longer than the state average of 26 minutes (one-way), it is still well within the range of available EV models.

Despite higher upfront costs, EVs typically require about half as much money in fuel and maintenance costs, as shown in Figure 3 (Office of Energy Efficiency and Renewable Energy, 2019). In this case, the longer travel distances associated with a large, rural county could actually be a benefit, allowing drivers to save every mile.



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Figure 3: [Average retail fuel prices in the United States, 2000-2023.](#)

Residents and Visitors Could Benefit From Transportation Electrification and Charging

Residents and visitors alike could benefit from improved air quality associated with transportation electrification. Gasoline and diesel vehicles produce pollutants such as particulate matter (PM), nitrogen oxides (NO_x), carbon monoxide (CO), and volatile organic compounds (VOCs) that are harmful to human health (Office of Energy Efficiency & Renewable Energy, 2020). Battery Electric Vehicles (BEVs) produce zero tailpipe emissions and electrification of the transportation sector can therefore contribute to improved local air quality (ibid). Air pollution can be a significant concern for residents and businesses located close to major transportation corridors, as well as locals and visitors drawn to the area for outdoor recreation. A 2010 inventory of air pollutant emissions for Garfield County found that highway vehicles are the largest source of CO emissions and the second largest source of NO_x emissions, after the oil and gas industry (Colorado Department of Public Health and Environment, 2013).

Installing EV charging along major transportation corridors, as well as at workplaces and key destinations within the region, can make it easier for residents and visitors to charge on-the-go, thereby supporting increased adoption.

The Garfield County Region Can Build on Previous EV Success

EV Adoption Has Grown Over the Last Decade

In December 2023, Garfield County had a total 626 BEVs on the road, making up around 1% of the 65,228 light-duty vehicles on the road (Atlas Public Policy, 2023). Another 261, or 0.4% of vehicles on the road in 2023 were PHEVs (Atlas Public Policy, 2023). Statewide, there are 75,745 BEVs and 29,418 PHEVs on the

road, making up 1.6% and 0.6% of light-duty vehicles on the road respectively. BEVs and PHEVs together account for approximately 8% of registrations for new vehicles in the Garfield County region, and 11.6% statewide, indicating that adoption is increasing (Atlas Public Policy, 2023). Figure 4, shows the sharp growth in EV adoption since 2010.

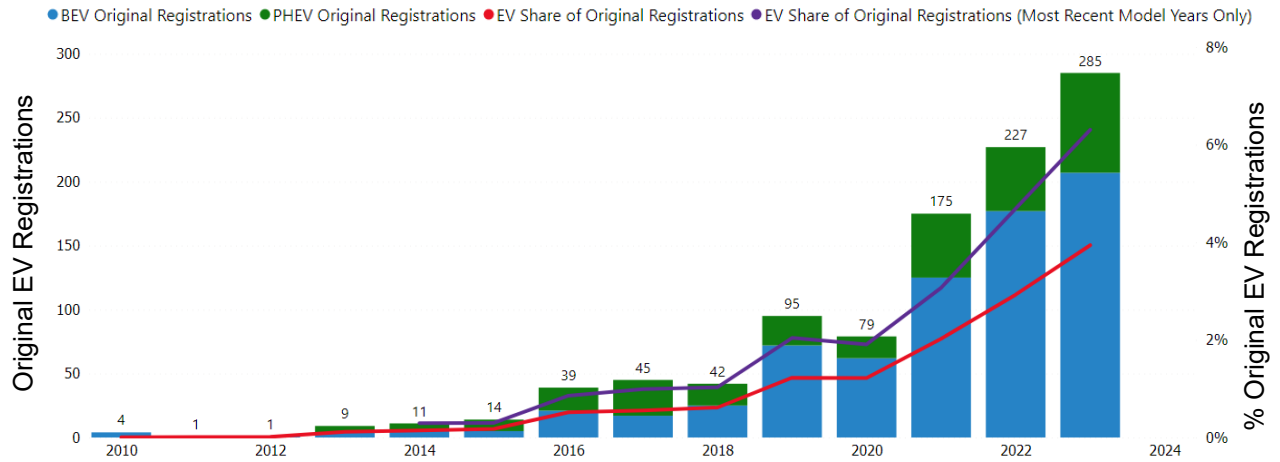


Figure 4. EV Adoption in Garfield County, 2010-2023.

Garfield County's EV Network Has Expanded, Too

As of July 2023, there are 81 Level 2 Charging Ports, and 44 DC Fast Charging ports within Garfield County (Figure 5).

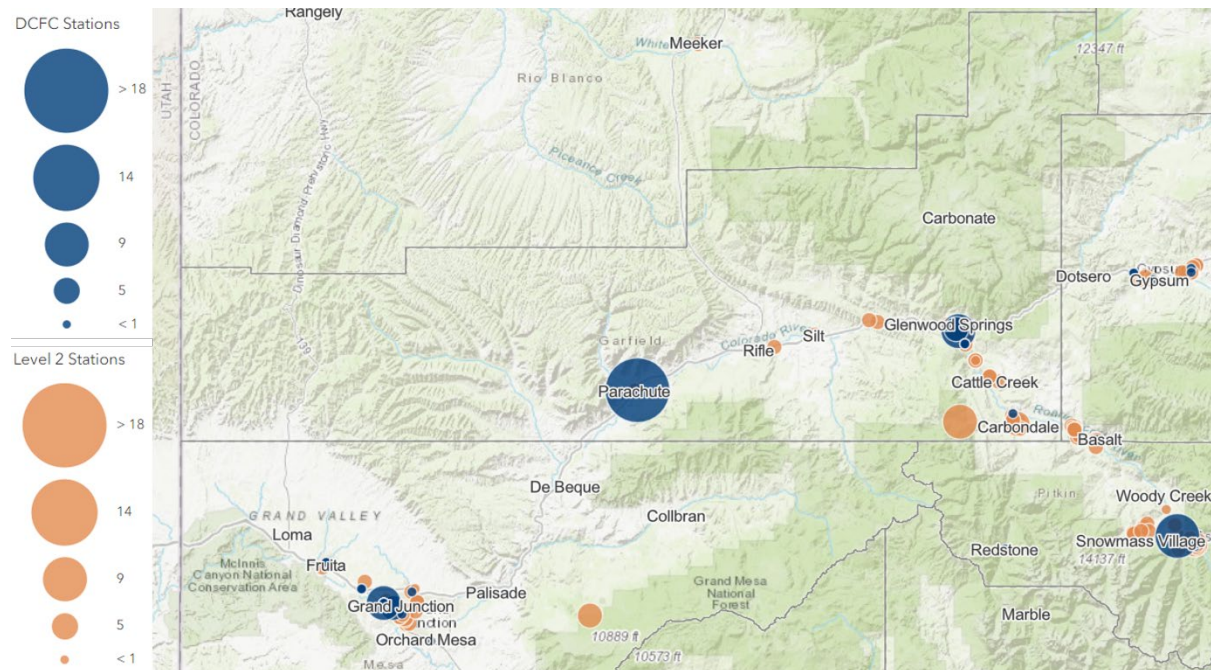


Figure 5. Level 2 and DC Fast Charging Ports in the Garfield County Region (Atlas Public Policy, 2023).

WHERE WE ARE GOING



Garfield Clean Energy's Vision states that:

Garfield Clean Energy (GCE) Collaborative will be an innovative leader in advancing energy efficiency, renewable energy, and clean transportation to protect the environment and build a strong, resilient, and diverse economy.

Across two workshops, four focus groups, a survey, and public input, the community stakeholders brainstormed and refined a vision, rooted in GCE's vision, to reflect an ideal electric vehicle future for the Garfield County region.

Our Collective Vision for an EV Future

The Garfield County region will be a community where equitable access to EVs and EV charging infrastructure is valued across all sectors. All community members and visitors will have convenient, reliable, and affordable access to EVs and EV charging.

The community stakeholders adopted the Clean Mobility goal established through Garfield Clean Energy's Energy Action Plan.

Our Metrics of Success

Transition at least 15% of all registered vehicles to zero-emissions electric by 2030.

Additionally, this plan seeks to:

- Contribute to meeting the state EV target of 940,000 EVs on the road by 2030
- Contribute to Colorado's reduction of GHG emissions targets as described in the 2021 Greenhouse Gas Pollution Reduction Roadmap

HOW WE ARE GOING TO GET THERE



The mobility section, *Goal #3: Clean Mobility*, of Garfield Clean Energy's Energy Action Plan, inspired the four focus areas we support in this EV Readiness and Action Plan.



Codes and Policy Support (C)

Identify opportunities to advance EV infrastructure through county and municipal codes and policies.



Equitable EV Access (A)

Perform outreach and engagement to all members of the community about EV benefits and resources.



EV Charging Infrastructure (I)

Identify and pursue strategic opportunities to advance the network of public charging available throughout the region





Fleet and Transit (F)

Support fleets along their transportation electrification journeys.

These focus areas serve to organize key strategies to make meaningful progress toward this plan’s vision and goal. For each focus area one or more short-term strategies were identified. These strategies were identified as a priority to implement over the next 18 months. Short-term strategies include robust action plans, with detailed scopes of work and suggested timelines.

Some focus areas also include “long-term strategies” and “toolkit strategies.” These strategies do not include action plans with detailed scopes of work or suggested timelines. These strategy types are described in more detail below.

	Toolkit strategies provide concise recommendations, best practices, or resources to support Garfield County communities advance implementation beyond the action plans identified in each focus area. Municipalities, non-profits, and other community organizations can leverage toolkit strategies to advance their own priorities. Toolkit strategies are identified with the “tools” icon.
	Long-term strategies were identified as important components to fulfilling this plan’s vision but are recommended for implementation beyond the 18-month implementation period associated with short-term strategies. Long-term strategies are identified with the “diverging road” icon.

Through Partners in Energy, CLEER will receive 18 months of support to aid the implementation of this plan. Implementation will begin following the adoption of Xcel Energy’s 2024-2026 Transportation Electrification Plan (TEP). To help prioritize activities for implementation, each of the strategies below was assigned an approximate start and end date based on a six-quarter implementation period. Q1 of implementation will be the first quarter after the TEP is adopted.

Figure 6 summarizes the strategies detailed in each focus area:





Equitable EV Access (A)
<ul style="list-style-type: none"> • Strategy A-1: Public Outreach Campaign • Strategy A-2: Work with Local Dealerships •  <i>Considerations for improving charging access for renters</i>
EV Charging Infrastructure (I)
<ul style="list-style-type: none"> • Strategy I-1: Increase Workplace Charging • Strategy I-2: Assist Multifamily Property Owners and Managers with Charging Infrastructure • Strategy I-3: Support EV Charging Along Regional Travel Corridors •  <i>Provide guidance on charging ownership and maintenance</i> •  <i>Provide guidance on how to approach Level 2 charger siting</i>
Codes and Policy Support (C)
<ul style="list-style-type: none"> • Strategy C-1: Provide Energy and EV Code Education Opportunities to Communities • Strategy C-2: Connect Developers to Incentives •  <i>Establish a process for in-house electrical permit inspection.</i>
Fleet and Transit (F)
<ul style="list-style-type: none"> • Strategy F-1: General Fleet Electrification • Strategy F-2: Micro-mobility Electrification • Strategy F-3: Transit Electrification

Figure 6. Summary of All Strategies by Focus Area

Figure 7 demonstrates the connection between GCE’s Energy Action Plan, and the Vision, Focus Areas, and Strategies for the EV Readiness and Action Plan for the Garfield County Region.

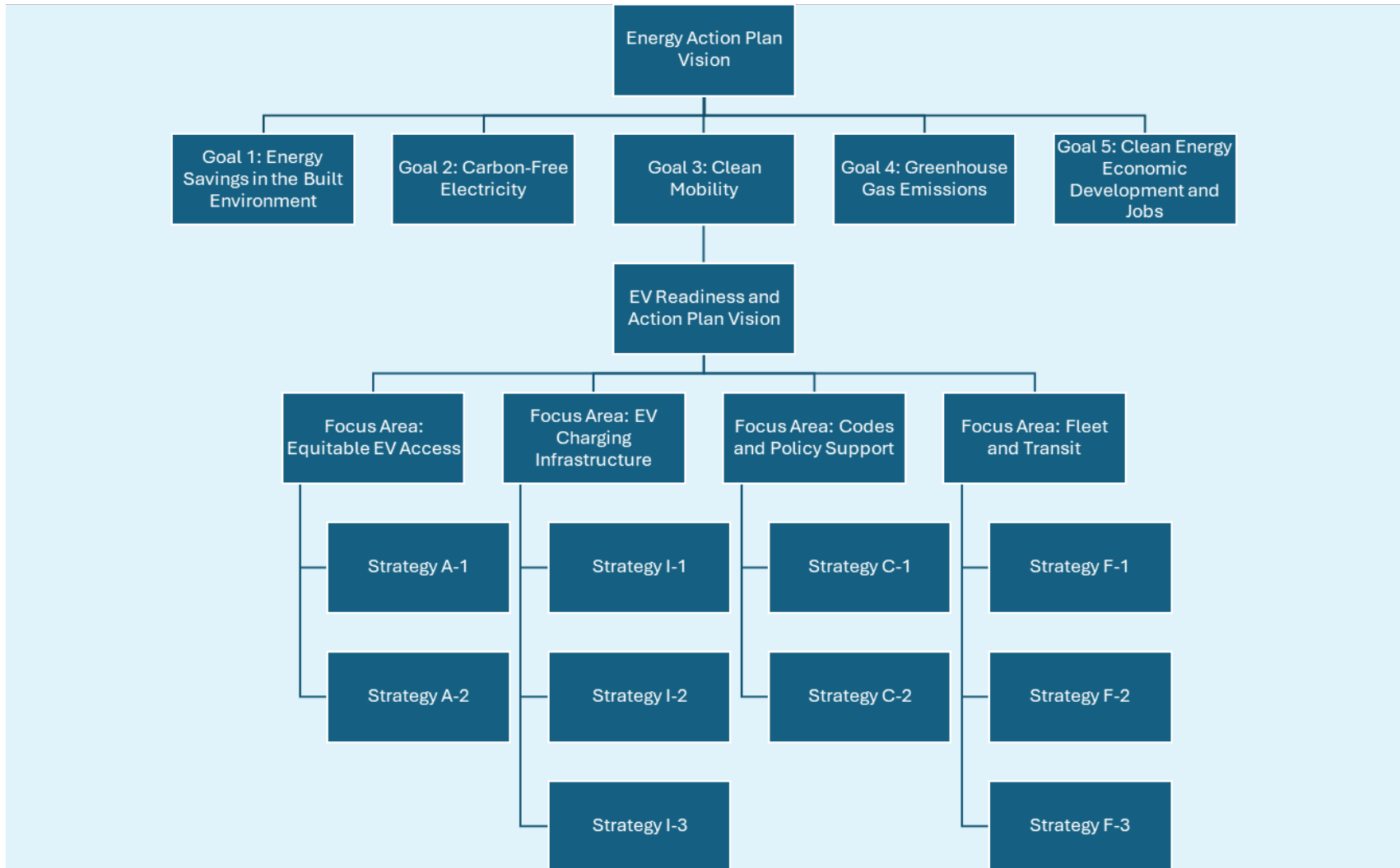


Figure 7. Connection between the GCE Energy Action Plan and the EV Readiness and Action Plan for the Garfield County Region



Focus Area: Equitable Access to EVs (A)

Not all community members have equal access to EVs in the Garfield County region. The objective of this focus area is to provide access to incentives and information that will make it easier for all community members to purchase EVs and access convenient and reliable charging. This focus area will also benefit from the implementation of the EV Charging Infrastructure focus area, which will support equitable charging access throughout the region, and the Codes and Policy focus area, which will also support EV infrastructure deployment.

Key Context

Rural Community Members Adopt EVs at Lower Rates

Community members in rural and remote portions of the County are not reaping the benefits at the same rate as their more urban counterparts. Rural areas tend to have lower rates of EV adoption in part because they lack EV charging infrastructure (Environmental and Energy Study Institute, 2021). This is true for the Garfield County region, as several areas of the region are considered “charging deserts.” Within the 14-county ReCharge territory that CLEER oversees, only one town in Garfield County does not have any EV charging infrastructure, but it is within four miles of EV charging (data based on Atlas Public Policy, 2023).

Lower Income Residents Face Cost Barriers at Initial Purchase

The upfront costs of EVs can be more expensive than internal combustion vehicles, for both new and used vehicles. Given the cost of living in the Garfield County region, the priority has not been the purchase of electric vehicles. Lower-income households are not evenly distributed across the County. Western portions of Garfield County demonstrate higher rates of low-income households (90-95 percentile) compared to eastern, more populated portions of the county (Figure 8) (EJSCREEN, 2023). Still, the areas surrounding Glenwood Springs and Carbondale show relatively high proportions of low-income households (70-80 percentile). The map below defines low income as households with income less than or equal to twice the federal “poverty level.” This is exacerbated across all income levels when compared to the cost of living for all Garfield County residents.

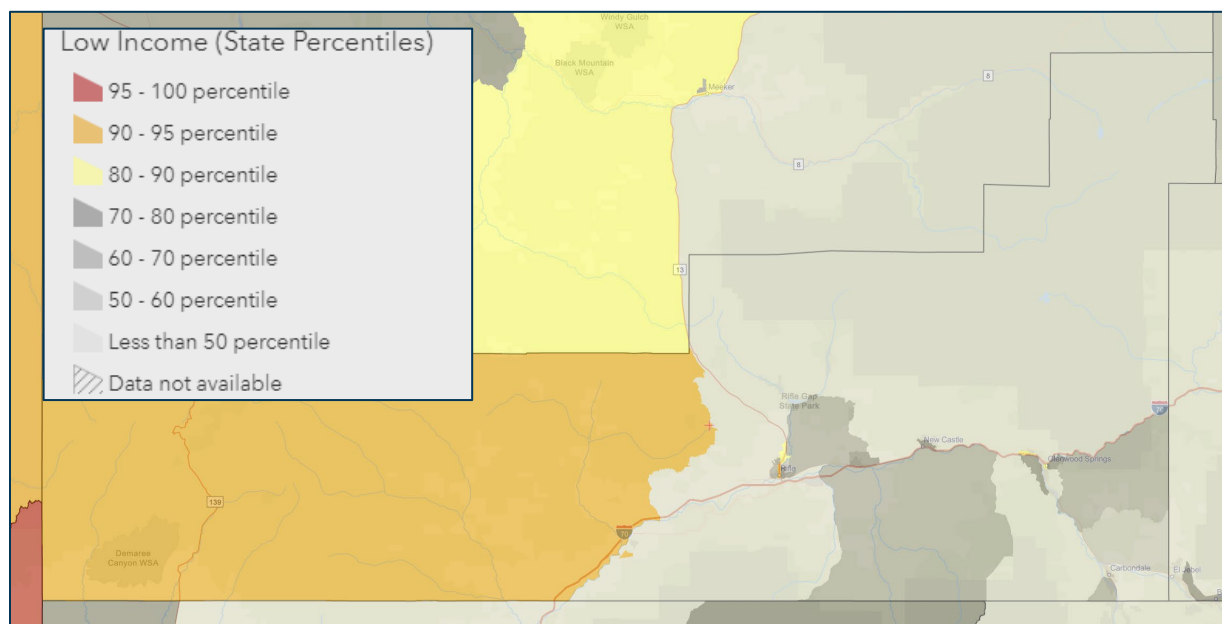


Figure 8. Low Income Percentile Distribution by Census Tract as Defined by EJSOREN, 2023.

Renters and Multifamily Lack Access to Convenient Charging

Almost 80% of EV charging occurs at home (Idaho National Laboratory, 2015). At home charging is both convenient and cost effective. However, not all residents have access to convenient charging at home. Renters and multifamily residents are more reliant on property owners to make EV charging investments and property owners may not have sufficient incentives to make that investment. In Garfield County, 35% of housing units are multifamily (e.g., duplexes, townhomes, apartments, condominiums, or mobile homes) (American Community Survey, 2019). Additionally, 31% of homes are renter-occupied.



Improving Charging Access for Renters

Improving charging access for your rental community can occur through multiple outcomes. Consider the following tips to help improve access in your community:

- **Engage with property owners:** Identify local property managers, HOAs, and developers in the community – this could include mailing lists or associations. If none are available, consider developing a network or contact list. CLEER can be a resource to help develop these lists. Develop resources to help property owners understand the benefits of installing EV infrastructure and the resources to support installation (including financial incentives, potential contractors, fee structure information). Share those resources with tenants and consider offering incentives for installing EV charging stations. For communities with a rental licensing process, consider requiring proof of accessible EV charging.
- **Equip tenants:** Connect local tenants who own or are interested in owning an EV and equip them with language to work with their landlords. Consider connecting with tenants at an interactive event, like an EV Ride-and-Drive. Explore this [California Plug-in Vehicle Collaborative Guide](#) for approaching landlords about EV charging.
- **Install accessible public charging:** Some rental properties may not have access to a garage or the property owner may be unwilling to install EV charging. Consider identifying areas of your community with a high percentage of renters and look for common sense locations to install public EV charging. This can include charging within walking distance of the rental properties or at nearby community amenities like parks, libraries, or grocery stores that might get frequently used by renters.
- **Update building codes** – Ensuring that charging is available at new multifamily construction is key to lowering the upfront cost of installing charging. For more information on strategies for updating building codes to support EV charging, go to Focus Area: Codes and Policy Support.

For more tips and ideas, check out the [Xcel Energy Partners in Energy EV Toolkit](#)

Language and Age Can Be a Barrier to Information Access

Access to information remains a barrier for many community members in Garfield County, for a variety of reasons. Carbondale, Glenwood Springs, New Castle, and Rifle have the highest proportions of limited English-speaking households (Figure 9, EJSSCREEN, 2023). However, the northeast, central, and western portions of the county also have limited English-speaking households (EJSSCREEN, 2023). Connecting with key organizations who work with diverse populations will be essential to successfully removing language as a barrier for equal access to information.

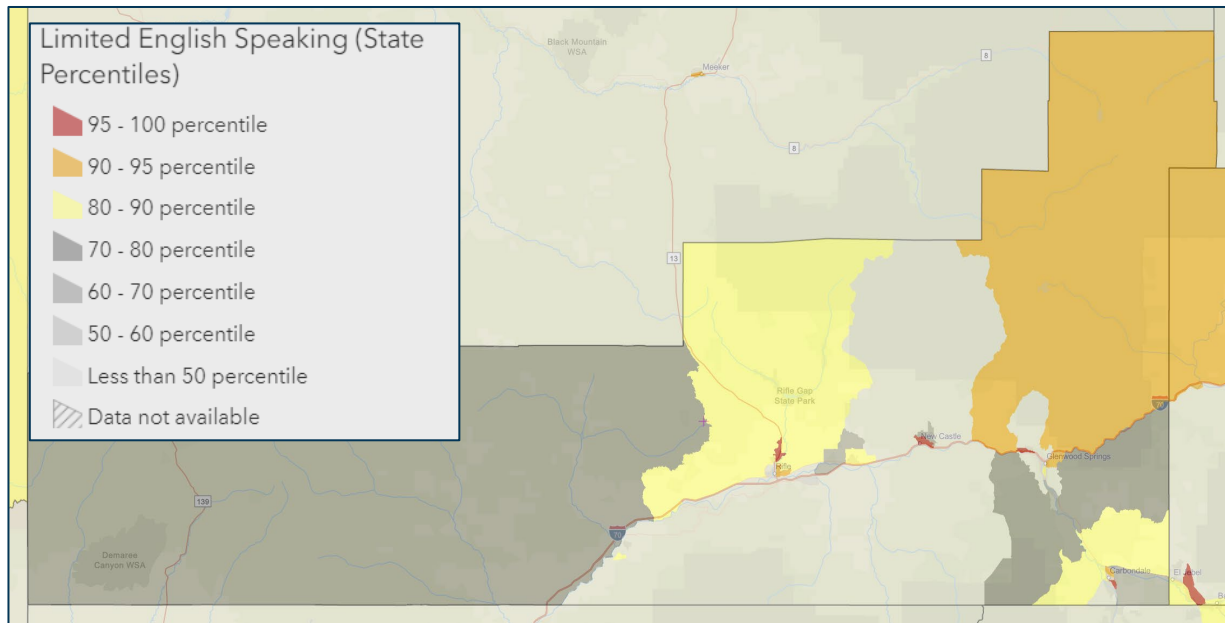


Figure 9. Limited English Proficiency Percentile Distribution by Census Tract as Defined by EJSSCREEN, 2023.

Short Term Action Summary

- Strategy A-1: Public Outreach Campaign
- Strategy A-2: Work with Local Dealerships

Strategy A-1: Public Outreach Campaign

Description

Conduct educational campaigns to inform the public about EV benefits and available incentives, with different messaging and approaches for low-barrier (e.g., single family, homeowners, 2+vehicles) and high-barrier (e.g., lower-income, renters, mobile home residents) groups, tailoring campaigns visually and linguistically.

Key Context

- General context
 - EV supply chain issues are beginning to resolve. EVs are becoming easier to access from dealerships, a variety of makes and models are becoming available, and prices are coming down.
 - There are several incentives available through utility providers, the state, and federal government to lower the cost of purchasing or leasing an EV and to lower the cost of installing at-home charging infrastructure. Many of these incentives can be combined.
 - GCE and CLEER provide community engagement opportunities to educate residents about EVs. Past efforts have included community workshops to share information about EV technology, charging, and incentives, including EV Ride-and-Drive events with translation services, food, and childcare provided. Events are often promoted through social media, newspapers, radio, print posters/flyers.
- Equity context
 - There is a lack of information published in multiple languages in the Garfield County region that is culturally relevant to diverse communities.
 - There are over 55 mobile home parks in Garfield County and 1 in every 5 Latino homes in CO is a mobile home (Protége, 2022).
 - 47% of Latinos in Garfield County are renters (Protége, 2022).
 - Many older people who live in Western Garfield County are on disability and Medicare and have difficulty accessing healthcare and food due to lack of access to a functioning vehicle.
 - The used EV market is growing. It is important to support the growth of the used EV market in Garfield County and to connect residents with these lower-cost vehicles.
 - Though CLEER leverages best practices when providing community engagement opportunities, there remains a gap in outreach to diverse and multilingual populations.
- Strategy A-2 will be vital to include in the outreach plan.

Timing

- Start with outreach plan development and understanding barriers in Q1 of implementation
- Begin developing collateral by Q3 of implementation
- Ongoing

Target Audience

- Residents with low barriers to EV adoption (e.g., single family homeowners with two or more vehicles and access to a garage)
- Residents with some barriers to EV adoption (e.g., multifamily residents, renters, households with access to one or fewer vehicles, households with lower incomes)

Target Outcomes by End of 2025

- 80 Participants in Xcel Energy’s EV Accelerate at Home
- 100 Participants in Xcel Energy’s Optimize Your Charge
- 100 Participants in Holy Cross Energy’s EV Programs
- Outreach at two existing in-person events

Scope Elements

<p>Summarize resources available by different audiences</p>	<ul style="list-style-type: none"> • Collate relevant information (e.g., EV 101, lease vs own options) and resources (e.g., what rebates are available and how resources stack together) • Review information and resources
<p>Develop outreach plan</p>	<ul style="list-style-type: none"> • Identify key champions and/or trusted community liaisons • Identify outreach channels • Coordinate with dealerships to identify vehicle exchange participants • Compile information into an outreach and communications plan
<p>Develop and distribute collateral</p>	<ul style="list-style-type: none"> • Reach out to identified champions and liaisons • Lead collateral and messaging development • Provide guidance and feedback on collateral and messaging • Lead Spanish translation of collateral • Distribute collateral

Resources Available to Support

- Utility Resources
 - [Qualify for Enhanced Rebates](#)
 - [EV Charging Programs](#)
 - [Home Charging Rebate](#)
 - Additional Income-Qualified Home Wiring Rebates are available for those at 80% or below of Area Median Income

- [State and federal funding examples](#)
- Research
 - ICCT Working Paper: [When might lower-income drivers benefit from electric vehicles?](#)

Strategy A-2: Work with Local Dealerships

Description

Work with local dealerships to advance the availability of new and used EVs for sale and lease in Garfield County, and to make the purchase process more transparent and efficient.

Key Context

- Seven dealerships in Garfield County are selling EVs.
- Dealerships in the Garfield County region were offered an opportunity to give feedback on EVs via a survey. The results indicated that some are ready to collaborate on EVs and others are experiencing barriers to selling EVs. Most expect interest in EVs to increase over time.
- Results also indicated that in-person collaboration with dealerships is the most effective way to engage.
- Xcel Energy’s dealership program supports relationship building with local dealers to promote EVs. Xcel Energy is interested in making further inroads on the Western Slope.
- Xcel Energy is working with Tesla to increase in-store presence.
- There are existing relationships with Tesla, Rivian, and Lucid dealerships in the region.
- Dealerships play an important role in convincing car buyers to buy electric, and it is important that they are well trained and that policies are EV-friendly (e.g., not requiring non-refundable deposits).
- Original equipment manufacturers often conduct sales training.
- Federal tax credits for used EVs require going through a dealership and the dealership processes the paperwork.

Timing

- Short-term (Q1/Q2 of implementation)
- 2024 dealership education workshop

Target Audience

- Local dealerships currently selling EVs in Garfield County

Target Outcomes by End of 2025

- 5 participants in the Vehicle Exchange Colorado program
- 5 participants in Xcel Energy preferred dealership partners program
- 5 dealership participation in events

Scope Elements

<p>In-person dealership engagement/relationship building</p>	<ul style="list-style-type: none"> • Host EV Ride-and-Drive events in partnership with local dealerships • Promote policy to limit/reduce non-refundable deposit policies • Encourage providing state and federal incentives upfront
<p>Explore opportunities to increase stock of EVs (new and used)</p>	<ul style="list-style-type: none"> • Explore opportunity for state and regional support of used EV markets through leasing. The City of Lakewood, Minnesota, has a program similar to this that can be used as a starting place for research
<p>Dealership education workshop</p>	<ul style="list-style-type: none"> • Host workshops and invite dealerships in the County to provide overview of EVs and charging technology, and educate on available incentives • Develop and provide “cheat sheets” with terminology and questions asking for dealers to help connect customers with vehicles that fit their needs, including information specific to the locale, such as range needs, incentive eligibility, options for leasing, differences between internal combustion engine vehicles and EVs for fuel and maintenance costs, and how and where to charge
<p>Resources Available to Support</p>	
<ul style="list-style-type: none"> • Utility Resources <ul style="list-style-type: none"> ○ EV Dealership Network • State and Federal Resources <ul style="list-style-type: none"> ○ Electric Vehicle (EV) Charging Station Grants 	



Focus Area: EV Charging Infrastructure (I)

In Garfield County, 55% of residents commute 31 minutes or less (American Community Survey, 2020). For these drivers, EVs can meet daily mileage demands. However, public charging opportunities still play an important role in driving EV adoption, especially for drivers with long drives or without access to home or workplace charging, or in areas where chargers have not been maintained.

The objective of this focus area is to identify and pursue strategic opportunities to advance the network of public charging available throughout the region.

Key Context

Public Charging is Important in a County Setting

Though 80% of charging occurs at home, providing public charging is an important component of advancing EV adoption at a county scale (Idaho National Laboratory, 2015). Despite over half of Garfield County residents commuting 30 minutes or less, many county drivers have longer commutes, crossing county lines and commuting 60 or more miles per day, one-way (American Community Survey, 2020). These drivers may need to top-off mid-day. Workplace charging is a great solution for those with longer commutes. However, it is important to note that currently not all workplaces are suitable for EV charging. In-home care providers, landscapers, and construction workers are a few examples of commuters who may not have easy access to workplace charging. Charging along major travel corridors and at mid-trip destinations (e.g., gas stations, rest stops, malls, coffee shops) can provide charging solutions for commuters without workplace charging access. Increasing workplace charging is a key goal of this EV Readiness and Action Plan.

Enroute charging can also help drivers completing inter-county trips, and Garfield County's tourists traveling long distances to their destinations. In addition to enroute charging, tourists and residents alike may benefit from charging opportunities at popular destinations, like the Glenwood Hot Springs.

Finally, public charging may be the only viable option for residents who do not have access to at-home charging, such as in multifamily housing complexes and as identified in the Equitable Access to EVs focus area. Public charging sites accessible to residents without home-charging can help remove critical charging barriers.

Garfield County Has an Existing Network of Public Charging

Garfield County is not starting from scratch and at the time of writing this plan, there are 89 Level 2 charging ports and 44 DC Fast Charging ports across the county. However, the majority of DC Fast Charging stations are in Glenwood Springs, with one located in Carbondale (Figure 10). There are no DC Fast Charging stations in New Castle or Silt currently, and there are no EV charging stations along US 13 between Rifle and Meeker, a 42-mile distance. This underscores some of the challenges for EV adoption in rural and remote areas yet provides an opportunity for the region to work toward creating more robust charging infrastructure in these remote areas. Even where charging stations are present, drivers may worry about the operational capacity of charging stations (e.g., will there be a working charging station available when needed). This highlights the importance of monitoring charging station utilization and ensuring charging station maintenance. Finally, with a variety of different charging types available, some drivers may worry about the availability of the right plug type for their vehicle. Many charging station websites and apps allow users to filter by plug type, charging speed, and availability, to help drivers identify the best locations to charge.

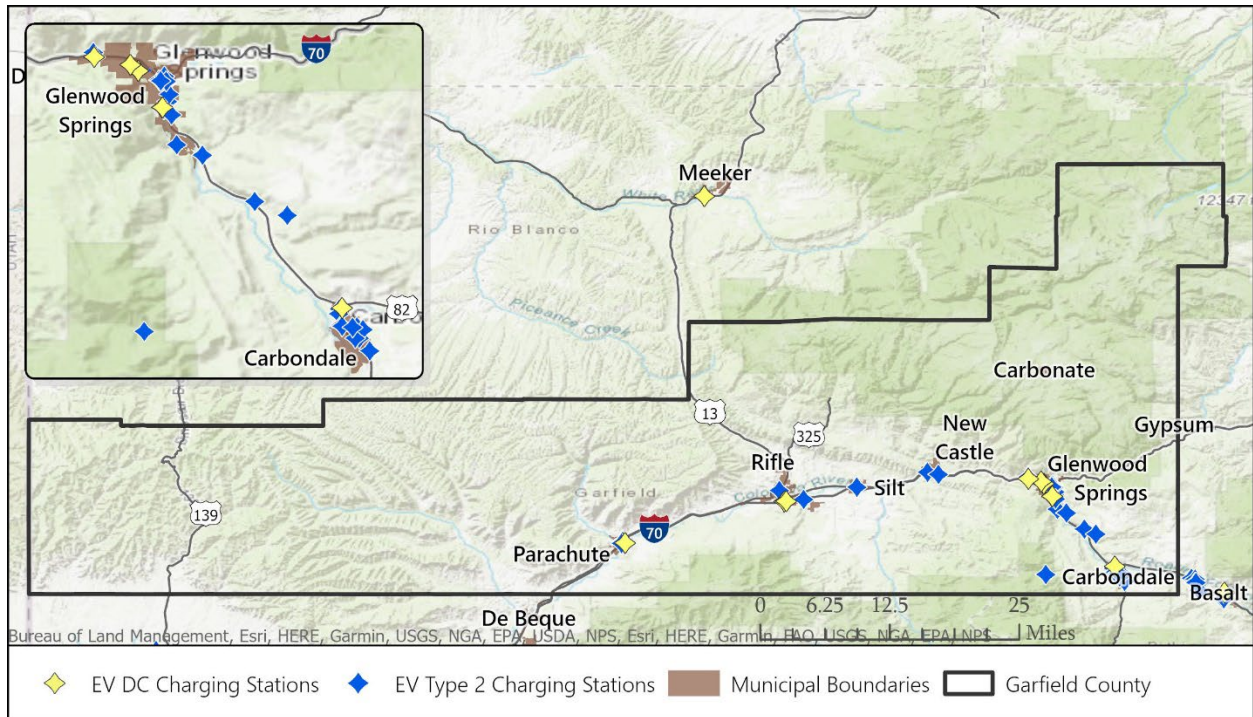


Figure 10. Distribution of EV Charging Infrastructure in Garfield County, 2023.



EV Infrastructure Ownership and Maintenance Models

There are two basic models of ownership for public charging stations.

- 1) **Site Owner Ownership:** The site owner owns and operates the EV charging station. The site owner is responsible for maintenance and retains 100% of revenues.
- 2) **Third-Party Ownership:** In this management model, a third-party, like an EV charging station manufacturer or utility, retains ownership of the charging station. The parameters of this agreement vary, but may include installation, operation, and maintenance at no or some cost to the site owner. Depending on the agreement, the site owner may receive no revenue, or some revenue based on the fee structure.

Regardless of ownership model, there is typically a fee structure associated with using the EV station. When selecting your fee structure, consider your goals. Are you simply trying to increase no- or low-cost charging opportunities, to offset electricity costs, or to make a profit?

The following structures can be used on their own or in combination:

- **Fixed Fee:** Users pay a single fee no matter how long they are parked in a spot. This structure is similar to a general parking fee where the user pays a single fee to enter the parking lot or garage.
- **Hourly Fee:** Users pay by the hour. Fee structures can be set up to roughly offset the cost of electricity consumed per hour of charge or to allow the operator to make a small profit. There are also options for fees for taking up a parking space with a charger after the vehicle has already been charged, which encourages drivers to move their vehicle once it is charged.
- **Energy Use Fee:** Users pay to charge per kilowatt hour (kWh) consumed. This is similar to how gas-powered vehicles are fueled, and most fairly represents payment for the electricity being provided.
- **No-Fee:** Allows users to charge their vehicle without paying any fee.

There is no single “right” ownership or fee model. When exploring your charging options, consider your goals for installing the charging station and think through your ability to maintain the infrastructure over time. For more tips and ideas, check out the [Xcel Energy Partners in Energy EV Toolkit](#)

Identifying the Right Infrastructure for the Right Need

When installing public charging, it’s important to provide the right charging opportunities to match a driver’s needs. Level 2 charging stations can add 25-40 miles of range per hour of charging. These charging stations use less power than DC Fast Charging stations and therefore usually cost less to install and operate. Level 2 charging stations are ideal for drivers who are planning to park at a workplace or destination for longer periods of time.

DC Fast Charging, sometimes referred to as Level 3 charging, can add around 200 miles of range in under 20 minutes for some vehicles. DC Fast Chargers are ideal for drivers looking to re-charge enroute and are generally best located along major transportation corridors. Different charging stations will have different power supply requirements. EV charging station site owners should coordinate with the electric utility serving

the site as early as possible. Work with the local utility to ensure there is sufficient power supply, to identify potential infrastructure needs, and to understand available programs and rebates.

Leveraging Funding to Advance Our Goals

One final important consideration when siting public charging is the availability of supplemental funding. Recently, communities have experienced an abundance of utility, state, and federal funding to support the advancement of EV charging infrastructure. While some of these funds are applicable to all infrastructure projects, other funding opportunities are geared toward disproportionately impacted communities as defined by the State (Figure 11) or Justice 40 communities, as defined by the Federal government (Figure 12). These funds are intended to advance the equitable distribution of EV charging opportunities. Given the importance of equity in achieving Garfield County's EV vision, the funding available to install EV infrastructure in disproportionately impacted communities may play an important role in implementation.

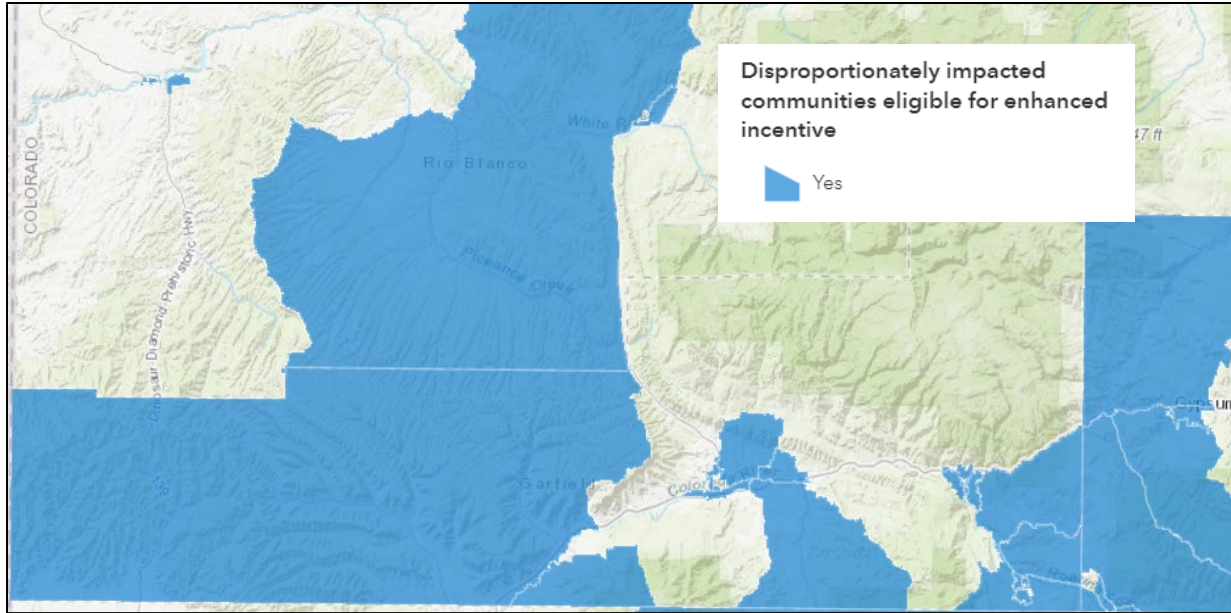


Figure 11. CEO Disproportionately Impacted Communities, 2023.



Figure 12. Colorado EnviroScreen Disproportionately Impacted Communities, 2023.



Guidance on Charging Infrastructure in Your Community.

When looking to site EV charging there are several factors to consider. The following is not an exclusive list but can be helpful to begin brainstorming ideas. It is recommended to invite the utility, potential site owners, and the surrounding community into siting conversations as early as possible.

- **Demand:** Work with existing charging station owners/operators to understand current utilization of charging in your community. Are there opportunities to add charging capacity where chargers already exist? Look for latent charging demand by connecting directly with your community members via surveys, intercept interviews, or community meetings. Where would community members find charging most helpful?
- **Dwell time:** How long will someone remain parked in a single location. The longer the “dwell time” the less power is needed for the charger. Movie theaters, downtown areas, libraries, and other public buildings might be good options for Level 2 charging. Rest stops near major highways might be a better opportunity for DC Fast Chargers.
- **Economic Drivers:** In addition to dwell time, consider where people stop and spend their time and money. Locating Level 2 charging stations near major corridors, in downtown areas, or in shopping districts can encourage drivers to stop and stay a while.
- **Gaps:** Look at the distribution of EV charging in your community. Are there obvious gaps or opportunities to enhance equitable access to EV charging by placing charging at or near multifamily complexes or in lower-income areas of your community.
- **Funding:** Some areas may be eligible for additional funding (see Figure 11 and Figure 12 above for more detail). Consider targeting areas eligible for additional funding to address equity gaps while reducing upfront costs.

Short-Term Action Summary

- Strategy I-1: Increase Workplace Charging
- Strategy I-2: Assist Multifamily Property Owners and Managers with Charging Infrastructure
- Strategy I-3: Support EV Charging Along Regional Travel Corridors

Strategy I-1: Increase Workplace Charging

Description

Work with major employers in the region to build out workplace charging infrastructure.

Key Context

- Studies have shown that employees of workplaces with EV charging are six times more likely to own an electric vehicle than those at workplaces without EV charging (US DOE, 2016). Though most of EV charging occurs at home, supporting the adoption of EV charging at the workplace is an important strategy to bolster EV adoption overall.

- Workplaces with long dwell times (e.g., 6-8 hrs.) are a good fit for lower-wattage charging (e.g., 6.6KW, delivering 25 miles of charge per hour). Low wattage charging can be less expensive to provide, and it is often possible to support simultaneous charging at multiple ports.
- It is important to meet existing demand (e.g., locate chargers at workplaces with employees that already own EVs) and to remove barriers (e.g., locate chargers at workplaces where there are currently few or no EV drivers, to support and encourage adoption). For example, Grand River Health medical and non-medical staff recently completed a survey which revealed that 50% of medical employees and 25% of non-medical employees would consider getting an EV if charging stations were available on site.
- Access to charging may not be the only barrier for some community members (e.g., upfront cost of vehicles may be a barrier). Providing charging alone may not be enough to incentivize these community members to lease or purchase an EV and should be paired with other incentives or support where possible.
- Workplace charging can be single purpose (employee-only charging) or multipurpose (e.g., employee, fleet, and/or public charging). Multi-purpose charging may require special management (e.g., signage) to ensure employee access during working hours and community access otherwise.
- Workplace charging can leverage different fee structures to meet various needs (e.g., free charging to incentivize employee charging or charging for a small fee to offset operational and/or electricity costs).
- Workplace charging is also safe. Some people prefer workplace charging over a place in a public parking lot or random business because they can charge during the day, safely.

Timing

- Q3-Q4 of implementation

Target Audience

- Large employers within Garfield County: hospitals (Valley View Hospital, Grand River Health), medical centers (Roaring Fork Family Practice), grocery stores, hardware stores, lumberyards, Sunlight Mountain ski area, Municipal/County governments, schools, childcare facilities, hot springs; local and state parks.

Target Outcomes by End of 2025

- 10 participants in Xcel Energy EVSI programs
- 5 Holy Cross Energy program participants
- 20 staff surveys administered by employers
- 20 businesses pledged to offer EV charging (charge at work pledge)

Scope Elements

<p>Prioritize workplaces for targeted outreach</p>	<ul style="list-style-type: none"> ● Develop a list of priority businesses based on anticipated employee and public demand, jurisdiction, and dwell time (e.g., hospitals, schools, governments, offices) ● Procure utilization data for existing charging stations (e.g., through Colorado Energy Office) and use to inform an assessment of demand for additional charging in specific areas ● Identify prioritization indicators for charging locations, such as proximity to multifamily, transit, population density and equity factors including State of Colorado Disproportionately Impacted Communities and Justice40 Disadvantaged Communities ● Map priority businesses along with identified prioritization indicators ● Support, to use map to develop a prioritized list of workplaces for outreach
<p>Develop language and key messaging</p>	<ul style="list-style-type: none"> ● Develop talking points for outreach and provide support to employers, for example: <ul style="list-style-type: none"> ○ Provide employers with a workplace charging survey template ○ Work with employers to identify charging opportunities where parking is limited ○ Identify what technology is available and help employers understand which could be a good fit for the workplace ○ Develop recommendations for siting, policy, signage, fee structure based on charging audience ○ Promote Charge at Work Pledge ○ Connect workplaces with Drive Clean Colorado Watts@Work and with Xcel Energy white glove EV advisement services
<p>Engagement</p>	<ul style="list-style-type: none"> ● Develop outreach materials including flyers with basic information and resources ● Distribute outreach materials to prioritized workplaces ● Host webinars and/or listening sessions for employers to learn about the benefits and opportunities associated with workplace EV charging
<p>Develop success stories</p>	<ul style="list-style-type: none"> ● Identify and select one or more workplaces that have installed EV charging to spotlight ● Request testimonials or quotes from workplace(s) that installed charging and use to develop case study success stories ● Use spotlights when engaging with other workplaces

Resources Available to Support

- General resources

- [Drive Clean Colorado Watts@Work](#) – provides technical assistance to support the deployment of workplace charging
- Utility Resources
 - [Xcel Energy workplace charging programs](#)
 - EV Advisors
 - EV Supply Infrastructure Program, including option for Xcel Energy owned charging station
 - Critical Peak Pricing Program
 - Income Qualified and Higher Emissions rebates
 - [Holy Cross Energy Charge at Work programs](#)
 - Evaluation and planning assistance
 - Rebate for ChargePoint Level 2 chargers
- [State and Federal Resources](#)

Strategy I-2: Assist Multifamily Property Owners and Managers with Charging Infrastructure

Description

Provide targeted coaching and technical assistance to multifamily housing property managers and owners.

Key Context

- An average EV driver does 80% of their charging at home and home charging is typically more convenient, safer, and lower cost than public charging.
- Many multifamily residents do not have access to home charging and may not have jurisdiction over installation and ownership.
- As reported by stakeholders, potential barriers to multifamily charging installation include:
 - Electrical capacity concerns: some multifamily properties may be concerned about the capacity of electrical infrastructure to support additional demand. New chargers can often be paired with energy management systems to monitor load for the property and control load on chargers.
 - Upfront cost: installing charging infrastructure may not be feasible without passing costs on and impacting tenants.
 - The costs associated with charger installation can include: excavation, concrete, and electrical work.
 - Local focus group participants did not see removing/replacing pavement as a major cost barrier.
 - Costs may increase if hand digging is required.
 - Even accounting for state grant funding, the cost may still be too high. Some communities, such as Eagle County, are addressing this cost gap by providing additional funding for multifamily and income-qualified locations.
 - Ownership and maintenance: determining who is responsible for paying ongoing charging station maintenance and electricity costs.

- Many station models have a 5-year warranty.
 - Availability of parking spaces: space constraints and/or compliance with grant requirements for accessible spaces may make it difficult for property managers and owners to accommodate spaces restricted for EV charging.
- As reported by stakeholders, cost allocation considerations include:
 - Fee systems may vary by parking ownership:
 - Developments with some community parking: a point of sale system may be most appropriate, potentially with a small profit margin over electricity costs built in to pay for the system/future maintenance
 - Developments with private parking: utilize unit-specific metering to avoid additional metering cost and include charging electricity costs in existing electrical bills
 - Potential incentive for property owners to provide charging if they can generate a profit
 - It is important to consider equity and recognize that high fees have the potential to negate fuel cost savings for EV drivers.
- As reported by stakeholders, other considerations include:
 - Trade-offs by placing chargers in the public right-of-way for multifamily lots without parking facilities.
 - Public charging at nearby locations can provide an alternative charging solution but is significantly less convenient than charging accessible on the property.
 - Consider installing additional and oversized conduit to accommodate more or larger chargers in the future.

Timing

- Q3-Q4 of implementation

Target Audience

- Multifamily property owners
- Multifamily property managers
- Silt Tiny home community
- Garfield County Housing Authority (GCHA)
- Homeowners Associations (HOAs)

Target Outcomes by End of 2025

- 10 EV charging stations installed at or within 0.25 miles of multifamily buildings

Scope Elements

Identify multifamily housing

- Collate list of multifamily properties
 - Garfield County Housing Authority maintains employee and affordable housing
 - Voter data can be collected through County Clerk

<p>Narrow to a target audience</p>	<ul style="list-style-type: none"> ● Conduct a survey of multifamily residents to identify areas with a high % of EV ownership or high interest in EV ownership in next two years ● Conduct a mapping exercise (connect with mapping for Strategy I-1) to identify multifamily within 0.25 mile distance of public facilities to allow opportunities for public overnight charging by multifamily residents (for example, CLEER offices daytime use by employees and nighttime use by residents) ● Confirm suitability of multifamily properties and/or public facilities (based on survey, parking availability, electrical capacity, and equity/workforce priorities)
<p>Explore additional incentives to provide (e.g., grant opportunities, county lead programs)</p>	<ul style="list-style-type: none"> ● Research Eagle County supplemental grant program ● Identify existing, applicable grants (see Eagle County) ● Collate resources to share with multifamily property owners (include sample budget, include sample like for like cost and/or ROI)
<p>Connect with support</p>	<ul style="list-style-type: none"> ● Support coaching for grant application/enhanced incentive project

Resources Available to Support

- Utility Resources
 - [Xcel Energy Multifamily Resources](#)
 - Assigned Parking with Xcel Energy Charging Equipment
 - Shared Parking with Xcel Energy Charging Equipment
 - Shared Parking with Your Charging Equipment
 - Income Qualified and Higher Emissions Community Enhanced Rebates
 - New Construction Rebate
 - [State and Federal Resources](#)
 - Electric Vehicle (EV) Charging Station Grants
 - Electric Vehicle (EV) Charging Station Tax Exemption
 - Charging and Fueling Infrastructure Grants
 - Electric Vehicle (EV) Charging and Clean Transportation Grants

Strategy I-3: Support EV Charging Along Regional Travel Corridors

<p>Description</p>
<p>Build out EV charging infrastructure along regional travel corridors, like I-70 and CO 82.</p>
<p>Key Context</p>

- Corridor charging can support convenient, long-distance travel for tourists, fleets, and community members.
- Corridor charging is primarily associated with DC Fast Charging within a half-mile of major corridors. However, corridor charging can also include strategic Level 2 charging located at enroute destinations within a half-mile of major corridors. Level 2 charging encourages drivers to stay longer and can support economic activity in the region.
- Glenwood Springs, Carbondale, Rifle, and Parachute have DC Fast Charging, but smaller communities such as Silt and New Castle do not currently have DC Fast Charging.
- Even where corridor charging exists, there still may be gaps to fill based on utilization (e.g., where chargers are at use capacity) or infrastructure upgrade needs (e.g., where chargers could provide more power).
- There are several federal and national programs to support regional EV travel (see resources section for overview).
 - The National EV Infrastructure corridor grant program offers significant funding to support charging hubs along statewide travel corridors (e.g., I-70, CO 82). The federal grant program will provide \$57 million in funding over 5 years. However, selected projects are typically larger, and more complex, with applicants from big national companies (Electrify America, EV GO, and Tesla tend to be applicants). Project timelines can take 18-24 months from award to opening and it may be important to engage with national players to access the funding.
 - Xcel Energy EV Supply Infrastructure programs are available to support charging hubs – charging hubs don’t necessarily need to be aligned with state or federal requirements, providing more flexibility to applicants.
- It is important to involve the relevant utilities early and often when planning for DCFC charging hubs, to ensure sufficient electrical capacity and understand potential infrastructure costs.

Timing

- Q1-Q2 of implementation

Target Audience

- Commercial clusters near major regional corridors (e.g., Town of New Castle City Market)
- Gas stations/rest stops along major regional corridors
- Colorado Department of Transportation (Park-n-Rides)

Target Outcomes by End of 2025

- 3 new DCFC opportunities (two or more charging stations) installed within 0.5 miles of I-70 & CO-82 in Silt, New Castle, and Carbondale
- 6 new Level 2 charging opportunities (one or more charging stations) installed within 0.5 miles of I-70 & CO-82.

Scope Elements

Identify DCFC gaps

- Map existing DCFC infrastructure (connect with mapping efforts in strategies I-1 and I-2)
- Identify ideal location criteria for DCFC (e.g., amenities, power, compliance with State and/or Federal grant requirements)

Identify stakeholders/developers	<ul style="list-style-type: none"> ● Create a list of stakeholders and potential developers. Use the existing “partnering list” from CDOT’s website as a starting point
Property owner outreach	<ul style="list-style-type: none"> ● Reach out to potential property owners to assess their interest in pursuing Electric Vehicle Supply Equipment (EVSE) deployment. When interested, provide support throughout the process and connect with other relevant stakeholders (developers, OEMs, electric utilities, and contractors) ● Meet with the Xcel Energy team for DCFC locations that could be owned and operated by Xcel Energy

Resources Available to Support

- Utility Resources
 - [Xcel Energy Community Charging](#)
 - EV Supply Infrastructure
 - Critical Peak Pricing Program
 - Income Qualified and Higher Emissions Community EV Community Charging Hub Rebates
 - Holy Cross Energy
 - Community Charging Incentives
- [State and Federal Resources](#)
 - Colorado’s National Electric Vehicle Infrastructure (NEVI) Planning Incentive
 - Electric Vehicle (EV) Charging Station Grants
 - Electric Vehicle (EV) Charging Station Tax Exemption
 - Charging and Fueling Infrastructure Grants
 - Electric Vehicle (EV) Charging and Clean Transportation Grants
 - DCFC Plaza Program



Focus Area: Codes and Policy Support (C)

The objective of this focus area is to provide assistance to local government and the development community to advance the installation of EV infrastructure in new development.

Key Context

Building codes, energy codes, development codes and supplemental policies can serve as excellent indicators of a community's EV goals. EV technology is relatively new, meaning that existing development wasn't put in place with EVs in mind. However new development offers an important opportunity to advance EV adoption. It is much more cost effective to install EVs in new construction than it is to retrofit. Adopting EV-ready codes can ensure that new development provides EV infrastructure to community members at the lowest investment. Developers and builders are important partners in this work, and helping the development community navigate new codes, policies, and incentives is paramount to maximizing mutual benefits.



Establish a process for in-house electrical permit inspection. While electric permitting is a simple process, inspection is handled by the State for most Garfield County communities. This can lead to permitting delays when the State receives an influx of permitting requests. Transitioning the permitting process in-house could alleviate time constraints, however, communities can only perform inspections if they adopt newer energy codes.

Short-Term Action Summary

- Strategy C-1: Provide Energy and EV Code Education Opportunities to Communities
- Strategy C-2: Connect Developers to Incentives

Strategy C-1: Provide Energy and EV Code Education Opportunities to Communities

Description	
Connect communities with information to help them better understand the landscape and timing of state requirements, and pathways for supporting community and County goals through code adoption.	
Key Context	
<ul style="list-style-type: none"> ● If a community adopts any new codes before 2026, they are required to adopt 2021 IECC and solar-ready, EV-ready, and electric-ready model code. After 2026, communities making code changes may be required to adopt even more stringent energy efficiency requirements. There may be a benefit to updating codes before 2026 to avoid a major jump in standards. When adopting energy code – you cannot amend it unless going above and beyond. ● There are a variety of codes adopted across Garfield County communities, and not all communities are ready to advance to IECC 2021. This strategy should focus on information sharing and building consensus around recommendations rather than aligning around adoption of a single set of standards. <ul style="list-style-type: none"> ○ Rifle is in the 2009 IECC ○ Garfield County, Parachute, and Silt are currently in the 2018 IECC ○ Glenwood Springs is already in the 2021 IECC ○ New Castle adopted the 2021 IECC in January 2024 ○ Carbondale is in the process of adopting the 2021 IECC as of January 2024 	
Timing	
<ul style="list-style-type: none"> ● Q1-Q2 of implementation 	
Target Audience	
<ul style="list-style-type: none"> ● Building officials, code officials, and relevant planners within Garfield County (Carbondale, Rifle, New Castle, Garfield County, Silt, Glenwood Springs, Parachute) 	
Target Outcomes by End of 2025	
<ul style="list-style-type: none"> ● Documentation of key state code requirements (current and impending), including a summary of potential impacts. ● Jurisdictions who make building code updates successfully adopt and implement the EV-readiness code 	
Scope Elements	
Establish a codes education series	<ul style="list-style-type: none"> ● Establish a schedule of educational events, including topics, speakers, timing, and location
Deliver education series	<ul style="list-style-type: none"> ● Promote educational events to community members ● Host educational events ● Attend educational events as topic expert

Continue providing targeted technical assistance to communities	<ul style="list-style-type: none"> • Continue providing targeted technical assistance to communities interested in updating their energy and EV codes
Resources Available to Support	
<ul style="list-style-type: none"> • Utility Resources <ul style="list-style-type: none"> ○ Xcel Energy Code Support – experience supporting cohorts • State and Federal Resources <ul style="list-style-type: none"> ○ Energy Code Adoption Toolkit 	

Strategy C-2: Connect Developers to Incentives

Description
<p>Connect development community with federal, state, and utility incentive information to install EV infrastructure above and beyond local codes.</p>
Key Context
<ul style="list-style-type: none"> • Several communities in Garfield County do not have EV-requirements as part of their energy codes. • On March 1, 2024, communities will be required to comply with Colorado’s Model Electric Code for R-2 occupancies. • Incentives can include a wide range of mechanisms (e.g., financial incentives or process incentives). Incentives should respond to the barrier(s) present. • It is critical to involve utilities early on in the development process to inform project costs/savings and avoid project delays.
Timing
<ul style="list-style-type: none"> • Q5-Q6 of implementation
Target Audience
<ul style="list-style-type: none"> • Multifamily, commercial (e.g., Habitat for Humanity), and mobile home park developers • Appraisers/realtors working with the Multiple Listing Service (MLS) • City/Town planners/engineering offices – those making decisions about electric infrastructure, on-street infrastructure
Target Outcomes by End of 2025
<ul style="list-style-type: none"> • 10 participants in Xcel Energy new development program • 10 participants in Colorado Charge Ahead grant program • 5 participants Holy Cross Rebate
Scope Elements

Identify developer contacts	<ul style="list-style-type: none"> ● Collate contact list of well-known developers in the community
Understand developer needs/barriers	<ul style="list-style-type: none"> ● Host workshops with identified developers to identify barriers and opportunities related to installing EV infrastructure in new development. Identify key communication channels. Invite utilities to the conversation to continue relationship building
Collate resources to support developers	<ul style="list-style-type: none"> ● Summarize key information, including relevant code language, permitting processes, and existing incentives ● Support the development of a marketing 1-pager for residential developers to share with new homebuyers, highlighting the value of EV infrastructure in new homes ● Identify one or more developer/development to highlight; Partners in Energy to support the development of a one pager to share with development community ● Develop a list of preferred developers ● Determine whether additional incentives may be helpful to support developers to go above and beyond codes to install EV infrastructure (e.g., project rebates, density incentives, and permitting process incentives)
Collaborate with utilities	<ul style="list-style-type: none"> ● Coordinate with Xcel Energy, Glenwood Springs Electric, and Holy Cross to identify opportunities to enhance utility coordination
Outreach and Education	<ul style="list-style-type: none"> ● Use channels identified and resources developed to connect development community with key information and incentives to support the installation of EV infrastructure in new projects

Resources Available to Support

- [Xcel Energy Resources](#)
 - Access advisory services
 - EVSE rebates
 - New development rebates (multifamily)
 - Xcel Energy code support: provide information what state requires
- Holy Cross - \$600/port available for all infrastructure
- State and Federal Resources
 - Charge Ahead Colorado – funds eligible for going above and beyond code



Focus Area: Fleet and Transit (F)

This section focuses on further advancing electrification across three core segments: general fleets, micro-mobility, and public transportation. Considerations for advancing equitable fleet electrification opportunities are included within each strategy.

Key Context

Fleet Vehicles in the Garfield County Region

Within the Garfield County region, there are a variety of fleets, both large and small. Most of the larger fleets include region-wide taxi services that span multiple counties, administrative fleets that operate in conjunction with the transportation authority, and landscaping services. Smaller fleets in our region include those associated with schools, delivery services, and small private businesses and municipalities. Fleets in our region also include school buses and public transportation.

Fleet Electrification Offers Significant Benefits

Regardless of the fleet size or type, electrifying fleets and public transportation can offer companies many of the same benefits as electrifying a personal vehicle. These include reduced operational and maintenance cost and improved driving performance and comfort. Electrifying fleet and public transportation vehicles also has significant air quality and health benefits, for drivers, passengers, and the communities along common driving routes.

Some Fleets Have Higher Barriers to Electrification

Not all fleets can access electrification opportunities equally. Access to convenient and low-cost overnight charging for fleets is an important consideration. Additionally, some fleet vehicles that travel long distances may require enroute charging to top off throughout the day. This can be especially challenging for medium- and heavy-duty vehicles and for vehicles without access to worksite charging. Federal government, state, utilities, and local nonprofits have focused on connecting fleets with the resources they need to explore electrification, including events where fleet owners can test electric fleet vehicles, learn about grants, tax credits, and rebates, and connect with their local utilities.

School Fleet Electrification

Schools have been a hot bed for fleet electrification discussions. School fleets can vary from district to district, and from school to school. Fleet vehicles may include light duty administrative vehicles, medium-duty maintenance vehicles, and heavy-duty transit vehicles. Some schools may have parking lots or even depots where charging can be conveniently installed to support mid-day or overnight charging for fleets. Additionally fleet electrification at schools can be a learning opportunity for students. Finally, school-bus electrification, can offer significant health benefits for children who ride the bus.

Holy Cross is working with the Roaring Fork school district to advance fleet electrification and CLEER has begun discussing fleet electrification opportunities with the RE2 school district in Garfield County. There continues to be abundant opportunities for school bus funding, which can help offset the higher upfront cost of electric buses.

Short Term Action Summary

- Strategy F-1: General Fleet Electrification
- Strategy F-2: Micro-mobility Electrification
- Strategy F-3: Transit Electrification

Strategy F-1: General Fleet Electrification

Description	
Identify businesses, school districts, and governments with fleets located in Garfield County and connect them with information to encourage the use of available electrification incentives.	
Key Context	
<ul style="list-style-type: none"> Fleets of five or more vehicles that reside in Xcel Energy territory are eligible for Xcel Energy’s Fleet Electrification Advisory Program (FEAP). Holy Cross is piloting a partnership with Xcel Energy and Sawatch labs for fleet electrification telematics. CLEER offers fleet advising to small fleets, including helping fleets with available grants, rebates, and tax incentives. Light duty fleets tend to be easier to electrify, with more models available on the market and a greater number of cost-comparable options. Fleets with a champion or point of contact interested and able to advance electrification opportunities will be critical to early wins. Off-road vehicles present electrification opportunities, too (e.g., construction equipment, airport ground support equipment, landscaping equipment). It is critical to work with fleet managers and organizations to better understand unique barriers (e.g., lack of information, safety fears, and funding). 	
Timing	
<ul style="list-style-type: none"> Q1-Q4 of implementation 	
Target Audience	
<ul style="list-style-type: none"> Fleets with 5 or more on-road vehicles in Xcel Energy territory. Fleets with 5 or more on-road vehicles in Holy Cross territory. Small fleets (4 or fewer) Fleets with off-road vehicles (construction companies, airport operators, landscaping companies) 	
Target Outcomes by End of 2025	
<ul style="list-style-type: none"> 10 participants in FEAP 2 participants in Holy Cross electrification program 10 fleets 4 or fewer receiving technical assistance from CLEER 	
Scope Elements	
Identify fleets	<ul style="list-style-type: none"> Brainstorm a list of governments, school districts, and large businesses Categorize fleets by size, territory, and interest in electrification. Consider identifying additional prioritization metrics (organization has an

	<p>electrification champion, organization has substantial light duty fleet, duty cycles for EVs do not require DC Fast Charging, organization has a history of innovation)</p> <ul style="list-style-type: none"> ● Identify contact information for identified entities
Develop informational materials	<ul style="list-style-type: none"> ● Develop fleet outreach template, to guide “barriers and opportunities” conversations ● Host listening session with fleet managers to identify key questions, concerns, or barriers to electrification ● Identify fleets that have received state grants and draft one or more success stories to share with other fleets ● Identify fleets that have electrified their fleet and draft one or more success stories to share with other fleets ● Collate key resources (e.g., FEAP, P.A.Y.S. on-bill financing, group buys, federal and state incentives) and information responsive to barriers
Connect fleet managers with informational materials and supplemental support	<ul style="list-style-type: none"> ● Support interested fleet managers in their electrification journey, by connecting them with resources developed in previous steps and providing technical assistance to fleets with fewer than five vehicles ● Connect larger fleets in Xcel Energy territory with relevant resources ● Provide grant application support to help fleet managers secure funding for electric vehicles and electric vehicle infrastructure
Host Fleet Ride-and-Drive Event	<ul style="list-style-type: none"> ● Lead organization and support delivery of a fleet-focused networking and Ride-and-Drive event ● Lead delivery of networking and Ride-and-Drive event

Resources Available to Support

- CLEER offers fleet advising to small fleets
- Utility Resources
 - Install EV Charging Infrastructure
 - Receive a Data-Driven Assessment
 - Earn an Electric School Bus Rebate
 - Qualify for Enhanced Rebates
- State and Federal Resources
 - Electric Vehicle (EV) Charging Station Grants
 - Advance Industries (AI) Accelerator Program Grants

- Electric Vehicle (EV) Tax Credit
- Fleet Alternative Fuel Vehicle (AFV) and Technology Grants
- Fleet Electric Vehicle (EV) Charging Station Grants
- Electric Vehicle (EV) Charging Station Tax Exemption
- Freight Efficiency and Zero-Emission Vehicle Infrastructure Grants
- Zero Emission Vehicle Infrastructure and Advanced Vehicle Grants
- Charging and Fueling Infrastructure Grants
- Low and Zero Emission Public Transportation Funding
- Bus and Bus Facilities Grants
- Electric Vehicle (EV) Charging and Clean Transportation Grants

Strategy F-2: Micro-mobility Electrification

Description

Partner with municipalities, tourism offices, and large employers to promote electric micro-mobility (e.g., electric paratransit, e-carshare, e-bikeshare, e-scooter share, rebates for e-bikes/e-scooters), for commuters, residents, and tourists.

Key Context

- Micro-mobility is an important mode of transportation for residents and tourists.
- Micro-mobility can play an especially vital role in increasing mobility for residents without access to a personal vehicle. Micro-mobility options like paratransit can be valuable for residents with physical mobility limitations.
- Given the size and character of Garfield County, micro-mobility solutions for rural and remote areas are just as important as solutions for more densely populated urban areas.
- The region has a high demand for e-bikes. CLEER deployed 40 e-bikes to income-qualified residents and received over 300 applications in 2023 and continues to receive funding for this program.
- Glenwood Springs Electric utility and Holy Cross Energy provide e-bike rebates to residents.
- There are several opportunities for e-bikes and bike share programs coming to the region.
 - WE-cycle bike share in Carbondale, coming to Glenwood Springs in 2025 – possibly expanding to New Castle and other down-Valley communities.
 - E-bike rebates and tax incentives to roll out 2024 via the state.
 - New e-bike retailers are coming to the region.
- The success of e-bikes to promote mobility in the region depends on the quality of bike-oriented infrastructure between communities (e.g., inter-city bike paths like the Rio Grande Trail, the LoVa trail).

- The success of e-bikes to promote micro-mobility within a community depends on the quality of bike-oriented infrastructure like protected bike lanes.

Timing

- Q3-Q6 of implementation

Target Audience

- Potential electric car share program administrators
- RFTA and potential e-bike and e-mobility program administrators
- Paratransit and medical taxi operators (e.g., Garfield County Traveler)

Target Outcomes by End of 2025

- Summary of recommendations to pilot an electric car share program for underserved communities
- Increase in e-bike rebates distributed to Garfield County residents
- Electrification of one or more paratransit or medical taxi vehicles

Scope Elements

<p>Explore an electric carshare pilot for underserved communities</p>	<ul style="list-style-type: none"> ● Define underserved and establish prioritization factors (e.g., rural, lower income) ● Lead a mapping exercise to identify ideal carshare sites ● Facilitate work sessions between identified communities and carshare companies to identify potential paths forward
<p>Connect residents with information on e-bike incentives</p>	<ul style="list-style-type: none"> ● Identify communication channels (e.g., schools, community websites). ● Create e-bike incentive information ● Distribute e-bike incentive information through identified channels
<p>Explore opportunities to electrify paratransit and medical taxis</p>	<ul style="list-style-type: none"> ● Identify paratransit and medical taxi providers in the region ● Organize meetings with identified paratransit providers ● Collate electrification resources for paratransit providers ● Connect paratransit providers with electrification information

Resources Available to Support

- See models from other communities
 - <https://metro council.org/Transportation/Services/Metro-Mobility-Home.aspx>
 - https://www.nlc.org/wp-content/uploads/2020/11/Micromobility_Report_2020.pdf

Strategy F-3: Transit Electrification

Description	
Support the electrification efforts of transit agencies (RFTA and Parachute Area Transit System) in Garfield County.	
Key Context	
<ul style="list-style-type: none"> • Electrifying transit vehicles can have significant GHG emissions and total cost of ownership benefits. • Electrifying diesel-powered transit vehicles can offer significant noise, air quality and health benefits for riders, who may not have access to personal electric vehicles. • RFTA is the second largest transit operator in Colorado, with over 100 buses in the revenue fleet and a substantial number of administrative vehicles. • RFTA established a goal of full electrification by 2050, in alignment with state of Colorado goals. RFTA already has eight Battery Electric Buses in operation. • Potential barriers to full electrification include additional wear and tear on road infrastructure (due to increased bus weights), costly infrastructure investments in the event of electrical capacity constraints, and opposition from communities regarding overhead bus chargers. • Parachute Area Transit System and Ride Glenwood Springs are the only other major transit operator in the region. Though these fleets are considerably smaller, there may be opportunities to electrify transit vehicles. Ride Glenwood Springs is operated by RFTA. 	
Timing	
<ul style="list-style-type: none"> • Q1-Q6 of implementation 	
Target Audience	
<ul style="list-style-type: none"> • RFTA, Parachute Area Transit System, and Ride Glenwood Springs • Neighbors adjacent to bus stops and bus routes 	
Target Outcomes by End of 2025	
<ul style="list-style-type: none"> • Electrify one or more additional RFTA revenue vehicles • Electrify one or more additional RFTA non-revenue vehicles • Parachute Area Transit System and Ride Glenwood Springs participate in FEAP 	
Scope Elements	
Connect Garfield County Transit Providers with existing resources	<ul style="list-style-type: none"> • Connect RFTA and Parachute Area Transit System with Xcel Energy resources (e.g., FEAP)
Provide supplemental technical assistance	<ul style="list-style-type: none"> • Provide coaching and technical assistance to Parachute Area Transit System to support the identification and pursuit of electrification opportunities

- Support RFTA in the implementation of their zero-emission bus transition plan

Resources Available to Support

- Utility Resources
 - Install an EV Charging Infrastructure
 - Receive a Data-Driven Assessment
 - Earn an Electric School Bus Rebate
 - Qualify for Enhanced Rebates
- State and Federal Resources
 - Electric Vehicle (EV) Charging Station Grants
 - Advance Industries (AI) Accelerator Program Grants
 - Electric Vehicle (EV) Tax Credit
 - Fleet Alternative Fuel Vehicle (AFV) and Technology Grants
 - Fleet Electric Vehicle (EV) Charging Station Grants
 - Electric Vehicle (EV) Charging Station Tax Exemption
 - Freight Efficiency and Zero-Emission Vehicle Infrastructure Grants
 - Zero Emission Vehicle Infrastructure and Advanced Vehicle Grants
 - Charging and Fueling Infrastructure Grants
 - Low and Zero Emission Public Transportation Funding
 - Bus and Bus Facilities Grants
 - Electric Vehicle (EV) Charging and Clean Transportation Grants
 - ZEV Transition Planning Grant Program (1/4 programs through clean enterprise – planning, vehicle replacement, charging and fueling, and facility modifications)
 - VW Settlement Funds – vehicles and charging/fueling – some remaining transit funds

Impact of EV Action Plan

The strategies of this plan were identified to help the Garfield County region achieve its EV vision and accompanying goal to transition at least 15 percent of all registered vehicles to zero-emissions electric by 2030, to support alternative fuels where electric is not yet feasible or where alternative fuels are desirable; and help increase mode share for biking, walking, and transit.

A major focus of these strategies is increasing the EV charging infrastructure to support this large transition.

This plan seeks to add nearly 100 charging stations across Garfield County, to support single-family charging, multifamily charging, workplace charging, and corridor charging, as follows:

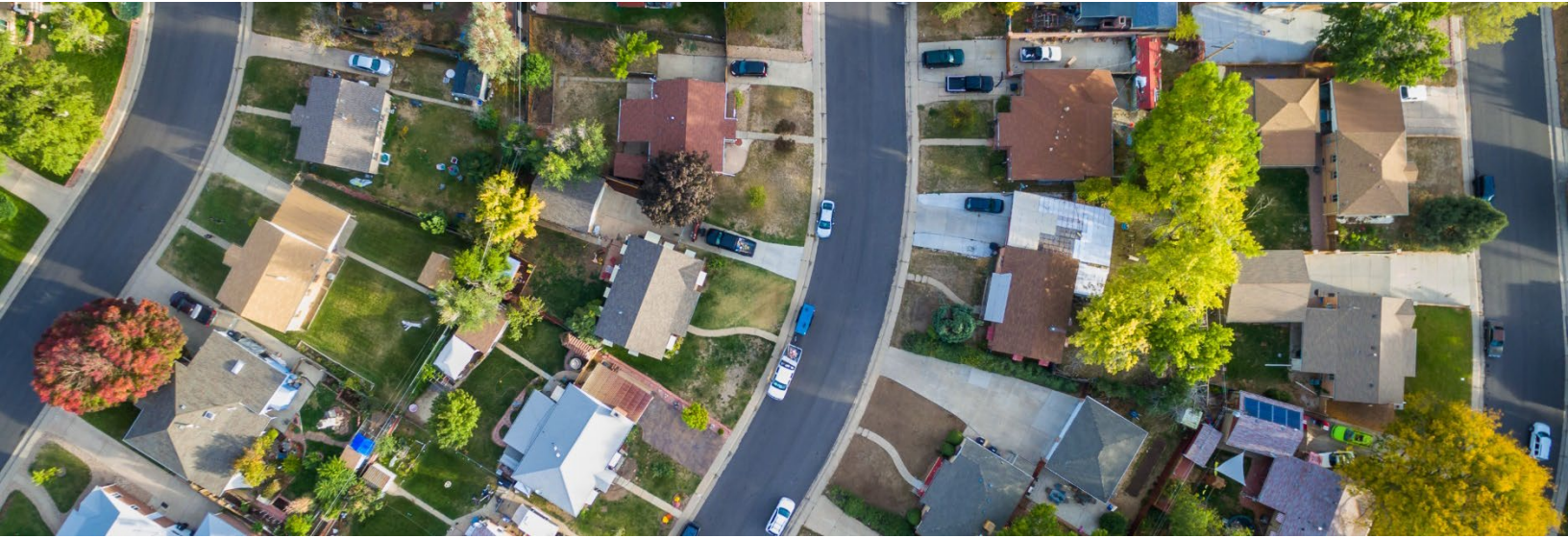
- 100 Home charging stations (Level 2)
- 20 Multifamily charging (Level 2)
- 20 Workplace charging stations (Level 2)
- 6 Corridor charging (Level 2)
- 3 Corridor charging (DC Fast Charging with a minimum of 4 ports)

Garfield County aims to install these charging stations across the county, bringing charging access to areas in the county with the highest barriers to EV adoption (rural, remote, and lower-income).

These investments can carry high upfront costs, so it will be paramount to pair installation efforts with resources available to lower upfront costs. This plan seeks to connect nearly 350 community members with EV programs and incentives to help offset upfront costs. Note, some programs may be used in tandem, therefore program participation totals may not reflect EV infrastructure totals.

- 80 participants in Xcel Energy's EV Accelerate at Home
- 100 participants in Xcel Energy's Optimize Your Charge
- 10 participants in Xcel Energy EVSI programs
- 5 participants in Holy Cross EV programs
- 10 participants in Charge Ahead grant program
- 1 participant in National EV Infrastructure grant program
- 2 participants in Colorado DCFC Plaza grant program
- 10 participants in Xcel Energy's Fleet Electrification Advisory Program (FEAP)
- 2 participants in Holy Cross EV Advising Services

HOW WE STAY ON COURSE



Plan Implementation

Through Xcel Energy Partners in Energy, GCE and CLEER will receive 18 months of support to aid the implementation of this plan. Successfully implementing plan strategies and achieving plan goals will require close coordination between CLEER, Xcel Energy, and community partners. Implementation of the plan will be divided into two main roles as described in Figure 13.

Project Management Team

Participants: CLEER, Partners in Energy community facilitators, and Xcel Energy staff

Responsibilities: Coordinating strategy implementation and tracking progress toward goals

Meetings: Monthly

Community Stakeholder Team

Participants: Project Management Team and interested members of the EV Action Team (see Acknowledgements); additional members may be identified through implementation

Responsibilities: Implementing strategies and sharing unique perspectives and resources with the team

Meetings: Quarterly or as needed

Figure 13: Implementation Team

Implementation will begin following the adoption of Xcel Energy’s 2024-2026 Transportation Electrification Plan. The timing of this plan adoption is currently unknown but is anticipated in Q2 2024. To help prioritize activities for implementation, the project management team assigned plan strategies with an approximate start and end date based on a six-quarter implementation period. Table 2 illustrates the currently anticipated timeline for when the project management team will implement plan strategies. Q1 of implementation will be the first quarter after the TEP is adopted.

Table 2: Strategy Implementation Timeline

Strategy	Q1	Q2	Q3	Q4	Q5	Q6
Strategy A-1: Public Outreach Campaign						
Strategy A-2: Work with Local Dealerships						
Strategy I-1: Increase Workplace Charging						
Strategy I-2: Assist Multifamily Property Owners and Managers with Charging Infrastructure						
Strategy I-3: Support EV Charging Along Regional Travel Corridors						
Strategy C-1: Provide Energy and EV Code Education Opportunities to Communities						
Strategy C-2: Connect Developers to Incentives						
Strategy F-1: General Fleet Electrification						
Strategy F-2: Micro-mobility Electrification						
Strategy F-3: Transit Electrification						

Tracking Progress

At least annually, project management team meetings will be used to review progress toward plan targets, discuss roadblocks, and provide a forum for adjusting course. Any adjustments will be documented and shared with the broader group and community as they occur. To ensure this plan remains on track, the project management team will track metrics as outlined in each strategy.

Adapting to a Changing Landscape

Successful implementation requires the ability to balance planned timelines with emerging opportunities. The EV landscape is rapidly evolving, with new technology coming to market at a rapid pace.

Amidst this planning process, Xcel Energy filed a new Transportation Electrification Plan (TEP) with the Public Utilities Commission to guide support between 2024-2026. Several changes to existing programs and resources, as well as several new programs, were proposed. At the time of this plan’s writing, the new TEP has

not been approved or adopted. The adoption timeline, as well as the resulting programs, may inform changes to implementation timelines, approaches, or even targets. See appendix for update.

Throughout the planning process, relationships were strengthened among Garfield Clean Energy, CLEER, Holy Cross, Glenwood Springs Electric, and Xcel Energy staff, as well as municipal planners, transportation authorities, civic groups, engaged citizens, and nonprofits to foster the collaboration and cooperation required to successfully navigate the changing EV landscape.

Beyond the Plan Horizon

This plan is intended to provide a framework for both immediate and long-term action. The goals associated with this plan have a target timeline of 2030. While this planning process revealed one longer-term strategy, the vast majority of strategies in this plan are intended for implementation over the next 18 months. However, many of these strategies can be viewed as ongoing and evolving efforts. For instance, residential and commercial outreach and engagement will continue to be paramount over the next six years as EV technology evolves and funding opportunities change.

Importantly, new opportunities may arise over the full-time horizon of this plan. It is recommended that the project management team reassess areas of opportunities every two years. The [Xcel Energy Partners in Energy EV Toolkit](#) can be a good resource for identifying new strategies to address new opportunities or unexpected barriers.

APPENDIX A: GLOSSARY OF TERMS



Alternating current (AC): The most common form of electricity used in homes and businesses uses alternating current where the current periodically changes direction. Batteries require DC electricity to charge, so EV chargers must convert the supplied AC electricity to DC power.

Amps: The measurement of the amount of electrical energy “flowing” through a charger. This is determined by the electrical load required by the equipment and can vary over time.

Battery Electric Vehicle (BEV): An all-electric vehicle, fueled by plugging into an external charger, that has no tailpipe emissions. Requires low maintenance costs.

Direct Current (DC): The form of electricity where the current only flows in one direction. This is the type of electricity that batteries supply and require to charge. EV chargers must convert the supplied AC electricity to DC power.

Electric Vehicle (EV): A vehicle that uses an electric engine for all or part of its propulsion.

Electric Vehicle Supply Equipment (EVSE): Infrastructure required to support EVs such as chargers and electrical supplies.

Energy Burden: Percentage of gross household income spent on energy costs.

Fleet Electrification: Replacing internal combustion engine vehicles with equivalent electric vehicles in a public or business fleet.

Greenhouse Gases (GHG): Gases in the atmosphere that absorb and emit radiation and significantly contribute to climate change. The primary greenhouse gases in the earth's atmosphere are water vapor, carbon dioxide, methane, nitrous oxide, and ozone.

Heavy-duty Vehicles: Commercial vehicles over a minimum Gross Vehicle Weight Rating (GVRW) of 8,500 lbs.

Hybrid Electric Vehicle (HEV): Contains both an electric motor and a gasoline engine. The gasoline engine powers a generator that charges the electric motor. No external battery charger is used. Runs at a constant speed, which increases fuel efficiency.

Internal Combustion Engine (ICE): Traditional vehicle engine that uses the direct combustion of gasoline, diesel, or other fuels.

Kilowatt-Hour (kWh): The amount of electricity being sent to the EV battery from the charger in one hour. This is calculated by volts times amps divided by 1,000.

Level 1 Charging Station: Uses a standard 120-volt AC outlet and can take an average of 8 to 12 hours to fully charge a depleted battery, depending on a variety of factors; intended for residential use only.

Level 2 Charging Station: Uses a 220-volt or 240-volt AC outlet and can fully charge a depleted battery in an average time of 4 to 6 hours, depending on a variety of factors; can be used in both residential and commercial settings.

DC Fast Charging Station: Uses an industrial 480-volt DC outlet and can charge a battery to 80% in 20 to 30 minutes; used in commercial settings where the anticipated charge time is limited (e.g., supermarket, gas station, etc.); will be used on Alternative Fuel Corridors – a national network of major thoroughfares supporting EVs and other alternative fuels.

Light-Duty Vehicles: Passenger cars with a maximum Gross Vehicle Weight Rating (GVRW) of 8,500 lbs.

Micromobility: Transportation using lightweight vehicles such as bicycles or scooters, including electric bicycles and scooters, often used to travel short distances.

Metric Tons of Carbon Dioxide Equivalent (MTCO_{2e}): A unit of measure for greenhouse gas emissions. The unit "CO_{2e}" represents an amount of a greenhouse gas whose atmospheric impact has been standardized to that of one unit mass of carbon dioxide (CO₂), based on the global warming potential (GWP) of the gas.

Plug-in Electric Vehicle (PEV): A vehicle that uses an electric motor and utilizes an external source of electricity to store electrical energy within its onboard rechargeable battery packs.

Plug-in Hybrid Electric Vehicle (PHEV): Contains both an electric motor and a gasoline engine. An external plug is used to fuel the electric motor. The electric motor is used until the battery is depleted; at this point the gasoline engine takes over. Lower tailpipe emissions than traditional internal combustion engine and longer ranges than most BEVs.

Range Anxiety: Fear of running out of power in an EV before reaching a charging station or desired destination.

Range Per Hour (RPH): A measurement of the miles an EV can travel on one hour of charge. This is generally applied to EV charging stations and expressed in terms of typical EV efficiency.

Resilience: The ability to prepare for and adapt to changing conditions and withstand and recover rapidly from disruptions. Resilience includes the ability to withstand and recover from deliberate attacks, accidents, or naturally occurring threats or incidents.

Vehicle Miles Traveled (VMT): A way of measuring integration of EVs and associated reduction in GHG emissions by considering electric miles that replace traditional vehicle miles.

Volts: A measurement of the force pushing the flow of energy through a charger. This measurement is determined by the electricity supply. Standard household outlets provide 120 volts; outlets for dryers or other high-powered household equipment supply 240 volts.

APPENDIX B: REFERENCES

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