



Electric Vehicle Action Plan for the City of Northglenn

April 2022



 **Xcel Energy**[®]

PARTNERS IN ENERGY
An Xcel Energy Community Collaboration

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

The content of this plan is derived from a series of three planning workshops hosted by Xcel Energy’s Partners in Energy. Xcel Energy is the main electric utility in Northglenn. Partners in Energy is a two-year collaboration to develop and implement a community’s energy goals. For more information about the planning workshops, see *Appendix A: Xcel Energy’s Partners in Energy EV Planning Process*.

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City of Northglenn

Electric Vehicle Action Plan



About this Plan

This Electric Vehicle Action Plan is a roadmap to strategically guide Northglenn action in a manner that supports increased use of EVs throughout the City with a focus on the municipal fleet, public adoption, public charging, and policy. The EV goals and strategies outlined in this plan were developed collaboratively with a stakeholder team, including representatives from the City of Northglenn, Tri-County Health Department, Office Evolution, Adams 12 School District, and Independent Electrical Contractors Rocky Mountain Association.

Electric Vehicle Vision

Northglenn will reduce greenhouse gas emissions and improve air quality through electric vehicle adoption and infrastructure that is inclusive, sustainable, cost-effective, and innovative.

Electric Vehicle Goal

Northglenn aspires to increase environmental and economic sustainability for the community by transitioning to an electric transportation future, reaching 4,200 electric vehicles by 2030, aligned with the State of Colorado EV Plan.

Our Roadmap for Achieving this Vision & Goal

To achieve this vision, the Northglenn EV Action Plan is divided into four focus areas:

1. **Municipal Fleet:** Lead by example through electrification of Northglenn's municipal fleet.
2. **Public Adoption:** Encourage residents and businesses to purchase EVs through education and outreach.
3. **Public Charging:** Increase access to public and multifamily charging for Northglenn residents and visitors across the City and the region to show support and spur EV adoption.
4. **Policy:** Update City policies to encourage EV adoption, provide consistency across the community, and make it easier to own and operate EVs and EV infrastructure.

Our Strategies

Municipal Fleet

- » MU-1: Participate in the Fleet Electrification Advisory Program.
- » MU-2: Develop fleet charging infrastructure implementation plan.
- » MU-3: Explore EV funding opportunities.

Public Adoption

- » PA-1 Develop a volunteer task force to promote and support EV adoption.
- » PA-2 Conduct targeted community education campaign.
- » PA-3 Support and promote community and regional ride & drive events.
- » PA-4 Collaborate regionally to organize EV group-buy(s) with auto dealers.

Public Charging

- » PC-1: Conduct EV charging siting study and implement findings (public & municipal sites).
- » PC-2 Conduct business outreach campaign.
- » PC-3 Develop collaborative resource to support regional charging corridors and mobility hubs.
- » PC-4 Promote and evaluate innovative funding mechanisms for public charging.

Public Charging Priority: Multifamily Housing

- » MF-1: Encourage property owners to install charging stations.
- » MF-2: Conduct public charging needs and siting assessment for multifamily.
- » MF-3: Explore creative funding mechanisms for multifamily-specific needs and connecting properties to funding.

2020 Baseline

3 hybrid fleet vehicles



3 public charging stations



48 registered EVs



Impact and Results of Plan Implementation



Accelerate Northglenn's transition to a municipal electric fleet by participating in Xcel Energy's **Fleet Electrification Advisory Program**.



Grow the number of registered electric vehicles in Northglenn to **4,200 by 2030**, increasing the number from 48 in 2020.



Install **100 public charging stations** in Northglenn by 2030, an increase from 3 in 2020.

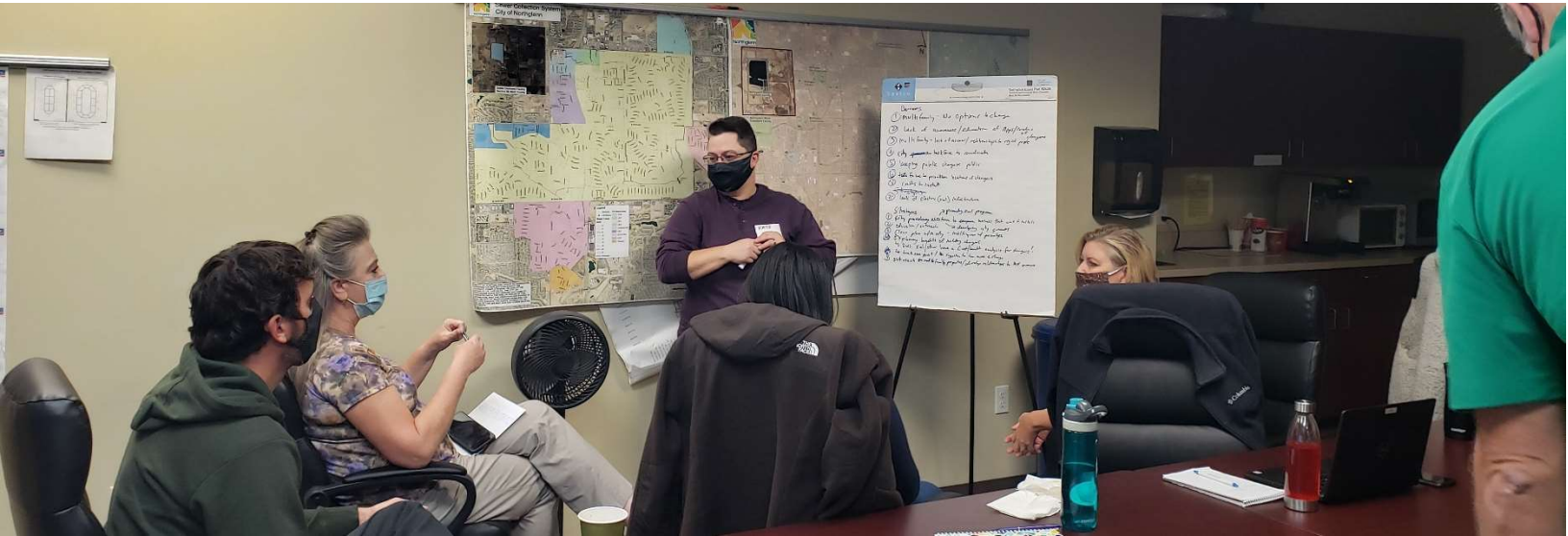


Achieve installation of **20 charging stations** located within **¼ mile** for all multifamily properties by 2030.



Achieve 5% EV-installed, 15% EV-ready, and 40% or 80% **EV-capable development codes** (to be finalized and approved).

INTRODUCTION



The City of Northglenn is a Denver Metro community that values a high quality of life for everyone who lives, works, or recreates within its city limits. In 2018, the City of Northglenn completed a sustainability plan, which sparked an important conversation about sustainability and transportation. As a part of the Denver Metro economic ecosystem and home to a large number of commuters, sustainable transportation is pivotal to Northglenn’s quality of life.

In 2019, Northglenn participated in Xcel Energy’s Partners in Energy program to develop and implement an Energy Action Plan. This EV Plan continues building on that success and the adoption of the 2018 Sustainability Plan which included goals to reduce transportation-related pollution. This Electric Vehicle (EV) Action Plan is one step the City is taking to actualize their vision of a more sustainable future.

What is an EV Action Plan?

This Electric Vehicle Action Plan is a roadmap to strategically guide Northglenn action in a manner that supports increased use of EVs throughout the city, with a focus on municipal fleet, public adoption, public charging, and policy.

The components of Northglenn’s EV Action Plan are detailed below:

Why an EV Action Plan? A look at Northglenn’s motivations for developing an EV Action Plan, and the characteristics of Northglenn as relevant to EV planning.

Where We Are Going Describes Northglenn’s EV vision and goals through a planning horizon of 2030.

How We Are Going To Get There Identifies the specific strategies that will support progress toward defined goals. Each strategy includes a brief description

and identifies the target audience, target outcomes, scope and timeline, roles and responsibilities, required resources, and outreach channels. Strategies are organized into four primary focus areas. Each focus area, except Municipal Fleet which is tracked separately from this Plan, includes targets and metrics to help the City measure success.

How We Stay On Course Outlines how the City will track progress toward targets, goals, and vision, and how it will adapt to a changing landscape during the coming 18-month implementation period and beyond.

Appendices Provide additional information about the planning process, next steps, EV basics, and current Xcel Energy Programs.

Appendix A: Xcel Energy's Partners in Energy EV Planning Process

Appendix B: Northglenn Transportation Survey Results

Appendix C: Available Resources

Appendix D: Electric Vehicles 101

Appendix E: Glossary of Terms

Appendix F: Implementation Memorandum of Understanding

The EV vision, goals, and strategies outlined in this plan were developed collaboratively with a diverse stakeholder team. The EV planning team included representatives from Xcel Energy, City leadership, City staff, Tri-County Health Department, Adams 12 School District, and the community, to reflect the importance of collaborating for the advancement of EV adoption. By the numbers, 16 EV action team members engaged through 3 workshops and 3 focus group sessions, and over 300 community members responded to 2 public surveys. See *Appendix A: Xcel Energy's Partners in Energy EV Planning Process* for more information about the planning process and Xcel Energy Partners in Energy.

Why an EV Action Plan?

Northglenn Sustainability Plan

In September 2018, the City of Northglenn adopted a [Sustainability Plan](#) to achieve the following vision "...meet our present and future generation's needs without compromising the ecosystems on which we depend, in order to create an exceptional quality of life for every generation."

Sustainable transportation was identified as one of the Plan’s nine goal areas critical to achieving Northglenn’s vision. Though the Plan addresses aspects of sustainable transportation beyond electrification, the Plan goals and targets inspired the City to develop this Electric Vehicle Action Plan.

Northglenn Energy Action Plan



Connections to the goals, indicators, and targets from the Sustainability Plan are identified using this icon.

In 2019, the City of Northglenn developed an [Energy Action Plan](#), facilitated by Xcel Energy Partners in Energy, that outlined tangible steps to move the community toward its energy efficiency and resiliency goals. The plan identified strategies to increase awareness and action among residents, businesses and municipal facilities. The community’s main priorities included raising awareness around energy efficiency and renewable energy options, addressing energy use for older buildings throughout the City, and leading by example at the municipal level to demonstrate what is necessary for and possible to achieve both energy and sustainability goals. The Energy Action Plan and the Sustainability Plan work in tandem and demonstrate the collaboration necessary among the City and its utilities to achieve shared goals.

Greenhouse Gas Reduction

For decades, power generation was the leading contributor to national greenhouse gas emissions. However, as the nation’s electricity supply transitioned to renewable energy sources, transportation emissions began to outpace energy emissions. In 2017, national transportation emissions exceeded power generation emissions for the first time (EIA, 2017). In Colorado, transportation emissions exceeded power generation emissions in 2020, contributing nearly 25% to Statewide emissions (Colorado Energy Office, 2021).

Colorado’s Greenhouse Gas Pollution Roadmap

The State of Colorado has established greenhouse gas emissions reduction goals of reducing emissions by 26% by 2026, 50% by 2030, and 90% by 2050 from 2005 levels (H.B. 19-1261, (CO 2019)). Drawing down transportation emissions by supporting the adoption of Zero Emission Vehicles is one of the key strategies of Colorado’s Greenhouse Gas Pollution Reduction Roadmap.

In Northglenn, the proportion of transportation emissions far exceeds both state and national levels. In 2016, transportation contributed 44% to Northglenn’s total emissions (ICLEI, 2019). This presents an enormous opportunity for the City to reduce greenhouse gas emissions through the transportation sector.



Northglenn’s Sustainability Plan includes greenhouse gases as an indicator of transportation sustainability and sets a target to “reduce total GHG emissions of city fleet vehicles by 30% by 2025.”

Air Quality

Northglenn is located within the 8-hour National Ambient Air Quality Standard 8-hour ozone nonattainment area, with a classification of serious (EPA, 2022), indicating significant air quality issues. The transportation sector is a major contributor to air quality issues in the Denver metro area. Tailpipe pollutants from internal combustion engines, such as nitrous oxides (NOx) and volatile organic compounds (VOCs), are significant contributors to ground level ozone and they cause respiratory health issues. Other emissions, such as particulate matter (PM) and Carbon Monoxide (CO), are also harmful to respiratory health and contribute to greenhouse gas emissions.



Northglenn’s Sustainability Plan highlights the importance of creating “...a multi-modal transportation system that minimizes and, where possible eliminates pollution...”

Hybrid Electric Vehicles (HEVs) produce fewer tailpipe pollutants as compared to their gas-powered engine counterparts; in Battery Electric Vehicles (BEVs) these emissions are eliminated completely (Office of Energy Efficiency & Renewable Energy, 2020).

Though plug-in electric vehicles produce significantly fewer tailpipe pollutants, air pollutants are still produced when the electricity used to charge EVs is generated from fossil fuels. As Xcel Energy works toward its carbon-free goals and adds more renewable energy sources to its generation mix, the magnitude of air quality benefits associated with electrifying transportation will continue to increase.

Transportation Costs

As a community with many inter-city commuters, reducing transportation expenses could yield significant savings for Northglenn’s community members. In 2019, the average annual household transportation costs in the city were \$13,073, accounting for 20 percent of household income (Center for Neighborhood Technology, 2019).

Over its lifetime, an EV tends to cost 50% less to own and operate as compared to its internal combustion engine (ICE) vehicle counterpart - due to lower fuel and maintenance costs (Great Plains Institute, 2020). Though upfront costs of EVs are still greater than ICE vehicles, this gap is expected to decrease as technology matures, production scales, and batteries become more efficient and cost effective to manufacture.

Transportation Cost Savings

EVs provide cost savings primarily through fuel and maintenance savings. For instance, a 2019 Honda Civic may require approximately \$900 in fuel and \$3,000 in annual operating and maintenance costs. A 2019 Chevrolet Bolt with the same driving patterns only requires \$400 in fuel and \$2,500 in operating and maintenance costs. The lifetime cost of the Civic exceeds that of the Bolt in year six of ownership when tax credits are applied (AFDC, 2020).

Community Characteristics

Geographic and demographic characteristics are critical to understanding EV adoption trends and identifying the right strategies to increase EV adoption. The following sections summarize the community characteristics that present both barriers to and opportunities for EV adoption in Northglenn.

Geography

Northglenn is a suburban city north of Denver, strategically located along Interstate 25 and two dynamic business corridors – E 120th Avenue and W 104th Avenue. The City of Northglenn is 6.45 square miles of urban area located in Adams County, with an additional square mile of rural area located 7 miles north in Weld County (Figure 1). The rural square mile is the site of the City’s Wastewater Treatment Plant. Cities surrounding Northglenn include Westminster, Thornton and Federal Heights. The city is largely car dependent due to its suburban nature, although it is relatively compact with short distances between services.

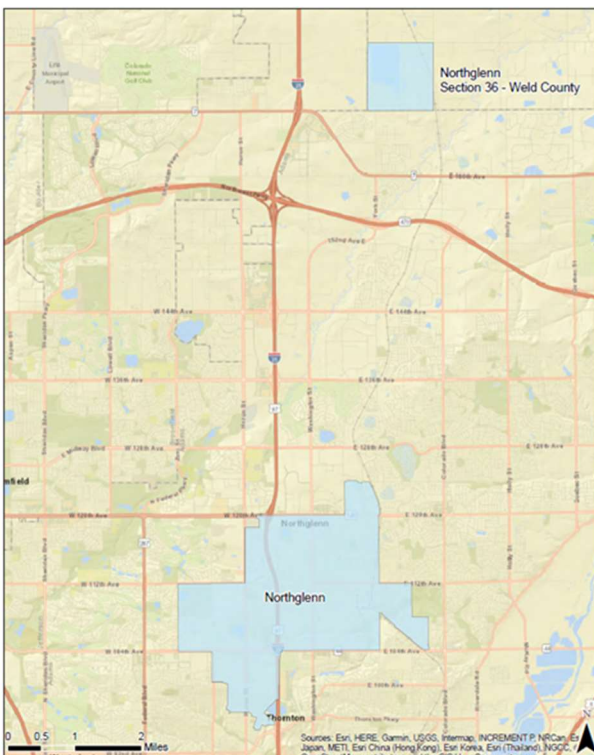


Figure 1. City of Northglenn municipal boundary

Population

The City of Northglenn is home to approximately 38,000 residents. Northglenn's population has grown by approximately 6 percent since 2010 (DOLA, 2022). Compared to other communities in Colorado, it is growing less quickly because it is landlocked. However, with some growth anticipated it is expected that the number of vehicles on the

road and the number of vehicle miles traveled will both continue to grow. Increasing the proportion of EVs on the roads can help mitigate anticipated increases in air pollution.

Income

Northglenn's median household income is \$66,300, lower than both Adams County's (\$75,804) and the state's (\$77,127). While the additional upfront cost of EVs remains a primary barrier, as battery prices continue to decline so will the retail price of EVs. The price of most light-duty EVs (e.g., sedans, SUVs, small trucks) is expected to be similar to that of internal combustion engine vehicles by the mid-2020s.

However, even today consumers have options available to them that can meet most budgets. One study found that most people expect to spend \$30,000 or less on their next vehicle (National Renewable Energy Laboratory, 2017). Federal and state tax credits can help reduce these up-front costs; current vehicles eligible for tax credits can be found on the Department of Energy Fuel Economy [website](#) (U.S. DOE, 2022).

Still, Northglenn's median household income presents an opportunity to leverage strategies aimed at reducing the upfront cost of EVs. These strategies may include connecting consumers to additional rebates and incentives as well as providing them information about the total cost of EV ownership.

Housing

The majority of EV charging takes place at home. Home charging is easiest for single family residences and for homeowners. Of Northglenn's 13,836 housing units, nearly 67% are single family detached and 54% are owner occupied. While this represents a significant market opportunity, the City also has an opportunity to support adoption of EVs in renter-occupied homes and multifamily properties. Increasing EV adoption in rental properties and multifamily properties will require careful coordination with property owners and can help address equity concerns related to access to EVs. State and utility programs are available to support the adoption of infrastructure at multifamily properties.

The age of a home can also impact access to EV charging infrastructure. Nearly 90% of Northglenn's housing stock is 30 years or older, which could present a cost barrier to some homeowners (Table 1). Installing charging infrastructure can be more expensive in older homes where panels may need to be upgraded to accommodate the installation of a circuit breaker for charging equipment (Gaton, 2018). In some new housing, builders are installing pre-wired 240V outlets in garages to reduce the cost of installing charging infrastructure.

Table 1. Distribution of age of homes built in Northglenn

Year Built	Percent of Units
2000 - 2014	12.4%
1990 - 1999	15.2%
1980 - 1989	8.2%
1970 - 1979	20.1%
1960 - 1969	38.3%
1950 or earlier	5.7%

Commuting Patterns

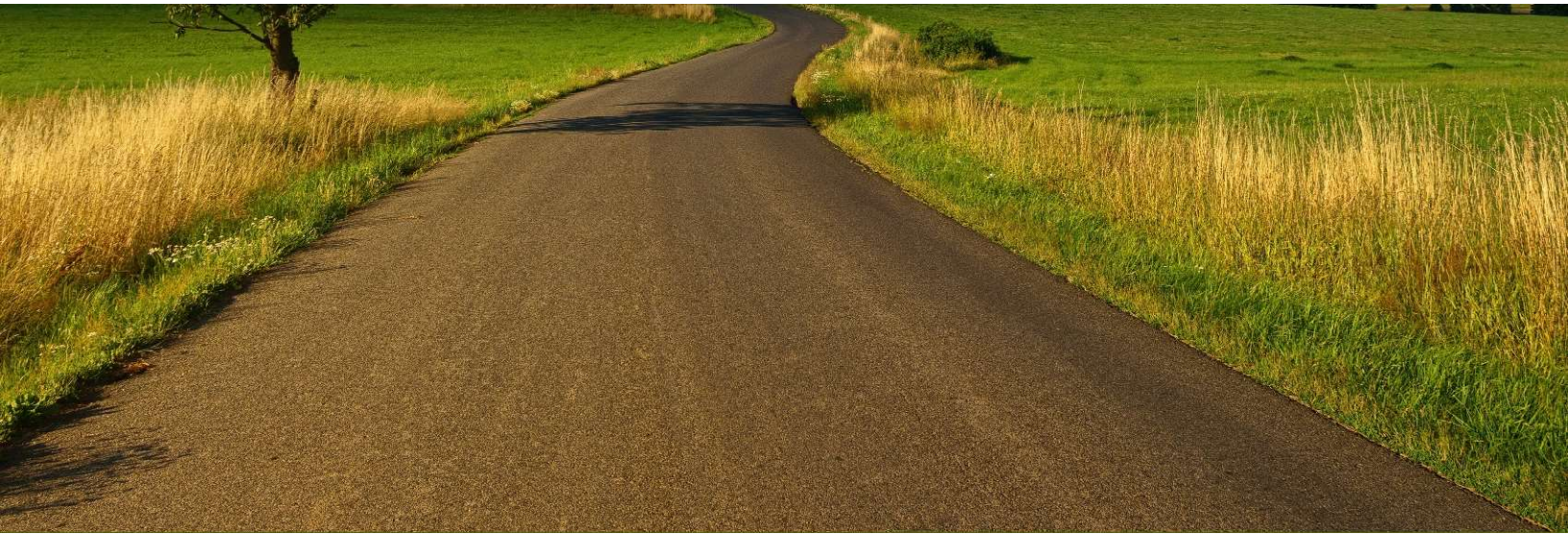
Like many communities in the Denver Metro Area, Northglenn is home to many commuters. There are 20,000 workers in Northglenn and more than 18,000 of them commute out of the city every day for work. Under 2,000 workers live and work in Northglenn (Figure 2) (U.S. Census Bureau, 2018). The average commute time for Northglenn workers is 30 minutes; 82% of workers drive alone to work (U.S. Census Bureau, 2019). This represents a major opportunity for EVs to reduce commuting costs, air pollution, and greenhouse gas emissions.

At the same time, nearly 12,000 workers commute into Northglenn every day (U.S. Census Bureau, 2018). This highlights the importance of providing charging opportunities within the city, especially workplace charging stations, to reduce the air pollution and greenhouse gas emissions associated with workers commuting into the city.



Figure 2. 2018 inflow and outflow commuting from U.S. Census Bureau On the Map

WHERE WE ARE GOING



Energy Vision Statement

During the planning process, the EV Action Team created a vision statement for this Electric Vehicle Action Plan.

This statement helped guide the planning process and reflects the intention of the community.

Northglenn will reduce greenhouse gas emissions and improve air quality through electric vehicle adoption and infrastructure that is inclusive, sustainable, cost-effective, and innovative.

EV Action Plan Goal

To realize this vision, the EV Action Team set an aspirational goal aligned with the State of Colorado EV Plan goal.

Northglenn aspires to increase environmental and economic sustainability for the community by transitioning to an electric transportation future, reaching 4,200 electric vehicles by 2030.

Focus Areas




To start building a community-wide commitment to transportation electrification, stakeholders identified the following focus areas to prioritize strategies and resources. These focus areas were chosen to align with priorities in the community plan as well as focus on areas of opportunity stakeholders can influence directly.

- **Municipal Fleet:** Fleet electrification is an important first step to show the City's commitment to promoting EV adoption. The City of Northglenn enrolled in the Fleet Electrification Advisory Program through Xcel Energy to support its goals in this focus area.
- **Public Adoption:** Increasing public adoption of EVs in Northglenn will require improving access to information, and when possible, removing cost barriers associated with EV-specific investments. This focus area includes strategies to conduct community education and outreach, host ride & drive events, explore options for EV group-buys, and establish a task force to promote and support EV adoption.
- **Public Charging:** While most EV charging occurs at home or at work, access to and knowledge of available public charging stations can help residents feel more comfortable purchasing an EV. This focus area aims to increase the number of publicly available charging stations throughout Northglenn, including at businesses, workplaces, multi-tenant complexes, community spaces, and other gathering spots. Strategies include mapping and siting studies, business outreach, exploring innovative funding mechanisms, and collaborating regionally to support charging corridors and mobility hubs.
- **Policy:** The right policies can reduce barriers to EV adoption by lowering the cost of EVs and EV infrastructure; and they can provide consistency across the community to make it easier to own and operate EVs and EV infrastructure. This focus area includes strategies to integrate EV readiness into Northglenn's codes while also developing common standards and outlining best practice guidance for charging.

These focus areas were chosen to provide an overarching approach to vehicle transportation electrification within Northglenn, with the focus on increasing private adoption.

In addition to identifying the approach, the EV planning team evaluated staffing and non-labor budget needs for each of the strategies identified based on the following rubrics. The budget needs were divided into categories based on Northglenn's capitalization policy as well as the system the City utilizes to rate projects for annual submittal. Budget associated with the addition of potential new staff was not included in the estimates and would need to be determined according to the identified position title(s) and the related salary schedule.

Staffing Needs

Commitment Level	FTE Equivalent	Symbol
Can be supported with existing staffing, minimal effort	Less than 0.1 FTE	
Requires moderate staff time, temporary or part-time resources	0.1 – 0.5 FTE	
Requires new staff to be hired or contracted to implement/maintain	>0.5 FTE	

Budget Needs

Budget Impact	Annual Cost	Symbol
Funded within existing budget	\$0 - \$5K	\$
Slight impact to operations and/or smaller capital project	\$5K-\$20K	\$\$
Moderate impact to operations and/or modest capital project	\$20K - \$50K	\$\$\$
High impact to operations and/or larger capital project	>\$50K	\$\$\$\$

HOW WE ARE GOING TO GET THERE



Focus Area: Municipal Fleet

Electrifying municipal fleets offers an excellent opportunity to reduce municipal greenhouse gas emissions while making EVs more visible within a community. For communities seeking to increase public adoption of EVs, fleet electrification is an important first step to show leadership by example. However, there are several barriers to fleet electrification, including: procurement guideline limitations, up-front cost of charging infrastructure, lack of buy-in or training of employees and maintenance staff, and limited offerings among medium- and heavy-duty electric vehicles.

Strategies to accelerate Northglenn’s transition to an electric fleet include enrolling in Xcel Energy’s Fleet Electrification Advisory Program (FEAP). FEAP is a no- to low-cost program that utilizes telematics-based analytics to provide an assessment of EV opportunities and charging infrastructure needs.



Northglenn’s Sustainability Plan includes greenhouse gases as an indicator of transportation sustainability and sets a target to “reduce total GHG emissions of city fleet vehicles by 30% by 2025.”

Background

The City of Northglenn has over 290 assets in its fleet, including equipment and light-duty, heavy-duty, and off-road vehicles. The City's fleet uses over 100,000 gallons of fuel annually, costing the City more than \$200,000 each year. In 2017, Northglenn's fleet represented 13% of its total government operations emissions (Figure 3) (ICLEI, 2019).

As shown in Figure 4, most the City's fleet assets are gasoline-powered light-duty vehicles. Electric sedans, SUVs, light-duty trucks, and vans are widely available and nearing cost-parity with their gas-powered counterparts, presenting a significant opportunity for the City to electrify its fleet. Heavy-duty vehicles with gasoline or diesel engines are the second most common asset in the City's fleet. Medium- and heavy-duty vehicles are beginning to emerge on the market across all vehicle classes, offering an opportunity to pilot new vehicles and determine which vehicle types are a good fit for electrification.

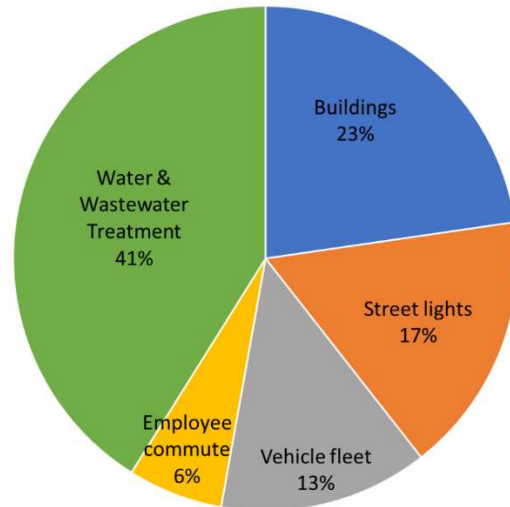


Figure 3. 2017 Northglenn government operations emissions

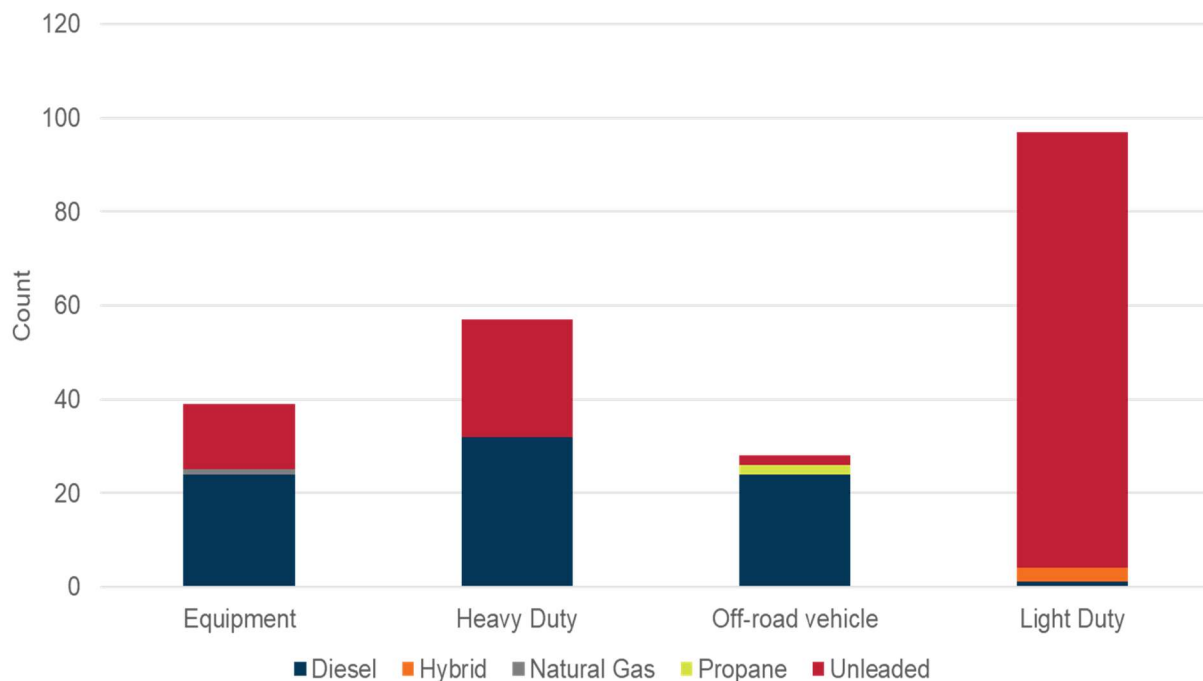


Figure 4. Northglenn fleet by vehicle type and fuel type

There are many additional factors to consider when identifying vehicles for electrification, such as miles driven per day and performance requirements. To support the City's evaluation efforts, the City of Northglenn is participating in FEAP. FEAP helps fleet managers understand which assets are best suited for electrification, identifies ideal electric replacements for current assets, and helps build out a charging infrastructure plan to support future EV investments.

Targets

- Develop targets for a GoEV resolution based on results of the fleet evaluation

Strategies

MU-1 Participate in the Fleet Electrification Advisory Program

Xcel Energy's Fleet Electrification Advisory Program (FEAP) offers innovative ways for the City to electrify their fleet while managing costs and prioritizing performance and reliability. In 2021, the program partnered the City with Xcel Energy and a fleet analytics provider, Sawatch Labs, to support the assessment of 50 vehicles by utilizing telematics equipment. The telematics devices monitor real-world data for 90 days to determine if the vehicle's driving needs could be met with an EV. In addition to receiving a customized report with recommendations for EV replacement, the analysis also assesses charging site suitability and estimates the cost of installing infrastructure.

MU-2 Develop fleet charging infrastructure implementation plan

The City plans to utilize the FEAP assessment to deliver a data-driven 5-7 year Construction In Progress EV Fleet Implementation Plan for inclusion in its annual budget process to inform infrastructure and charging station installation. Through this strategy, Northglenn will work closely with Xcel Energy's EV Advising Team and explore options to utilize the EV Supply Infrastructure (EVSI) program.

MU-3 Explore EV funding opportunities

To support infrastructure installation and vehicle replacement, the City will also explore funding opportunities to help offset the costs to the City for fleet electrification. This may include Charge Ahead Colorado grants and other state or federal funding opportunities. It will also consider how to best utilize the Xcel Energy EV programs to support vehicle replacement and charging infrastructure installation.

Focus Area: Public Adoption

Some of the most common barriers to public adoption of EVs include lack of familiarity with products and technology, lack of knowledge of available incentives, higher up-front cost of electric vehicles, and range anxiety (National Renewable Energy Laboratory, 2017). Increasing public adoption of EVs in Northglenn will require improving access to information about EVs, and when possible, removing cost barriers associated with EV investments. Barriers related to range anxiety and access to charging stations are addressed in the *Focus Area: Public Charging* section.

Strategies in this focus area are aimed at encouraging residents of Northglenn to adopt EVs by connecting residents to information and resources. This includes education and outreach about EVs, chargers, and available incentives; exploring group buy options; and hosting ride & drive events.

Background

The Colorado Electric Vehicle Plan set a goal of 940,000 electric light-duty vehicles on the road by 2030, compared to a 2020 baseline of 32,763 light-duty EVs. To meet this goal, about 35% of new car sales will need to be EVs, compared to 4% in 2020. Northglenn's efforts to contribute to early adoption of light-duty EVs will support the State's effort to cross "the chasm" identified in Figure 5.

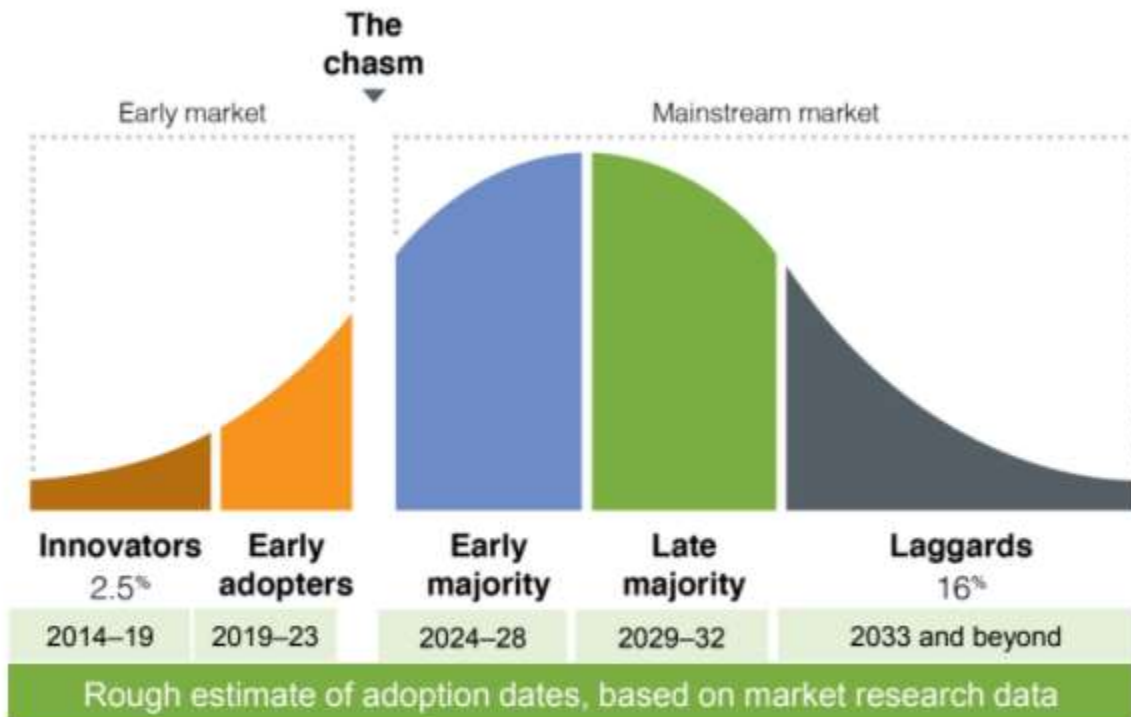


Figure 5. Colorado Energy Office estimated EV market adoption curve

In Northglenn in 2020, only 1% of total registered vehicles were hybrid and less than 1% of registered vehicles were electric (Table 2). This presents an enormous opportunity to advance transportation electrification within the community.

Table 2. Electric vehicle registration as a percent of total vehicle registration in 2020 (Adams County Motor Vehicle Department, 2021)

# of Registrations in Northglenn	2020
Total registered vehicles	27,757
Total hybrid vehicles	286 (1% of total registrations)
Total electric vehicles	48 (0.2% of total registrations)

Outreach and education efforts are an essential step to providing community members a basic introduction to EVs, raising community awareness about the purpose and importance of EVs, and showing the public how transportation initiatives are related to other community issues like air quality, carbon reduction, and other specific energy goals. While community outreach and education efforts, on their own, are not enough to significantly affect EV adoption, they are pivotal in building support for regulatory or code updates, EV rebates, fleet adoption, and voluntary programs across all levels.

As part of Comprehensive Planning efforts, a public survey of the Northglenn community included questions related to public adoption and perceptions of EVs. Results showed that 93% of respondents are planning to, considering, or have already purchased an EV. Full results are available in [Appendix B: Northglenn Transportation Survey Results](#)

Targets

- Increase the number of registered EVs in Northglenn to 1,700 by 2025 and 4,200 by 2030

Strategies

PA-1 Develop a volunteer task force to promote and support EV adoption

Description

The purpose of this strategy is to identify a temporary group of community members, led by City staff, that will help promote and support EV adoption efforts in Northglenn. This group will serve as support at outreach events, be a point of contact to connect interested businesses and residents to key resources and help inform and educate community members about electric vehicles and charging infrastructure.

Target Audience

- Residents
- Businesses
- Property Managers/Owners
- Municipal representatives

Target Outcome

- Establish task force to support immediate and ongoing EV adoption efforts by 2023

Scope and Timeline

2022 Q2	<ul style="list-style-type: none"> • Identify potential existing groups/committees or community partners that could serve in this capacity <ul style="list-style-type: none"> ▪ If no existing group, determine recruitment strategy for alternative stakeholders ▪ Determine City staffing needs and associated obligations • Clarify guidance around the group’s roles and responsibilities • Determine participation, commitment & communication requirements
2022 Q3-Q4	<ul style="list-style-type: none"> • Incorporate task force support into outreach plan; provide group strategy details and targets (developed as part of Strategy PA-2) • Develop training materials for task force • Train task force on appropriate talking points, FAQs, and available resources
2023 Q1-Q2	<ul style="list-style-type: none"> • Identify opportunities for continued engagement, ongoing education, or potential field trips
2023 Q3 and beyond	<ul style="list-style-type: none"> • Incorporate new City staff member into task force to begin to coordinate and lead ongoing initiatives

Roles and Responsibilities

City Staff	<ul style="list-style-type: none"> • Planning & Development will coordinate with current committees, assist with staff recruitment • Communications & Community Engagement will support recruitment and communication associated with public outreach channels
Community Partners	<ul style="list-style-type: none"> • Northglenn Sustainability Committee • HEAL Committee (Healthy Eating & Living) • Businesses • Property managers/owners
Xcel Energy Partners in Energy	<ul style="list-style-type: none"> • Support exploration of and communication about an EV task force • Draft any necessary collateral for recruitment of task force • Support facilitation of 2 task force meetings, including training materials

Resources (funding, staff, materials)

- Love My Air grant opportunities to support task force, if needed
- Staff time, including potential new Sustainability staff member
- Budget to train group members, funding for potential field trips and other task force direct costs (e.g., recognition, food)

Staffing Needs 	Budgeting Needs \$
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Outreach Channels

<ul style="list-style-type: none"> • Sustainability Committee • Internal City communications • Social media 	<ul style="list-style-type: none"> • Northglenn Connection • Economic Development Communications • City E-newsletter • Website
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PA-2 Conduct targeted community education campaign

Description

The purpose of this strategy is to highlight and educate community members about the benefits of EV ownership, ease of charging, and available incentives. Educational outreach will also highlight efforts by the municipality, private businesses, and community centers to build out future public charging infrastructure. This effort will be coordinated with other strategies.

Target Audience

- Community residents

Target Outcome

- Connect with 10,000 community members through outreach by the end of 2023 using existing channels of communications and events.

Scope and Timeline

2022 Q2



- Develop outreach plan
- Define resources specific to multifamily residents
- Determine appropriate outreach channels
- Connect through resources like Northglenn Road Report on social media
- Utilize Sustainability Committee podcast
- Draft website content outline for Northglenn sustainability webpage; use as a resource to link to other information
- Determine what content should be included on Economic Development webpage
- Identify businesses with fleets, including large employers
- Determine if there are existing EV supporters around town that would be interested in being a resource or could be highlighted as part of the outreach plan

2022 Q3-Q4

- Attend summer neighborhood and town events
- Develop and launch website
- Attend Business Appreciation and Business-After-Hours events
- Develop collateral and outreach plan for business fleets, including employee education and charging station education
- Develop and host focus group for business fleet electrification
- Implement education campaign based on outreach plan and focus group feedback
- Incorporate school district into outreach plan activities. Determine approach to Problem-Based Learning and work with school district to integrate into fall semester
- Develop and distribute resources available to connect to multifamily-specific activities

2023 Q1-Q2

- Create collateral that spotlights business and residential successes
- Review outreach of 2022; plan for 2023

2023 Q3 and beyond	<ul style="list-style-type: none"> Continue to revamp and update outreach materials as new technology, financing, and other options become available
Roles and Responsibilities	
City Staff	<ul style="list-style-type: none"> Communications & Community Engagement will lead outreach strategy Planning & Development will support development of materials Economic Development will support outreach to business community Police Department and Neighborhood Services could support distribution of multifamily materials
Community Partners	<ul style="list-style-type: none"> Northglenn Sustainability Committee Adams 12 School District Community Organizations: <ul style="list-style-type: none"> Tri-County Health Department Independent Electrical Contractors Rocky Mountain Association (IECRM)
Xcel Energy Partners in Energy	<ul style="list-style-type: none"> Develop outreach plan and provide best practices Develop outreach collateral and educational materials Support additional outreach
Required Resources (funding, staff, materials)	
<ul style="list-style-type: none"> Consider using Love My Air grants to support outreach Staff time, including potential new Sustainability staff member 	
Staffing Needs	Budgeting Needs
	
Outreach Channels	
<ul style="list-style-type: none"> Events Social media Northglenn Connection Economic Development City E-newsletter Print mailers 	<ul style="list-style-type: none"> Website Channel 8 Adams 12 School District Police Department Neighborhood Services

PA-3 Support and promote community and regional ride & drive events

Description

Outreach events like ride & drive events can be a powerful tool to provide direct experience with an EV. This strategy will explore engaging ways to demonstrate and show EV features and benefits. Local and regional in-person events will be explored, as well as virtual options.

Target Audience

- Community members
- Private businesses

Target Outcome

- Organize at least 1 EV ride & drive event annually through 2023.

Scope and Timeline

2022 Q2	<ul style="list-style-type: none"> • Incorporate ride & drive into outreach plan from Strategy PA-2. • Identify key locations to host ride & drive events • Set up meet & greet with Drive Clean Colorado to plan for events
2022 Q3-Q4	<ul style="list-style-type: none"> • Host 1 to 2 Ride & Drive events – either standalone, or incorporated into existing regional events • Utilize City fleet electrification to demonstrate effectiveness to businesses
2023 Q1-Q2	<ul style="list-style-type: none"> • Review success of events and plan for 2023
2023 Q3 and beyond	<ul style="list-style-type: none"> • Continue hosting events as appropriate

Roles and Responsibilities

City Staff	<ul style="list-style-type: none"> • Community Engagement & Communications for residential-focused/community events • Economic Development for business events (or hosted at businesses) • Planning & Development provide support for events, promotion, etc.
Community Partners	<ul style="list-style-type: none"> • Drive Clean Colorado • Office Evolution • Adams 12 School District • IECRM • Car dealerships • Smart Commute
Xcel Energy Partners in Energy	<ul style="list-style-type: none"> • Develop event promotional materials • Support event planning and share best practices from other communities • Xcel Energy Account Manager to coordinate and provide regional references and support

Required Resources (funding, staff, materials)

- Staff time to coordinate, attend events if necessary (leverage Task Force from Strategy PA-1)

Staffing Needs	Budgeting Needs
	\$

Outreach Channels

- | | |
|--|--|
| <ul style="list-style-type: none">• Events• Social media• Northglenn Connection• E-newsletter | <ul style="list-style-type: none">• Print mailers• Website• Channel 8• Economic Development |
|--|--|

PA-4 Collaborate regionally to organize EV group-buy(s) with auto dealers

Description

Collaborate and partner regionally with auto dealers to organize an EV group-buy event. This strategy includes educating and communicating incentives and resources available for EV buyers. In addition, this strategy will highlight programs that offer EV rentals and leasing options.

Target Audience

- Auto dealerships
- Community residents
- Private businesses

Target Outcome

- Organize a group-buy by the end of 2023.

Scope and Timeline


2022 Q2	<ul style="list-style-type: none"> • Research best practices and other group-buy successes
2022 Q3-Q4	<ul style="list-style-type: none"> • Collaborate with neighboring cities and Adams County to determine interest and resources for group-buy • Identify dealerships and other partners to work with on group-buy
2023 Q1-Q2	<ul style="list-style-type: none"> • Work with dealerships and other partners to establish group-buy
2023 Q3 and beyond	<ul style="list-style-type: none"> • Promote group-buy option to communities regionally

Roles and Responsibilities

City Staff	<ul style="list-style-type: none"> • Planning and Development to review recommended best practices, collaborate with regional partners • Communications to promote group-buy via outreach channels
Community Partners	<ul style="list-style-type: none"> • Regional Air Quality Council (RAQC) • Adams County – county and municipalities • Drive Clean Colorado • Car dealerships • Smart Commute • Businesses
Xcel Energy Partners in Energy	<ul style="list-style-type: none"> • Research and share best practices from other communities • Support promotional material development • Xcel Energy Account Manager to coordinate and provide regional references and support

Required Resources (funding, staff, materials)

- Staff time

Staffing Needs 	Budgeting Needs 
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Outreach Channels

- Adams County regional activities
- For promoting group-buy, see Strategy PA-2 Education & Outreach

For future consideration: Collaborate with IECRM to provide training for electric contractors

Focus Area: Public Charging

Range anxiety, the fear of an EV running out of battery power before reaching a charging station or desired destination, is one of the top barriers preventing people from purchasing an EV. While most EV charging occurs at home or at work, access to and knowledge of available public charging stations can help residents feel more comfortable purchasing an EV. Despite the benefits of public charging, there remain barriers to widespread availability of public charging. Apparent barriers include a lack of knowledge related to the benefits of charging stations (e.g., customer and tenant retention), lack of understanding of where to best locate charging infrastructure, upfront costs of charging infrastructure, and limited tested business models for charging station operation. Barriers related to policy and legislation are addressed in *Focus Area: Policy*.

This focus area aims to increase the number of publicly available charging stations throughout Northglenn, including at workplaces, multi-tenant buildings, community spaces, and other gathering spots. Strategies include completing a mapping and siting study that will offer insight for understanding potential locations to install charging stations, conducting business outreach, developing a collaborative resource to support regional charging corridors and mobility hubs, and promoting and evaluating innovative funding mechanisms for public charging.

Background

Public charging stations play an important role in helping residents feel confident that the required infrastructure is available to support their purchase. In a 2017 study, the National Renewable Energy Lab showed that survey respondents who were more aware of charging stations were more likely to consider purchasing an EV as their next vehicle (National Renewable Energy Laboratory, 2017).

Further, although most EV owners tend to rely heavily on their home as their primary charging location, homeowners in older homes - who rent, or who live in multifamily facilities - may be more likely to rely on public charging stations. Public charging also addresses equity concerns by providing access to residents who live in rental or multifamily homes, use on-street parking, or choose not to charge their vehicles at home. In Northglenn, a significant portion of homes are renter occupied (46.2%) or multifamily homes (34%), presenting ample opportunity to increase equitable access to EV charging in the community.

There are three primary types of EV chargers: Level 1, Level 2, and Level 3 (sometimes referred to as DC fast charging). Level 1 & 2 chargers require lower voltage and cost less to install but take longer to recharge a battery (Figure 6).




<i>Slower charging rate</i>	<i>Quicker charging rate</i>	<i>Fastest Charging Rate</i>
LEVEL 1	LEVEL 2	LEVEL 3
		
VOLTS 120 volts	VOLTS 208/240 volts	VOLTS 480 volts (DC)
AMPS 20 amps	AMPS 30 amps	AMPS <125 amps
CHARGING TIME 8-12 hours	CHARGING TIME 4-6 hours	CHARGING TIME 80% recharged in 20-30 minutes
COSTS Uses residential wall outlet; little to no investment in infrastructure	COSTS \$500-\$8,500 costs (Requires 240V outlet or hardwired charger; does not include electrical upgrades)	COSTS As high as \$50,000 (Expensive infrastructure and equipment costs)

Figure 6. Comparison of Level 1, Level 2, and Level 3 EV charging options

Currently, there are only 3 Level 2 public charging stations within Northglenn City limits (Figure 7). However, in the surrounding communities there are 15 Level 2 public charging stations and 17 DC fast chargers, split among five locations (U.S. DOE, 2022).

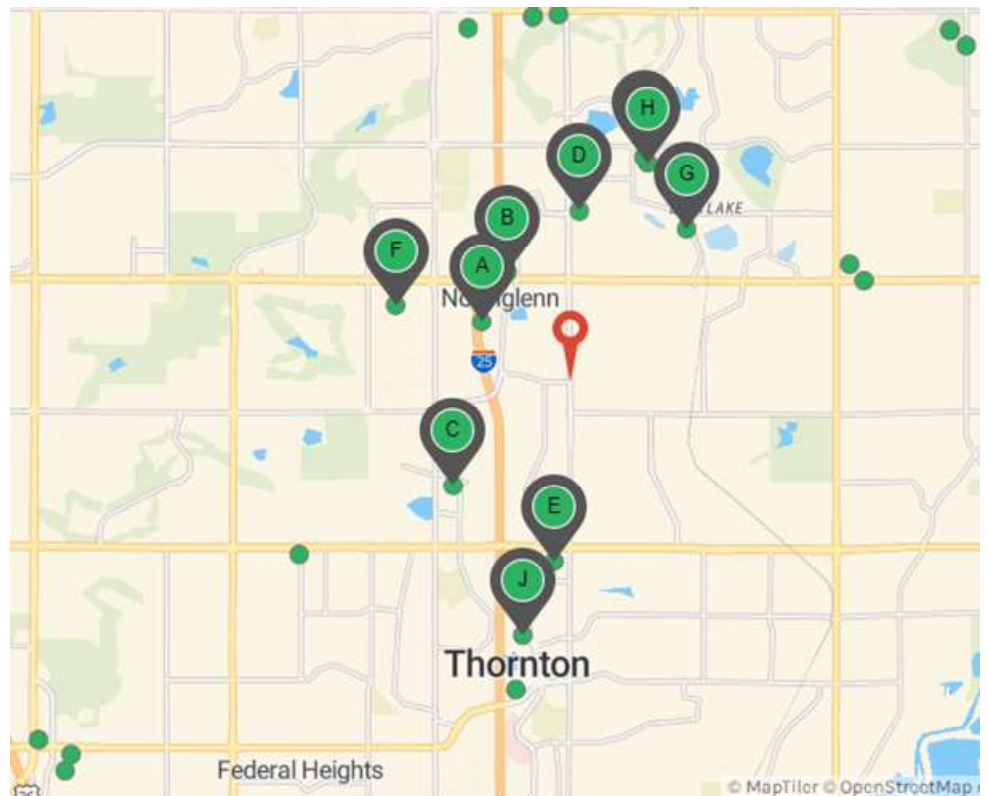


Figure 7. Electric vehicle charging locations in and near Northglenn (U.S. DOE, 2022)

Based on Colorado’s EV goals, statewide charging infrastructure will need to grow by 28% per year by 2030 (see Figure 8). Approximately 80% of chargers are anticipated to be Level 2, and 20% are anticipated to be DC fast chargers (Hsu, Slowik, & Lutsey, 2021).

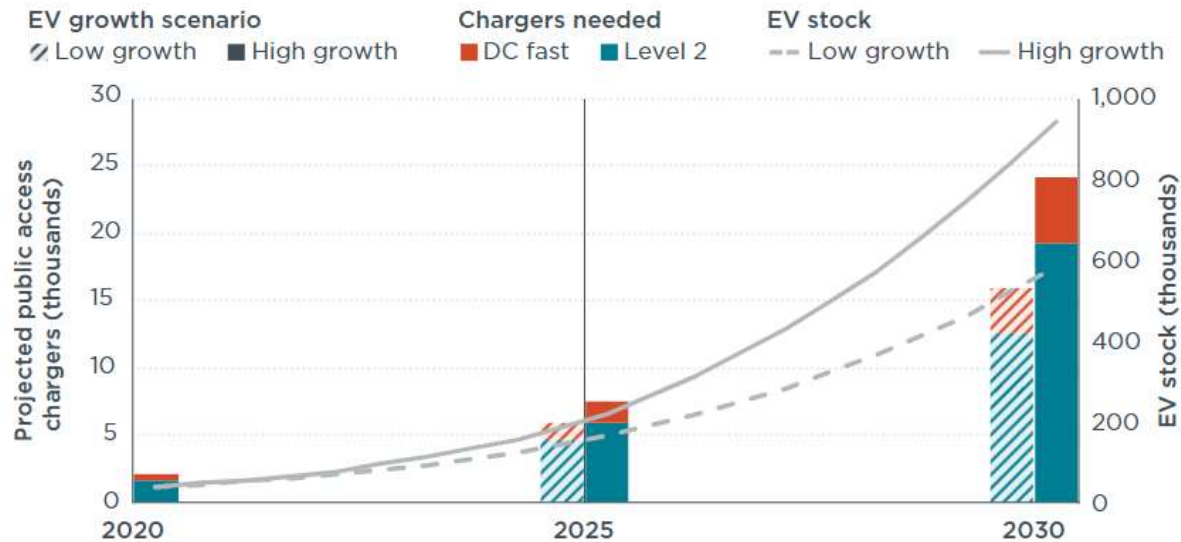


Figure 8. Colorado statewide public charging infrastructure needed under high-growth (70% EV sales by 2030) and low-growth (42.25% EV sales by 2030) scenarios (Hsu, Slowik, & Lutsey, 2021).

Achieving this level of infrastructure will require concerted coordination across public and private entities. This will include supporting installation of at-home charging stations, encouraging workplace charging, incentivizing or requiring multifamily charging, and identifying strategic locations to install public charging.

Targets

- Install 100 public charging stations in Northglenn by 2030
- Build regional partnerships to develop EV charging infrastructure across primary transportation corridors by 2030

Strategies

PC-1: Conduct EV charging siting study and implement findings (public & municipal sites)

Description

Develop a siting study to determine key locations for public charging at municipal sites, private businesses, and community centers. The siting study will include mapping of existing charging station sites, key corridors, multifamily housing proximity, and other factors. Key considerations for determining target locations should include, but are not limited to, traffic patterns and dwell time (how long a driver spends in each location).

Target Audience

- Private businesses open to the public
- Municipal facilities

- Community sites owned by other entities (e.g., libraries, schools)

Target Outcome

- Develop an inventory of potential public and municipal charging sites by understanding traffic patterns, length of stay, existing charging stations, and destination attractions.

Scope and Timeline

2022 Q2	<ul style="list-style-type: none"> • Partners in Energy conduct initial mapping of existing charging sites • City of Northglenn and Partners in Energy determine additional siting options (e.g., equity criteria, multifamily housing, land use, dwell time locations)
2022 Q3-Q4	<ul style="list-style-type: none"> • Finalize mapping • Identify key businesses and community locations for targeted outreach. Include desired level of charging in identification. See Strategy PC-2 for outreach strategy • Identify key locations for City-owned public charging sites. Include desired level of charging in identification • For City-owned sites, identify grant and Xcel Energy opportunities <ul style="list-style-type: none"> ▪ Xcel Energy to work with City to understand infrastructure needs at selected sites
2023 Q1-Q2	<ul style="list-style-type: none"> • For City owned sites: <ul style="list-style-type: none"> ▪ Complete Xcel Energy Electric Vehicle Supply Infrastructure (EVS) program application for applicable sites, if necessary ▪ Complete Charge Ahead Colorado application for applicable sites, if necessary
2023 Q3 and beyond	<ul style="list-style-type: none"> • Install EV charging stations • Repeat process for additional stations

Roles and Responsibilities

City Staff	<ul style="list-style-type: none"> • Office of Planning and Development will lead effort to apply for the EVS program and coordinate application requirements with other departments • Office of Planning and Development will support mapping needs
Community Partners	<ul style="list-style-type: none"> • Diversity, Inclusivity, and Social Equity (DISE) Board advising on locations and informing equity questions
Xcel Energy Partners in Energy	<ul style="list-style-type: none"> • Partners in Energy will lead mapping efforts of existing charging stations and other relevant data points • Partners in Energy will facilitate any questions on public charging analysis and connect City with resources • Xcel Energy EV Advisor will support process of assessing charging needs and planning execution

Required Resources (funding, staff, materials)

- Staff time to support mapping and location identification
- Staff time to complete applications for grants, Xcel Energy programs
- Funding for City-owned charging stations

Staffing Needs

Budgeting Needs



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Outreach Channels

- Not applicable

PC-2 Conduct business outreach campaign

Description

Encourage charging station installation and business participation in Xcel Energy’s Charging EV Solutions, including EV Supply Infrastructure and Critical Peak Pricing Program, through relationship-building efforts, educational outreach, and developing connections to available resources. The EV Supply Infrastructure (EVS) program provides no- to low-cost, turn-key construction services including infrastructure design and build-out. The Critical Peak Pricing Program promotes responsible charging and saves on charging costs.

Target Audience

- Private businesses open to the public
- Commercial property owners / facility managers

Target Outcome

- Connect with 100 private businesses and commercial property owners through outreach by the end of 2023.

Scope and Timeline

2022 Q2	<ul style="list-style-type: none"> • Develop business outreach plan for locations, including collateral, focus group(s), workshops, and Business Walks
2022 Q3-Q4	<ul style="list-style-type: none"> • Develop outreach materials <ul style="list-style-type: none"> ▪ Include guidance on costs and charging levels for different business types ▪ Include funding resources • IECRM and Economic Development host business focus group • Develop business workshop materials • Begin conducting outreach to businesses with existing charging stations to understand motivations, business case, usage (both in Northglenn and regionally). Leverage existing studies as much as possible/applicable • Begin conducting outreach with locations identified in Strategy PC-1
2023 Q1-Q2	<ul style="list-style-type: none"> • Continue targeted outreach based on siting study results • Host business educational workshop in conjunction with IECRM • Review business outreach plan and update as necessary
2023 Q3 and beyond	<ul style="list-style-type: none"> • Continue targeted outreach based on siting study (Strategy PC-1) results • Consider additional workshops


Roles and Responsibilities

City Staff	<ul style="list-style-type: none"> • Office of Economic Development will support development of business outreach plan and lead outreach to businesses and developers • Planning and Development will support outreach
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Community Partners	<ul style="list-style-type: none"> • IECRM • Wells Fargo • Adams 12 School District
Xcel Energy Partners in Energy	<ul style="list-style-type: none"> • Partners in Energy to support outreach plan development and share best practices from other communities • Partners in Energy to draft outreach collateral • Xcel Energy EV Advisor to provide follow-up support to interested businesses

Required Resources (funding, staff, materials)

- Staff time to conduct outreach

Staffing Needs	Budgeting Needs
	\$

Outreach Channels

- Business newsletter
- Northglenn Connection
- Economic Development

PC-3 Develop collaborative resource to support regional charging corridors and mobility hubs

Description

The purpose of this strategy is to learn from and coordinate efforts with neighboring communities and key partners to develop regional charging corridors and/or mobility hubs. This strategy will establish a planning region and identify key stakeholders to discuss and develop area strategies, policies, and regulations around EV charging, as well as develop collaborative relationships to share ideas, lessons learned, and best practices.

Target Audience

- Adams County, City of Thornton, City of Westminster, City of Federal Heights, and City of Brighton
- RTD
- Adams County Regional Economic Partnership
- Colorado Department of Transportation
- Colorado Energy Office
- Smart Commute
- Regional Air Quality Council
- Charging station providers

Target Outcome

- Regular collaboration among regional partners
- Increase charging station access across region

Scope and Timeline

2022 Q2	<ul style="list-style-type: none"> • No major activities
2022 Q3-Q4	<ul style="list-style-type: none"> • Define purpose and structure of regional partnership


	<ul style="list-style-type: none"> Reach out to potential regional partners about interest
Additional scope to consider	<ul style="list-style-type: none"> Leverage regional effort to install DC fast charging stations Complete baseline assessment across communities Opportunities to grow workforce around this public charging initiative Mimic other regional efforts like the green energy code process and Boulder County Regional EV Cohort

Roles and Responsibilities

City Staff	<ul style="list-style-type: none"> Office of Planning and Development will lead coordination with regional partners and inform regional collaboration structure
Community Partners	<ul style="list-style-type: none"> Larger regional employers Adams County – Community and Economic Development Regional Air Quality Council Neighboring municipalities
Xcel Energy Partners in Energy	<ul style="list-style-type: none"> Partners in Energy will facilitate questions on developing a regional partnership and provide City with available resources and connections Xcel Energy Account Manager to coordinate and provide regional references and support

Required Resources (funding, staff, materials)

- Staff time for collaboration sessions

Staffing Needs	Budgeting Needs
	\$

Outreach Channels

- Existing regional collaborations
- Partners in Energy
- Xcel Energy account manager(s)

PC-4 Promote and evaluate innovative funding mechanisms for public charging

Description

Promote existing financing mechanisms and explore innovative funding opportunities such as tax credits, rebates, incentives, loans, and grants for public charging. This strategy includes communicating eligibility and the process requirements for national and local funding resources, including the Charge Ahead Colorado electric charging infrastructure grant program for Level 2 and Level 3 charging stations.

Target Audience

- Private businesses
- Commercial property owners
- Public facilities

Target Outcome

- Providing grant support in application process
- Identify funding resources (state, local, utility) for potential matches

Scope and Timeline

2022 Q2	<ul style="list-style-type: none"> • Develop inventory of existing incentives • Determine budget for sustainability programs, including EV support, for 2023 budget
2022 Q3-Q4	<ul style="list-style-type: none"> • In conjunction with outreach in Strategy PC-2, share information about existing programs and incentives available for charging station installation • Research funding opportunities available for EV charging outside of City resources
2023 Q1-Q2	<ul style="list-style-type: none"> • Continue promoting existing incentives • Consider establishing City-operated sustainability grant program for increasing EV charging and adoption for 2024 budget
2023 Q3 and beyond	<ul style="list-style-type: none"> • Continue promoting existing incentives • Propose new funding mechanisms for consideration by City leadership

Roles and Responsibilities

City Staff	<ul style="list-style-type: none"> • Inform budget of sustainability program • Inform budget and structure of potential new grant program
Community Partners	<ul style="list-style-type: none"> • Engage with regional partners and entities, like Adams County, to develop innovative funding mechanisms • Colorado Energy Office (CEO), Colorado Department of Transportation (CDOT), Drive Clean Colorado to connect to state and federal funding
Xcel Energy Partners in Energy	<ul style="list-style-type: none"> • Partners in Energy to support exploration and communication of available funding resources. • Xcel Energy EV Advisor to share available no- to low-cost programs and available incentives and rebates associated with installing charging infrastructure

Required Resources (funding, staff, materials)

- Staff time
- Consider leveraging existing Economic Development grant programs for electrical upgrades to support EV charging stations

Staffing Needs	Budgeting Needs
	\$

Outreach Channels

- N/A

Public Charging Priority: Multifamily Housing

The City of Northglenn identified multifamily housing and equity concerns as critical priorities for consideration throughout the EV planning process. Of Northglenn's 13,836 housing units, nearly 33% are classified as multifamily and 46% as renter occupied (U.S. Census Bureau, 2019), representing a large portion of the community and a significant opportunity to broadly support equitable access to EVs and EV charging infrastructure. There are currently 20 multifamily properties in Northglenn (Figure 9), with 7 falling in an area designated as a Higher Emissions Community (HEC) by Xcel Energy thereby eligible for additional EV planning support and incentives. HECs are characterized as being disproportionately affected by vehicle emissions-related air quality concerns and may also be impacted by income inequality.

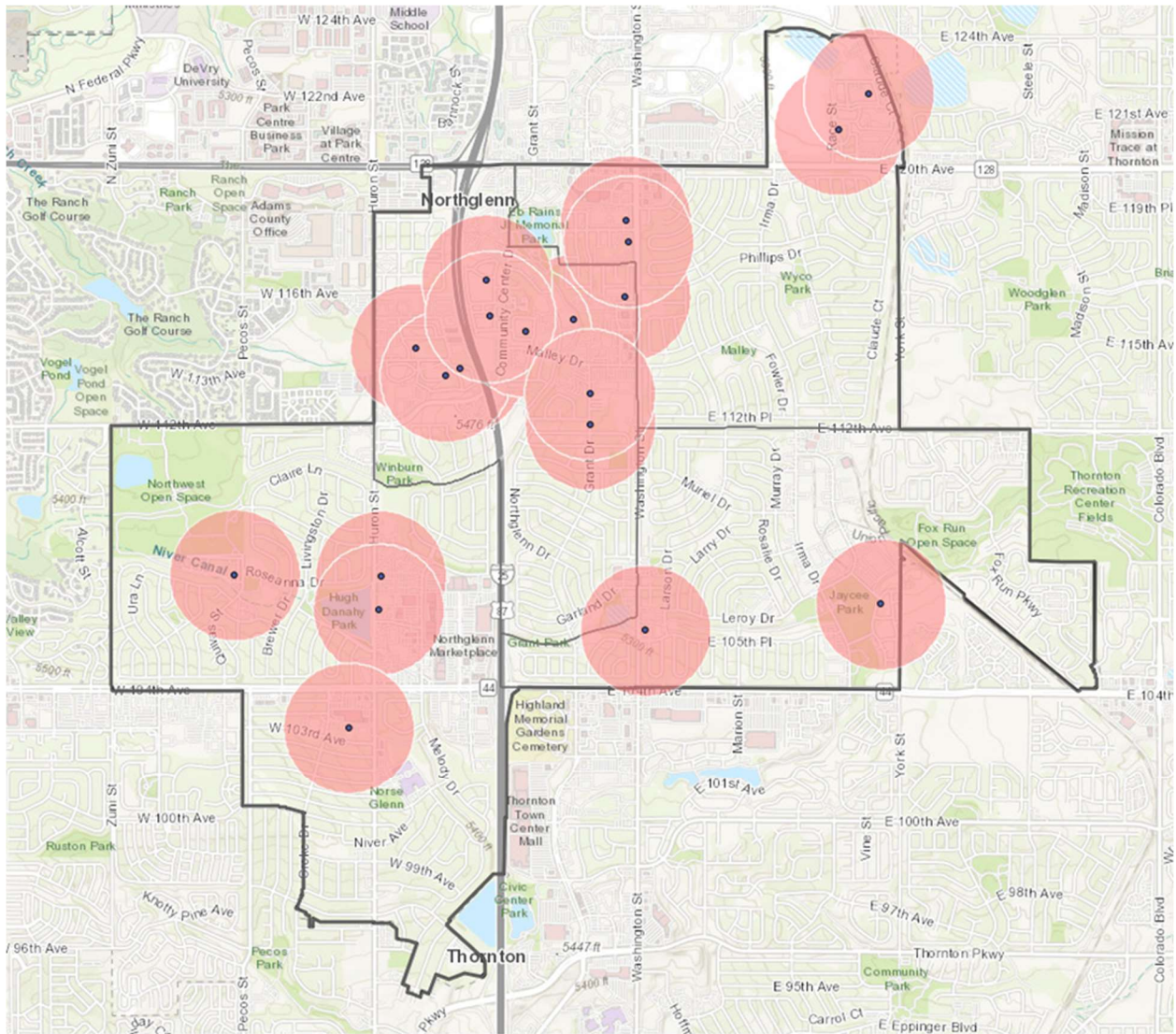


Figure 9. Map of Northglenn multifamily properties with 1/4 mile perimeters highlighted

In addition, for multifamily residents the choice to install EV charging equipment is often not theirs to make. They may have to rely solely on public charging stations, due to factors like limited parking or communal parking lots, shared electric utility meters, electrical room capacity constraints, or retrofit costs associated with installing charging infrastructure for property owners and managers.

This focus area priority aims to increase the number of charging stations near multifamily properties throughout Northglenn and provide EV resources for residents. Strategies include conducting a siting assessment to locate public charging within a defined ¼ mile of a multifamily property (see Figure 9); through outreach encourage property owners to install charging stations; and explore potential funding mechanisms specific to multifamily needs.

Targets

- Install at least 1 charging station within ¼ mile of each multifamily property by 2030

Strategies

MF-1: Encourage property owners to install charging stations

Description	
Encourage charging station installation and participation in Xcel Energy’s Multifamily Charging Solutions programs through relationship building and outreach efforts with property owners and by providing connections to available resources. Outreach will highlight the four program options available and the requirements of each. Conduct targeted outreach to multifamily properties in areas designated as Xcel Energy HECs.	
Target Audience	
<ul style="list-style-type: none"> • Property owners • Property managers 	
Target Outcome	
<ul style="list-style-type: none"> • Engage with at least 10 multifamily properties by the end of 2023 through relationship building and outreach efforts. 	
Scope and Timeline	
2022 Q2	<ul style="list-style-type: none"> • Develop outreach plan on best way to message needs to both the property owners and managers • Build out coaching opportunities for property managers to speak to needs directly to property owners • Develop outreach materials • Research and determine correct contacts and contact methods (property managers, property owners)
2022 Q3-Q4	<ul style="list-style-type: none"> • Coordinate with Xcel Energy on outreach campaign; provide contact information for property owners and managers to leverage the Xcel Energy EV team (program, rebate, and EV focused) • Communicate specific intake sites to Xcel Energy team • Xcel Energy team can support the communication efforts

	<ul style="list-style-type: none"> • Xcel Energy team can speak to the business case and provide strategies to keep EV costs low
2023 Q1-Q2	<ul style="list-style-type: none"> • Mail/email outreach materials • Outline benefits and rebates • Acquire commitments around charging infrastructure installation
2023 Q3 and beyond	<ul style="list-style-type: none"> • Potential new City Staff position to establish relationships with appropriate stakeholders. • Set up meetings and discuss resources • Coordinate and support application processes • Walk-through benefits and requirements around EV infrastructure and available programs

Roles and Responsibilities

City Staff	<ul style="list-style-type: none"> • Police Department, currently a trusted resource, to utilize lunch & learns to share information • Neighborhood Services to explore opportunities to build better relationships and share information • No current resource that could support ongoing relationship building and outreach - new City resource needed • Planning & Development will support the development of the new resource requirements •
Community Partners	<ul style="list-style-type: none"> • Tri-County Health to provide subsidized housing contacts and connect with other community sustainability resources • Adams County Assessor’s Office
Xcel Energy Partners in Energy	<ul style="list-style-type: none"> • Partners in Energy will develop outreach materials including talking points and collateral • Xcel Energy EV team will support coordination with property owners and managers

Required Resources (funding, staff, materials)

- Need new City staff resource(s) (e.g., sustainability staff/coordinator position) to build and maintain these relationships
 - Budget needed for new staff resource(s)

Staffing Needs	Budgeting Needs
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Outreach Channels

<ul style="list-style-type: none"> • Email • Northglenn Connection • E-newsletter 	<ul style="list-style-type: none"> • Print mailers • Website
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MF-2: Conduct public charging needs and siting assessment for multifamily
Description

Develop a siting study to determine key locations for charging for multifamily sites. Siting study will include mapping of existing charging station sites, key corridors, multifamily housing proximity, and other factors.

Target Audience

- Property owners

Target Outcome

- Develop an inventory of charging sites

Scope and Timeline


2022 Q2	<ul style="list-style-type: none"> • Conduct initial mapping to determine additional siting concerns (e.g., walkability, accessibility, proximity to public charging, sidewalk access, ADA requirements, HOA considerations, street parking/fire lane restrictions) • Overlay with data around air quality and low-moderate income housing (Colorado Department of Public Health and Environment (CDPHE) Climate Equity mapping) • Integrate with Strategy PC-1 • Partners in Energy will review Northglenn’s Bicycle and Pedestrian Master Plan (Connect Northglenn) • Partners in Energy will evaluate parks and other potential locations for community hub areas
2022 Q3-Q4	<ul style="list-style-type: none"> • Finalize mapping in early Q3 • Identify key locations for targeted outreach. Include desired level of charging in identification. See Strategy MF-1 for outreach strategy • Identify potential funding and determine Xcel Energy program opportunities for key locations

Roles and Responsibilities

City Staff	<ul style="list-style-type: none"> • Office of Planning and Development will support mapping needs • New staffing resource will support connecting property owners with relevant programs
Community Partners	<ul style="list-style-type: none"> • N/A
Xcel Energy Partners in Energy	<ul style="list-style-type: none"> • Partners in Energy will lead mapping efforts and incorporate other relevant data points • Partners in Energy will facilitate any questions on charging analysis and connect City with resources • Xcel Energy EV Advisor will support process of assessing charging needs, requirements, electrical upgrades, and project execution

Required Resources (funding, staff, materials)

- Staff time to support mapping and location identification

<p>Staffing Needs</p> 	<p>Budgeting Needs</p> <p>\$\$\$</p>
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Outreach Channels

- Not applicable

MF-3: Explore creative funding mechanisms for multifamily-specific needs and connecting properties to funding

Description

Promote existing financing mechanisms and explore innovative funding opportunities such as tax credits, rebates, incentives, loans, and grants specific to multifamily needs. Evaluate incentive opportunities associated with Xcel Energy’s HEC designation and Income Qualification guidelines. Strategy includes communicating eligibility and the process requirements for national, local, and utility funding resources, including the Charge Ahead Colorado electric charging infrastructure grant program for Level 2 and Level 3 charging stations.

Target Audience

- Property Owners
- Tenants

Target Outcome

- Establish City grant program for EV charging station installation

Scope and Timeline

2022 Q2	<ul style="list-style-type: none"> • Define needs and financial gaps based on funding available and total expected costs (e.g., repaving) • Flexible, range of amounts associated with extra fees based on property scenario • City would not accept grant for a station that is not on City property and not owned/maintained by the City
2022 Q3-Q4	<ul style="list-style-type: none"> • Coordinate outreach based on grant deadlines with the Drive Clean Colorado, to utilize Recharge Coaches to receive assistance in completing grant and EVSI applications
2023 Q1-Q2	<ul style="list-style-type: none"> • Allocate potential new staffing resource to research grant program development and develop incentive programs • Develop City grant program framework • HEAL committee program can be used as a reference • Develop budget requests to support installation of charging stations at multifamily properties
2023 Q3 and beyond	<ul style="list-style-type: none"> • Communicate availability of City grant resources and encourage application • Support grant applications • Submit budget requests to support future incentive opportunities

Roles and Responsibilities

City Staff	<ul style="list-style-type: none"> • Planning & Development will support the development of the new resource requirements • Coordinate with outreach in Strategy MF-1 to provide funding opportunities
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Community Partners	<ul style="list-style-type: none"> • Drive Clean Colorado can aid properties with Charge Ahead grant applications • Recharge Coaches – Gabriela Perkins • HEAL committee
Xcel Energy Partners in Energy	<ul style="list-style-type: none"> • Partners in Energy to support exploration and communication of available funding resources • Xcel Energy EV Advisor to share available no- to low-cost programs and available incentives and rebates associated with installing charging infrastructure

Required Resources (funding, staff, materials)

- Staff time
- Funding to administer grant program

Staffing Needs	Budgeting Needs
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Outreach Channels

<ul style="list-style-type: none"> • Police Department • Neighborhood Services • Northglenn Connection • Social media 	<ul style="list-style-type: none"> • Economic Development • Direct email or phone calls • Mailers
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Focus Area: Policy

As technology around EVs and charging infrastructure continues to evolve, policies should be revisited and updated to support EV adoption. At the local level, opportunities to support EV adoption through policy efforts include integrating EVs into existing plans; modifying zoning, codes, and standards to incorporate EVs and charging infrastructure; and updating permitting processes for charging infrastructure. The right policies can reduce barriers to EV adoption by lowering the cost of EVs and EV infrastructure as well as providing consistency across the community to make it easier to own and operate EVs and EV infrastructure. Forward thinking policies can also position Northglenn as a leader in the region. Common barriers to the adoption of EV policy include lack of public support; pushback from developers, homebuilders, or homeowners' associations; and planning cycles that are misaligned with EV planning timelines.

Background

There are several key policy levers within the City of Northglenn's purview to reduce barriers to EV adoption. These include integration with other plans; zoning, codes and standards; and permitting and incentives.

Integrating with Other Plans

Adding EV goals and policies to other plans can bolster support for EV adoption and show the City's commitment to a low-emissions future. Northglenn is currently updating its comprehensive plan, which offers an excellent opportunity to integrate EVs into the community's most foundational policy document.

Zoning, Codes, and Standards

The City can also bolster development codes to ensure new development provides EV-capable, EV-ready, and EV-installed spaces. For instance, Boulder County currently requires 2% of all new multifamily and commercial development be EV-ready. In Lakewood, select land uses with over 10 spaces are required to provide 5% EV-installed spaces and 10-15% EV-ready spaces. Installing EV infrastructure at the time of development is significantly less costly than retrofitting parking spaces with EV infrastructure (see Figure 10).

Understanding EV Code Options

EV-capable spaces include electrical panel capacity with a dedicated branch circuit and continuous raceway to the future EV parking space.

EV-ready spaces include all of the above plus a junction box or 240-volt charging outlet.

EV-installed spaces include all of the above plus an operating charging station.

(SWEET, 2018)

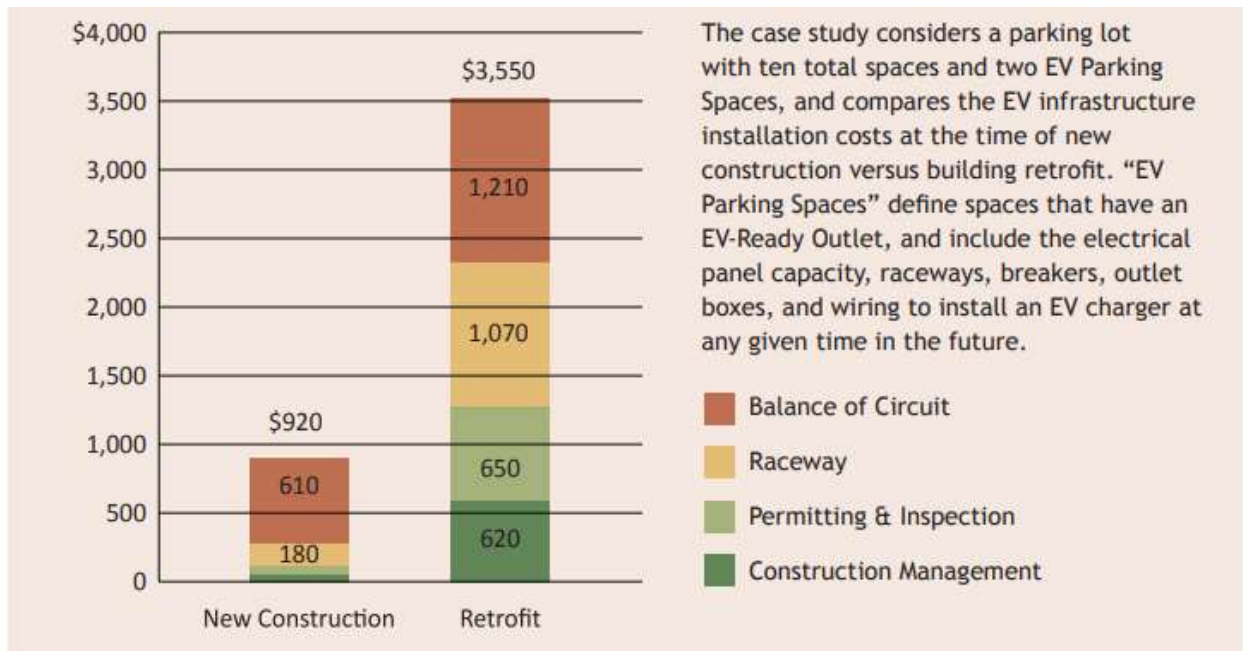


Figure 10. 2016 Case Study prepared for the City and County of San Francisco, comparing cost per EV parking space between new construction and retrofits. (SWEET, 2018)

Northglenn’s Unified Development Ordinance was updated in 2019 to incentivize the addition of EV charging infrastructure by reducing off street parking minimum requirements for development. Developers can receive a reduction of between 5-10% for providing EV-ready spaces and between 10-20% for providing EV-installed charging spaces (Figure 11). Northglenn does not currently require EV-ready or EV-installed charging spaces, which may present an opportunity to guarantee affordable EV charging opportunities with future development.

Table 4-6-B: Parking Reduction Maximums for Electric Vehicle Charging		
Electric Vehicle (EV) Charging Infrastructure	EV Charging Spaces Provided (min)	Parking Reduction (max)
EV-ready spaces (basic infrastructure installed that would allow for future wiring)	5 to 9.99 percent of required parking spaces	5 percent
	10 percent or more of required parking spaces	10 percent
EV charging spaces (fully functional)	5 to 9.99 percent of required parking spaces	10 percent
	10 percent or more of required parking spaces	20 percent

Figure 11. Excerpt of Northglenn Unified Development Ordinance Development Standards

Municipal codes can also be used to set consistent standards related to EV charging rates and pricing. For instance, City of Fort Collins municipal code specifies hourly charging rates for Level 2 and Level 3 public charging infrastructure, with point of service collection. This ensures a consistent experience for EV drivers throughout the city and reduces uncertainty related to rate setting. Currently, the City of Northglenn has three EV chargers. While free charging is attractive to EV drivers, it may deter some business owners from investing in public charging infrastructure.

Note that some opportunities to support EVs through code change are not available to the City of Northglenn. For instance, the City cannot require common signage to indicate EV parking. However, the City could provide free signage to encourage a consistent experience for EV drivers across the city.

Permitting and Other Incentives

Incentives that remove time and cost barriers can help spur EV adoption. For instance, ensuring a quick, easy, and inexpensive permitting process can remove an unwanted barrier to the installation of EV infrastructure. In Northglenn, EV charging permits are currently tracked as an electrical permit. Tracking these separately could allow the City to develop a more streamlined permitting process and also help the City measure installation of EV infrastructure.

Other incentives, like parking incentives, can boost the benefits of owning an EV. For instance, the City of Aspen provides free parking for EVs in residential areas. This reduces both hard costs associated with paid parking and time spent looking for parking spaces.

Targets

- Update and adopt policies to increase EV infrastructure and consistent EV practices across Northglenn
- Enact multifamily policies to require 5% EV-installed / 15% EV-ready / 40% or 80% EV-capable development codes (to be finalized and approved)

Policies to Implement

Policy/Strategy	Description
Update building codes	<ul style="list-style-type: none"> • Include provisions for EV-capable, ready, or installed in building codes • Possible to provide different requirements across building types (residential, commercial, multifamily) • Can include EV supply equipment standards
Develop EV Siting Guide	<ul style="list-style-type: none"> • Recommended guidelines or required standards • Encourage developers and partners to follow consistent practices • Include considerations such as (but not limited to): parking space dimensions, parking configurations, standard signage, lighting, accessibility

	<ul style="list-style-type: none"> • Could include EV supply equipment standards
Designate EV Charging as permitted land use	<ul style="list-style-type: none"> • Explicitly allow/require EV charging where appropriate. May be designated by charging station level, number installed, public availability • Example – permit gas stations to include Level 2 or 3 infrastructure as a permitted use
Simplify permitting	<ul style="list-style-type: none"> • Clear and consistent website information • Simple applications that can be completed/submitted online • Process checklists • List of common errors and resolutions • Online platforms that allow applicant to track status and allow City to track number
Permit tracking	<ul style="list-style-type: none"> • Modify permits to include EV-specific activities, to allow for future tracking
Charging station grant funding	<ul style="list-style-type: none"> • Provide City funded grants to qualified candidates • Could be residential, multifamily, or commercial focused • Stack with Xcel Energy and Charge Ahead grants
Develop paid charging policy for municipal sites	<ul style="list-style-type: none"> • Determine appropriate fee structure to offset costs of public charging access
Consider EV - readiness in community master plans	<ul style="list-style-type: none"> • Include EV-readiness considerations in public engagement, goals, and strategies of community master plans

Staffing Resources

Through the planning process, the stakeholder team identified the need for additional staffing resources or full time equivalent (FTE) positions to ensure successful implementation of these strategies in order to achieve the targets and goals outlined. As such, the stakeholder team recommends a budget request for an additional staff member to manage sustainability initiatives, including this EV Action Plan, for the 2023 fiscal year.

This staff resource would be responsible for tasks including, but not limited to: overseeing and conducting outreach and education campaigns for residents, multifamily housing, and businesses; building relationships; managing the EV task force; and identifying and applying to funding sources.

Below is a summary of the range of staffing and nonlabor budget needs associated with each of the strategies within this plan. These estimates represent the total impact of implementing the strategies and do not necessarily translate into direct staffing or budget requests but instead represent the commitment required to execute the work identified in this plan.

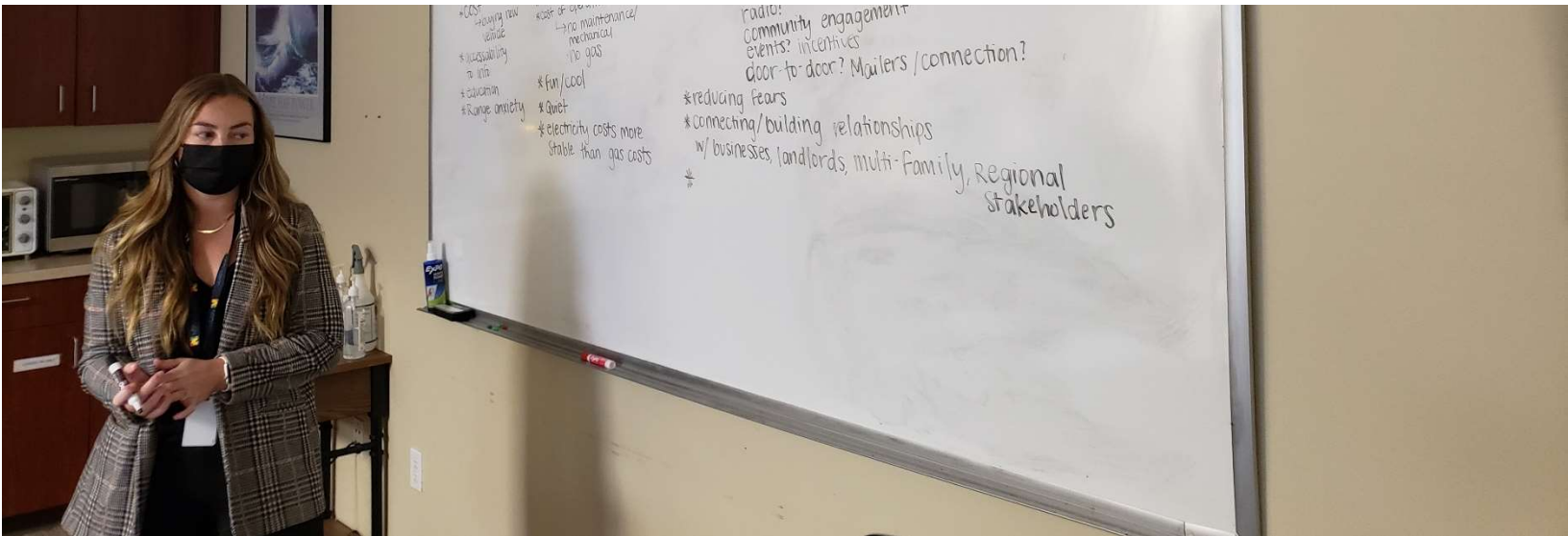
Strategy	Staffing Needs	Nonlabor Budget Needs
PA-1: Develop a volunteer task force to promote and support EV adoption	0.1 – 0.5 FTE	\$0 - \$5,000
PA-2: Conduct targeted community education campaign	0.0 – 0.1 FTE	\$0 - \$5,000
PA-3: Support and promote community and regional ride & drive events	0.0 – 0.1 FTE	\$0 - \$5,000
PA-4: Collaborate regionally to organize EV group-buy(s) with auto dealers	0.1 – 0.5 FTE	\$0 - \$5,000
PC-1: Conduct EV charging siting study and implement findings (public & municipal sites)	0.1 – 0.5 FTE	\$20,000 – \$125,000
PC-2: Conduct business outreach campaign	0.0 – 0.1 FTE	\$0 - \$5,000
PC-3: Develop collaborative resource to support regional charging corridors and mobility hubs	0.0 – 0.1 FTE	\$0 - \$5,000
PC-4: Promote and evaluate innovative funding mechanisms for public charging	0.1 – 0.5 FTE	\$0 - \$5,000
MF-1: Encourage property owners to install charging stations	0.5 – 1 FTE	\$5,000 – \$20,000
MF-2: Conduct public charging needs and siting assessment for multifamily	0.1 – 0.5 FTE	\$20,000 – \$50,000
MF-3: Explore creative funding mechanisms for multifamily-specific needs and connecting properties to funding	0.1 – 0.5 FTE	\$50,000 – \$125,000
FTE & Budget Range for all Strategies	1 – 4 FTE	\$95,000 - \$355,000

Electric Vehicle Action Plan Impact

The combined targets and strategies outlined in this plan will:

- Accelerate Northglenn's transition to a municipal electric fleet by participating in Xcel Energy's Fleet Electrification Advisory Program.
- Grow the number of registered electric vehicles in Northglenn to 4,200 by 2030, increasing the number from 48 in 2020.
- Install 100 public charging stations in Northglenn by 2030, an increase from 3 in 2020.
- Achieve 20 charging stations located within ¼ mile for all multifamily properties by 2030.
- Achieve 5% EV-installed, 15% EV-ready, and 40% or 80% EV-capable development codes (to be finalized and approved).

HOW WE STAY ON COURSE



This EV planning effort yielded ambitious goals that align with the City’s Sustainability Plan and EV vision. To achieve the targets and EV goals outlined in this plan, the City of Northglenn and its partners identified in the strategies above will work to maintain consistent and clear communication among themselves and with the community at large. Implementation will coordinate closely with the Energy Action Plan strategies and will be made up of a similar team. They will communicate regularly to work out the details of strategy implementation, follow through with identified actions, and share progress and results. As the City works to implement the strategies outlined in this plan, additional resources to support the community EV transition are available at xcelenergycommunities.com/evtoolkit. The most up-to-date information about Xcel Energy’s EV programs and offerings, as well as basic information to help support EV adoption, can be found at XcelEnergy.com/EV.

Tracking Progress and Adjusting Course

To ensure this plan remains on track, the implementation team will track metrics by the focus areas outlined in Table 3 to review progress toward stated focus area targets and plan goals (on an annual basis) to assess if the efforts are on track to reach the goals.

The implementation team will meet once a month, aligned with Energy Action Plan implementation. Additional team members will be brought in as relevant to provide updates. These meetings will discuss strategy tactics and progress, review relevant metrics, discuss roadblocks, and determine if new approaches may be necessary. The [Xcel Energy EV Toolkit](#) can be a good resource for identifying new strategies to address unexpected barriers that may come up. Any adjustments will be documented and shared with the broader group and community as they occur.

It will be important to let the wider community know how things are progressing and to recognize the collaborative efforts of those involved in reaching the plan targets. At critical milestones, the City of Northglenn will publish updates on progress, share successes, and congratulate participants and partners through various communication channels.

Table 3: Focus Area Tracking Summary

Focus Area	Target	Data Source	Strategy outcomes
Public Adoption	4,200 electric vehicles	Adams County DMV	<ul style="list-style-type: none"> At least 1 ride & drive event 10,000 residents reached through outreach campaign(s) Task force established Group-buy(s) initiated
Public Charging	100 public stations Regional collaboration	U.S. DOE AFDC	<ul style="list-style-type: none"> Develop potential siting locations map 100 businesses reached through outreach campaign(s)
Multifamily Housing Charging	Charging station within ¼ mile proximity of properties	U.S. DOE AFDC and Partners in Energy mapping	<ul style="list-style-type: none"> Engage with at least 10 multifamily properties by the end of 2023 At least 3 multifamily properties install charging stations by the end of 2023
Policy	Update and adopt policies to increase EV infrastructure and consistent EV practices	Northglenn Planning Department	<ul style="list-style-type: none"> See <i>Policies to Implement</i>

Adapting to a Changing Landscape

Even though this plan outlines strategies to promote EV adoption over the next 8 years, an effective plan is cyclical in nature. In addition, the nature of implementation requires staging, flexibility, and course adjustment when necessary, to be successful and to sustain progress.

Furthermore, the focus area strategy work plans reflect the current situation for a rapidly evolving technology. It will be important that strategies are evaluated and updated throughout implementation, reflecting advancements and new offerings from the automotive and transportation industry and Xcel Energy. Relationships built between City staff and Xcel Energy staff throughout the planning process will foster the collaboration and cooperation required to successfully navigate the changing EV landscape.

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APPENDIX A: XCEL ENERGY'S PARTNERS IN ENERGY EV PLANNING PROCESS



About Xcel Energy's Partners in Energy

Xcel Energy is an electric and natural gas utility that provides the energy that powers millions of homes and businesses across eight Western and Midwestern states. Each community Xcel Energy serves has its own unique priorities and vision for energy. Energy is a dynamic topic, and it is changing rapidly with new ways to save, the growth of renewables, EVs, and changing regulations. With these competing priorities and stretched resources, creating and maintaining an energy-conscious culture within your community can be a missed opportunity in meeting energy and sustainability goals. In the summer of 2014, Xcel Energy launched Partners in Energy as a collaborative solution for communities to reach their energy goals. In 2019, Partners in Energy launched an EV-specific planning process to help communities develop plans to meet their EV goals (see Figure 12).

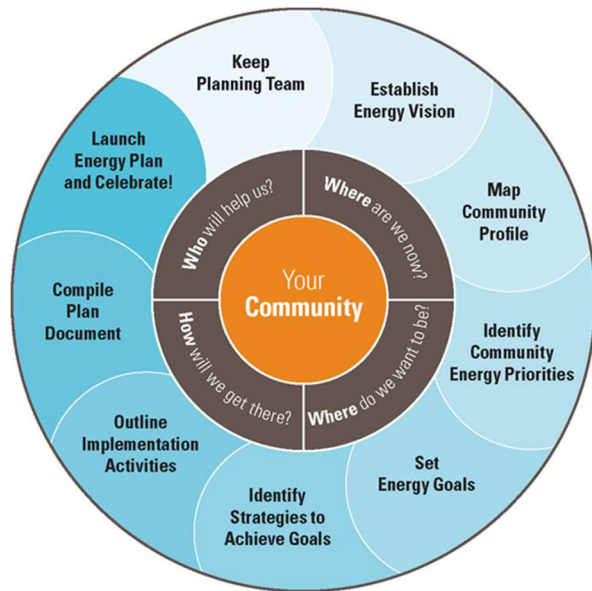


Figure 12: Partners in Energy Process for Success

Plan Development Process

The content of this plan was developed through three workshops and three focus group sessions with stakeholders from City leadership, City staff, Tri-County Health Department, Adams 12 School District, and other community partners. The workshops were conducted in person and the focus group sessions were hosted online.

A kickoff meeting was held virtually in March 2021 to provide an overview of the planning process and help identify the City’s preliminary priorities, in order to inform plan development. During this kickoff meeting, the roles and responsibilities of the planning team were confirmed. The planning team included Partners in Energy facilitators, Xcel Energy representatives, and City of Northglenn representatives.

Workshop 1 was held in September 2021. During Workshop 1, stakeholders were provided baseline information about EVs, including fleet information, market share, and public charging infrastructure. The planning team used this information to draft a preliminary vision for the EV Action Plan, confirm focus areas, prepare an overarching plan goal, and determine preliminary targets for each focus area.

During Workshop 2, the planning team confirmed focus area targets and spent time brainstorming strategies, barriers, and benefits in each focus area. Following Workshop 2, the planning team participated in a transportation survey to identify public perception around EV adoption and EV charging. Three focus group sessions were held in January 2022 to rank plan strategies and build out associated work plans.

In Workshop 3, a draft of the EV Action Plan was reviewed by the planning team; staffing and budget needs required to implement the plan were also discussed. This EV Action Plan was developed using the information identified during the workshops and the focus group sessions and was then reviewed and refined by City staff and the stakeholder team.

Plan Implementation

Partners in Energy provides 18 months of support for implementation of an EV action plan. This support is designed to supplement both technical analysis and support available through Xcel Energy’s other EV offerings. Services offered through the Partners in Energy team are shown in Figure 13.

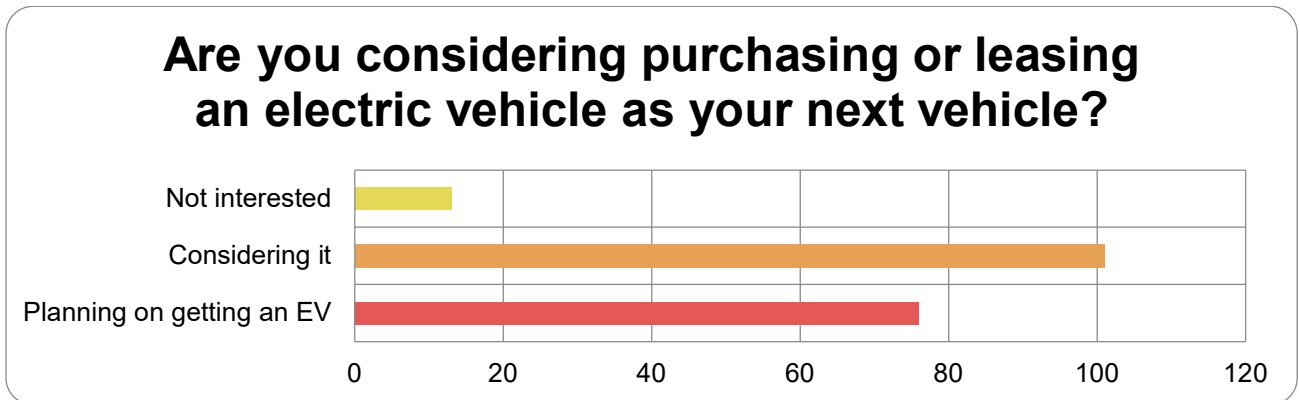
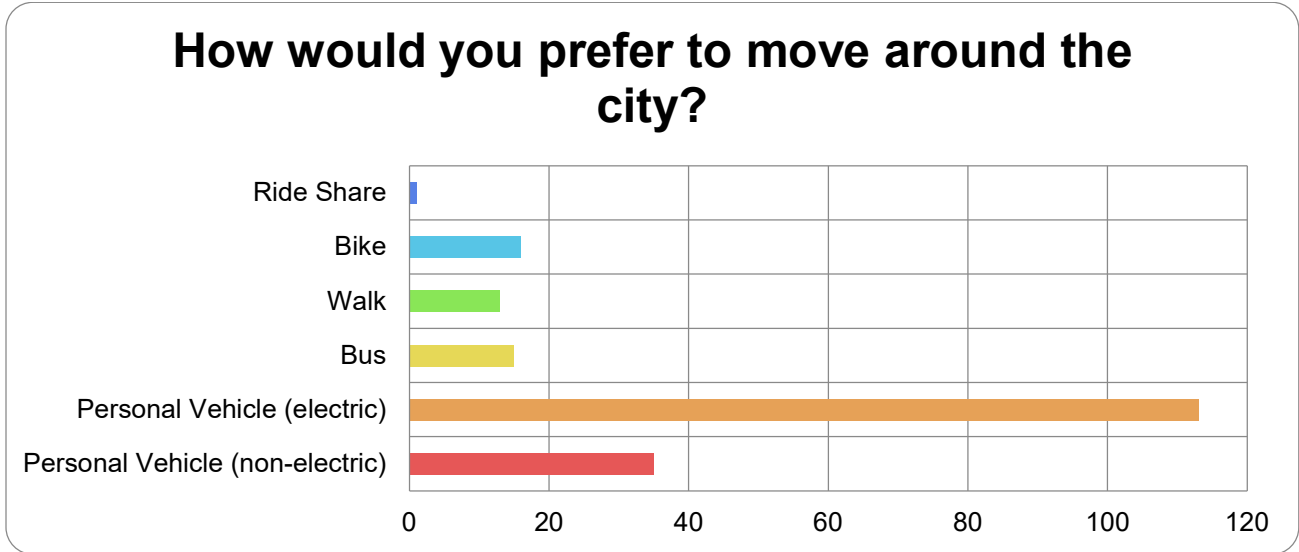
Throughout the plan, strategies that will be supported by Partners in Energy staff are identified, and the memorandum of understanding for this support is shown in *Appendix F: Implementation Memorandum of Understanding*.



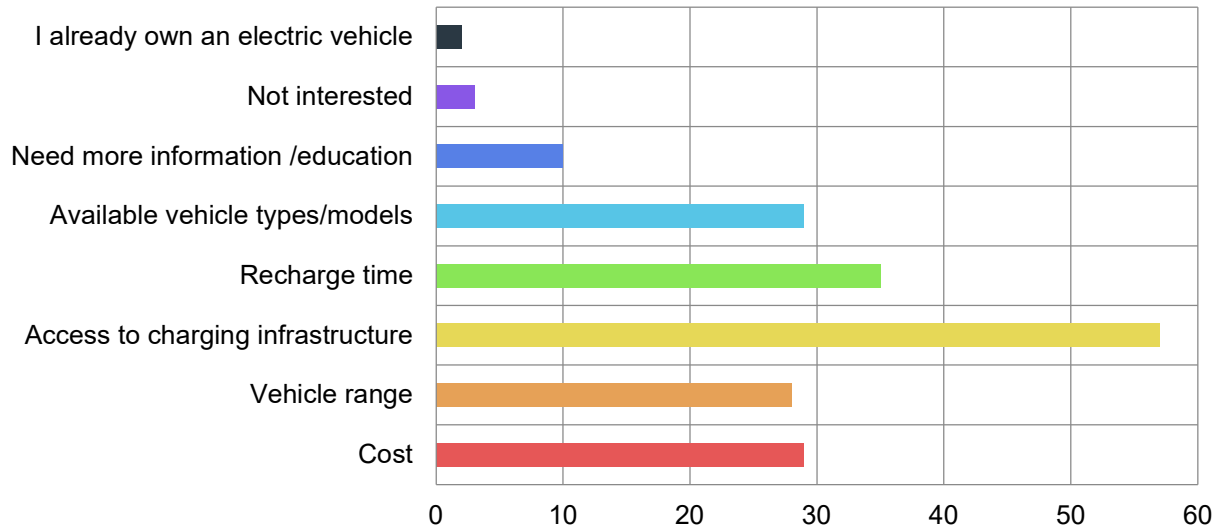
Figure 13: Resources from Xcel Energy for Implementation

APPENDIX B: NORTHGLENN TRANSPORTATION SURVEY RESULTS

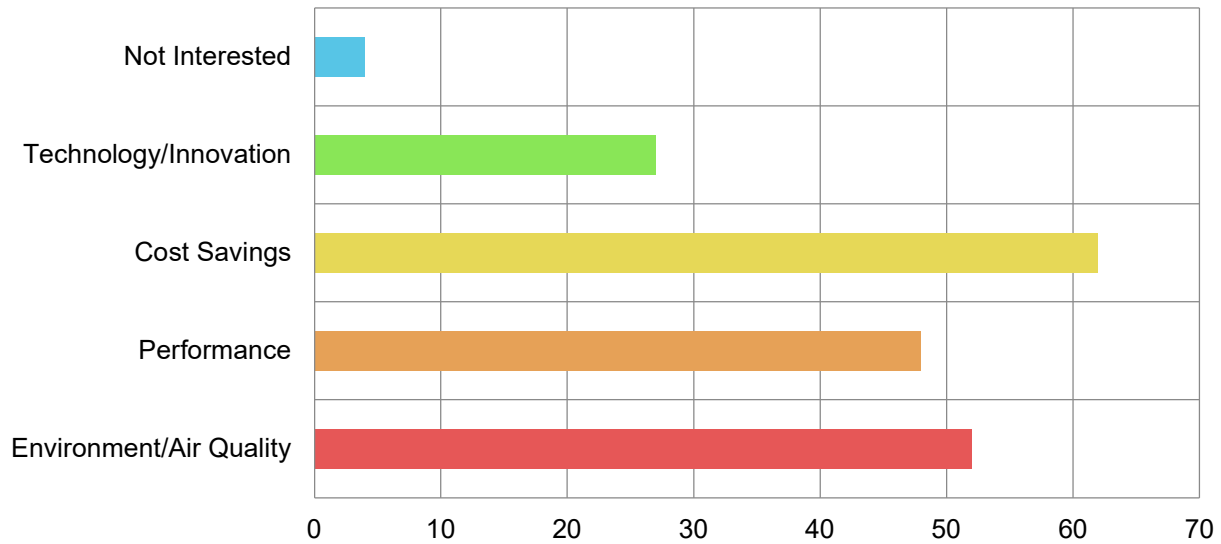
Survey 1:



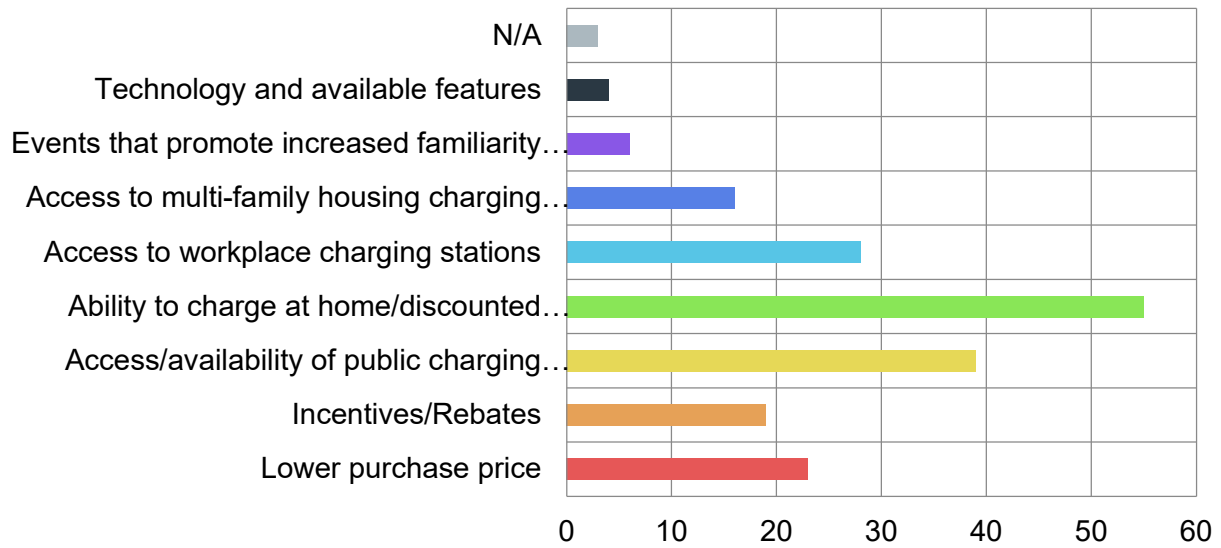
What are the main considerations impacting your decision to purchase or lease an electric vehicle?



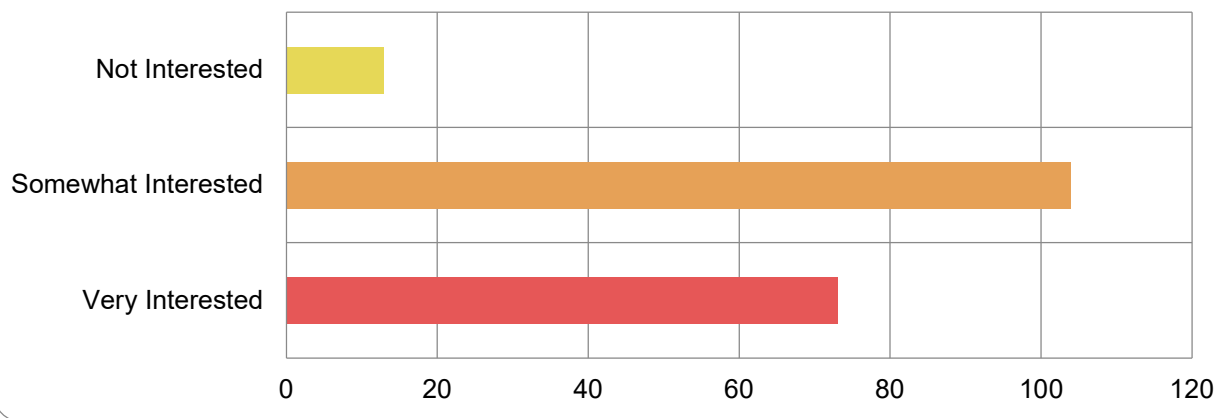
What are some of the primary motivators influencing your decision to purchase or lease an electric vehicle?



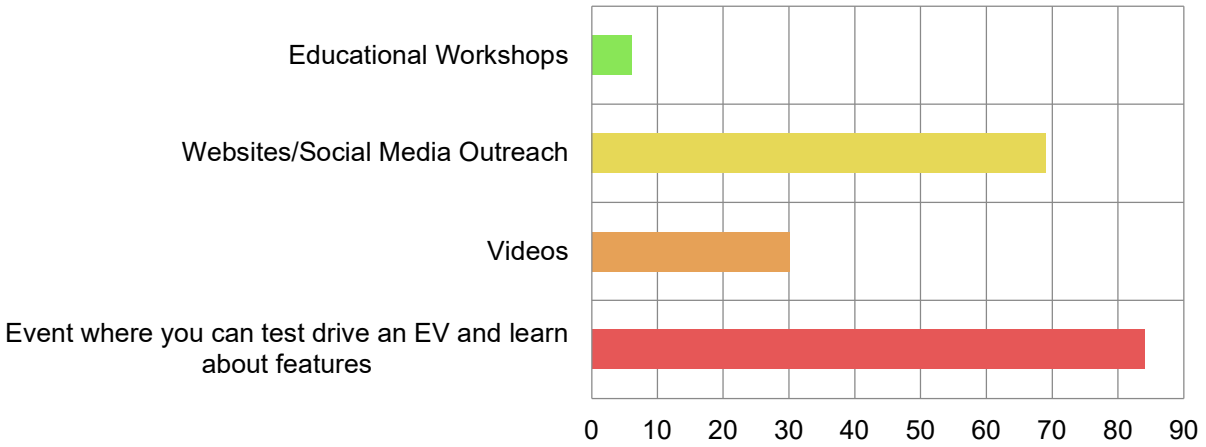
What would increase your interest in purchasing or leasing an electric vehicle?



Please rate your interest in receiving information/outreach related to electric vehicles.

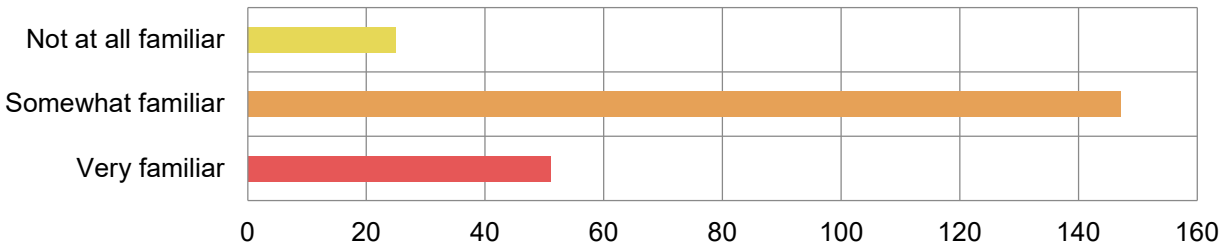


What outreach methods would you prefer?

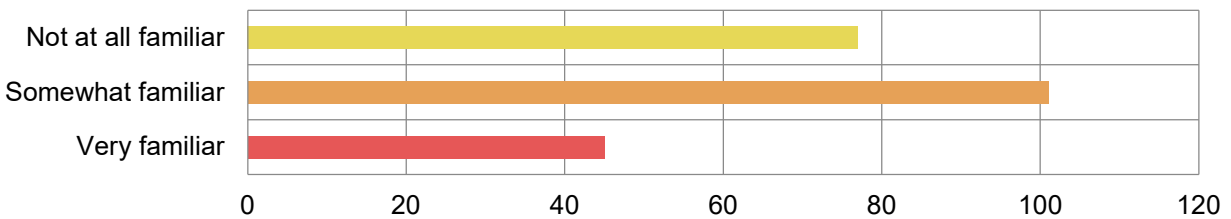


Survey 2:

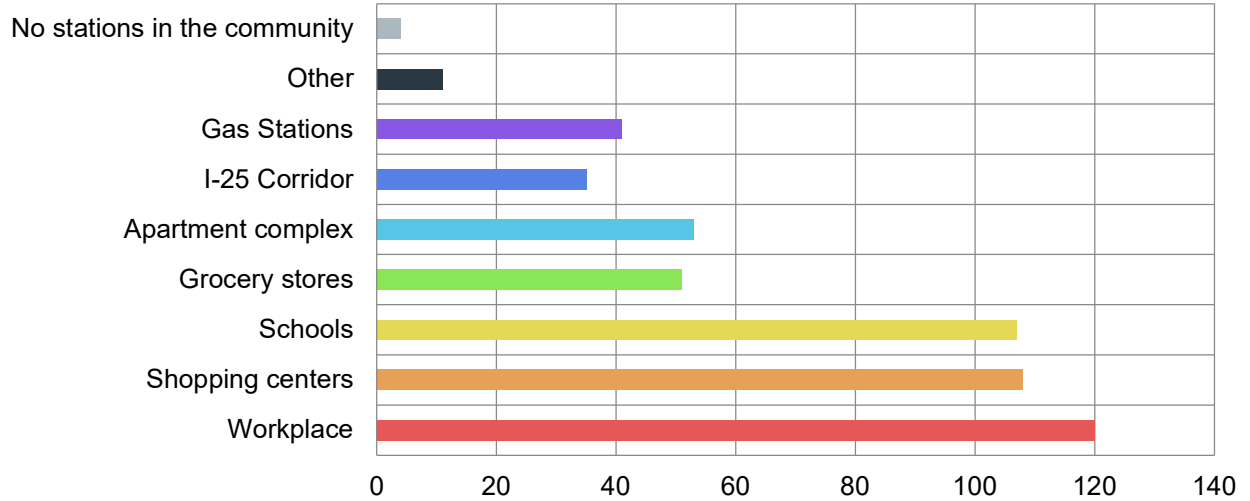
How familiar are you with EV charging?



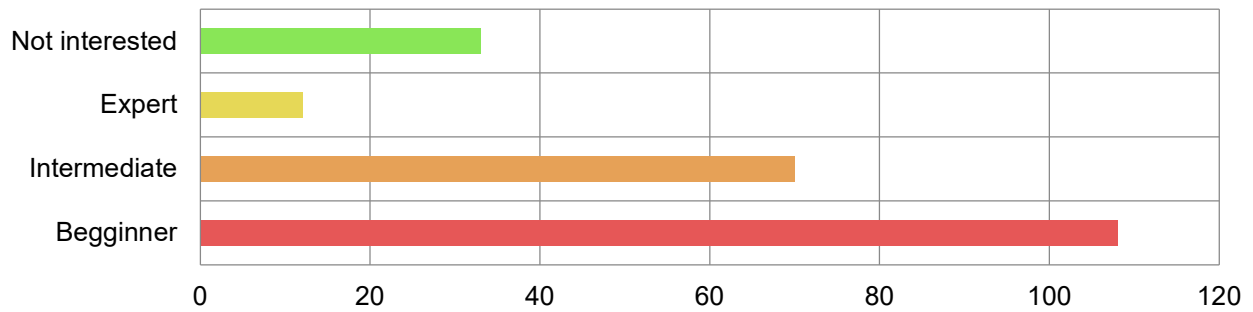
How familiar are you with charging stations in your community or along your commute?



Where would you like to see charging stations located in your community?



Please rate your familiarity with Federal, State, local, and utility EV policies/incentives/rebates.



APPENDIX C: AVAILABLE RESOURCES



The rapidly evolving fabric of electric vehicles (EVs) can make identifying resources challenging. In part, the short horizon of this EV action plan is to facilitate frequent updates as data and resources evolve to support EV adoption. Below is a list and description of resources available at the time this plan was developed. Links may break over time.

Xcel Energy Resources

In 2021, Xcel Energy's Transportation Electrification Plan (TEP) was approved by the Colorado Public Utilities Commission (PUC). The TEP includes many programs, services, and rebates intended to support communities and the State in their progress toward transportation electrification. Options include charging and vehicle incentives and rate programs for residents; and advising services, charging programs, incentives, and rate programs for businesses. To learn more, visit [xcelenergy.com/EV](https://www.xcelenergy.com/EV) for residential programs and <https://co.my.xcelenergy.com/s/business/ev/> for business programs.

Account Representative

The City's Xcel Energy account representative, [Kynn timer](#), can help the City navigate specific questions about rate structures as well as questions about how the new electrical loads might affect utility costs.

Federal Resources

Qualified Plug-In Electric Vehicle (PEV) Tax Credit

The Federal government offers an EV tax credit of up to \$7,500 and based on the vehicle's traction battery capacity and gross vehicle weight rating. Tax credits are administered through the Internal Revenue Service (IRS).

For more information, visit the IRS website: www.irs.gov/businesses/plug-in-electric-vehicle-credit-irc-30-and-irc-30d

Insurance Company Discounts

Insurance companies may offer discounts for EV owners. Check with your insurance provider for more information.

Federal Database of EV incentives

For other programs not included here, visit the U.S. Department of Energy's database of EV tax credits and other incentives, from across the country, that include federal programs, state laws and regulations, and utility/private incentives.

For more information visit: afdc.energy.gov/laws/search

State Resources

Colorado Plug-In Electric Vehicle (PEV) Tax Credit

The State of Colorado offers an EV tax credit at the point of sale. The rebate is \$2,000 through 2026.

For more information visit: www.colorado.gov/pacific/sites/default/files/Income69.pdf

Charge Ahead Colorado

Colorado Energy Office (CEO) and Regional Air Quality Council (RAQC) fund the Charge Ahead Colorado program that supports installing Level 2 and Level 3 public chargers based on various criteria and the ALT Fuels Colorado program that improves air quality, by incentivizing fleet vehicle upgrades. Public and private entities are encouraged to apply. An entity can apply multiple times as long as each application is for a new charging station. Charge Ahead Colorado can pay up to 80% of the charging station cost, up to \$6,000 for fleet chargers, up to \$9,000 for Level 2 multiport chargers, and up to \$30,000 for Level 3 multiport chargers. Funds may also be applied to EV procurement for organizations excluded from the State PEV Tax Credit but can only be applied to leased vehicles.

For more information visit: cleanairfleets.org/programs/charge-ahead-Colorado

Other Resources

Climate Mayors Electric Vehicle Purchasing Collaborative

The Collaborative represents unprecedented cooperation among Climate Mayors cities across the country to leverage collective buying power and accelerate the conversion of public fleets to EVs - sending a powerful signal to the global auto market and helping the United States maintain its commitment to the Paris Climate Agreement. The Collaborative offers a turnkey, one-stop, online procurement portal providing U.S. cities, counties, state governments, and public universities equal access to competitively-bid EVs and charging infrastructure, innovative financing options, and best practices and other forms of expertise.

For more information visit driveevfleets.org/

Drive Clean Colorado

Drive Clean Colorado (DCC), a Clean Cities Coalition, works with Denver metro area stakeholders including cities, businesses, and consumers, to support clean transportation and efficient mobility choices. The organization supports communities through education and outreach, providing connections to funding sources, supporting fleet electrification, and providing a local and regional network for sustainability leaders to share information and build connections that promote clean transportation.

For more information visit drivecleancolorado.org

APPENDIX D: ELECTRIC VEHICLES 101



Since electric vehicles (EVs) are an emerging technology that is rapidly changing, it is important to ensure that everyone has a common understanding of the technology and terminology involved. This section explains the basics of currently available types of vehicles and charging stations and their associated uses, barriers, and benefits. Note, while electric options are available for medium- and heavy-duty vehicles, the descriptions provided in this section apply primarily to light-duty vehicles, (which make up most of the EV market today).

EV Basics

EVs refer to any vehicle that uses an electric motor. An EV can have a fully electric motor or can contain an internal combustion engine (ICE) that supports the electric motor. The travel range of each type is outlined in Table 4 and described in more detail in the following sections.

Battery Electric Vehicle (BEV)

A BEV is an all-electric vehicle that does not require gasoline and thus has no tailpipe emissions. BEVs are fueled by plugging into charging stations. Energy is stored in the battery, to be used when the car is running. Distances a BEV can travel on a single charge range from 80 to 345 miles, with longer distances promised in the future through continual advancements in battery technology. Recharging can take between 30 minutes and 12 hours depending on the type of charger, size of battery, and level of depletion in the battery (Drive Change. Drive Electric., 2019).

Table 4: Comparison of Types of EVs

Electric Vehicle Type	Power Source	Travel Range
Battery Electric Vehicle (BEV)	Electric Motor	80 – 345 miles
Plug-in Hybrid Electric Vehicle (PHEV)	Electric Motor & Gasoline Engine	350 – 600 miles
Hybrid Electric Vehicle (HEV)	Electric Motor & Gasoline Engine	350 – 600 miles

Plug-In Hybrid Electric Vehicle (PHEV)

A PHEV provides a combination of both an electric motor and a gasoline engine and produces fewer tailpipe emissions than does a traditional ICE vehicle. PHEVs use energy from the electric motor until the battery charge is fully depleted, which can occur between 15 and 50 miles; at this point, the gasoline engine takes over. The distance a PHEV can travel on a single charge and a 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 traditional gasoline (at a station) (Drive Change. Drive Electric., 2019).

Hybrid Electric Vehicle (HEV)

Like PHEVs, HEVs have both an electric motor and a gasoline engine. In an HEV, the gasoline engine is used to power a generator which powers the electric motor. The benefit of this configuration is that the ICE can run at a constant speed and greatly increase the vehicle's fuel efficiency (compared to a traditional ICE vehicle). However, the battery cannot be charged by an external electricity source, which means the vehicle always relies on the gasoline engine.

Charging Stations

EV charging stations are separated into three categories, based on the speed at which the vehicle is charged: Level 1, 2, and 3. Level 3 chargers are also known as DC fast chargers. The sections below detail the appropriate application for each charger type.

Residential Charging Stations

Residents have two options for charging at home. Level 1 chargers use a standard 120-volt AC outlets and can take 8 to 12 hours to fully charge a depleted battery. Level 2 chargers require a 240-volt AC outlet and can fully charge a depleted battery in 4 to 6 hours. Residents can charge during off-peak hours to reduce the impact on the grid. Table 5 provides a brief explanation, along with the pros and cons of both types of residential chargers. All currently available EVs can use either charger type.

Table 5. Residential EV Charging Types

	LEVEL 1	LEVEL 2
Electric Current (AC)	120 volts; 20 amps	208/240 volt; 30 amps
Charging Time	8-12 hours	4-6 hours
Benefits	<ul style="list-style-type: none"> • Uses standard residential wall outlet • Little to no investment in infrastructure required 	<ul style="list-style-type: none"> • Quicker charging • Some models have available Wi-Fi controls to allow residents to take advantage of time-of-day electric rates • In the case of multifamily housing, the controls could be managed by a property manager.
Drawbacks	<ul style="list-style-type: none"> • Slower charging rate, but usually sufficient for residents who charge overnight 	<ul style="list-style-type: none"> • Requires 240 Volt outlet or hardwired charger • Electrician likely required for installation • Higher infrastructure investment cost
Estimated Costs	Low to no cost	\$500 to \$2,000 (U.S. DOE, 2019)

Commercial Charging Stations

Commercial Level 2 and Level 3 chargers are most appropriate for commercial applications since the EVs are generally parked for shorter periods of time than in residential applications. Level 2 chargers are the same as residential chargers and often have the option to include two charging ports at one station. Level 3, or DC fast chargers require an industrial DC outlet of 480 volts and can charge batteries in 20 to 30 minutes. Many commercial chargers also come equipped with software that allows the user to control when vehicles are charging and may facilitate payment in public applications. Table 6 shows the advantages and disadvantages of Level 2 and Level 3 chargers.

Table 6. Levels 2 and 3 Charging Infrastructure

	LEVEL 2	LEVEL 3 (DC Fast Charger)
Electric Current	208/240 volt; 30 amps (AC)	480 volts DC; <125 amps
Charging Rate (miles range per hour of charging)	10 to 25	Up to 180
Benefits	<ul style="list-style-type: none"> • More economical than Level 3 • Safe for long-term use 	<ul style="list-style-type: none"> • The fastest charging option available
Drawbacks	<ul style="list-style-type: none"> • Slower charging 	<ul style="list-style-type: none"> • Expensive to purchase and install • Can cause degradation to EV batteries with frequent use
Estimated Costs	\$500 to \$5,000 (U.S. DOE, 2019)	As high as \$50,000

Benefits of EVs

EVs offer both environmental and economic benefits. By replacing ICE vehicles with EVs, transportation-related GHG emissions are significantly reduced and air quality is improved. As the need for imported petroleum to support transportation is decreased through the integration of EVs, domestically available fuel sources can shift into focus, resulting in energy independence and domestically regulated fuel prices. Furthermore, the individual consumer will experience lower fuel and maintenance costs with the transition to EVs and through continued advancements in battery and charging technologies. The sections below provide additional details regarding the benefits of EVs.

Reduce GHG Emissions

EVs can significantly decrease GHG emissions associated with on-road transportation, which overtook electricity generation as the largest source of GHG emissions in the US in 2017 (EPA, 2019). The amount of emissions reduction depends on the electricity generation fuel mix of the local electricity grid. National trends suggest that electric utilities are improving the emissions from electricity generation at a faster rate than fuel economy is improving in ICE vehicles. EV charging can be paired with residential rooftop solar, commercial solar parking structures, and community solar to further reduce associated GHG emissions. Xcel Energy has goals to reduce carbon emissions 80% by 2030 and to be carbon free by 2050 (Xcel Energy, 2019). By transitioning to cleaner energy sources, Xcel Energy is supporting its customers in reaching their own community goals of achieving carbon neutrality.

Air Quality

Use of traditional ICE vehicles contribute to Ozone and fine particulate (PM_{2.5}) air pollutants, especially along heavily traveled routes. These pollutants have been linked to respiratory problems such as asthma, cardiopulmonary disease, and premature death for people with chronic exposure. These pollutants are significantly reduced in the case of HEVs and PHEVs, and eliminated entirely in BEVs. A study of the Houston area found that moderate to complete vehicle electrification would reduce Ozone by 1 to 4 parts per billion (ppb) and PM_{2.5} by 0.5 to 2 micrograms per cubic meter (µgm⁻³). This change was estimated to prevent 114 to 246 premature deaths annually, significantly reduce asthma exacerbation by 7,500 cases, and reduce school loss days by 5,500 (Pan, et al., 2019).

Energy Independence and Cost Stability

More than 65% of the petroleum imported to the US in 2018 was used for transportation fuel. Transitioning to EVs shifts the fuel source to more domestically available sources such as coal, nuclear, natural gas, and renewable energy. Integration of EVs is an important strategy for reducing dependence on fuel imports and it isolates transportation costs from the volatile petroleum market (Office of Energy Efficiency and Renewable Energy, 2018). Figure 14 illustrates the fluctuations in gasoline and diesel prices, compared to electricity prices, from 2000 to 2020.

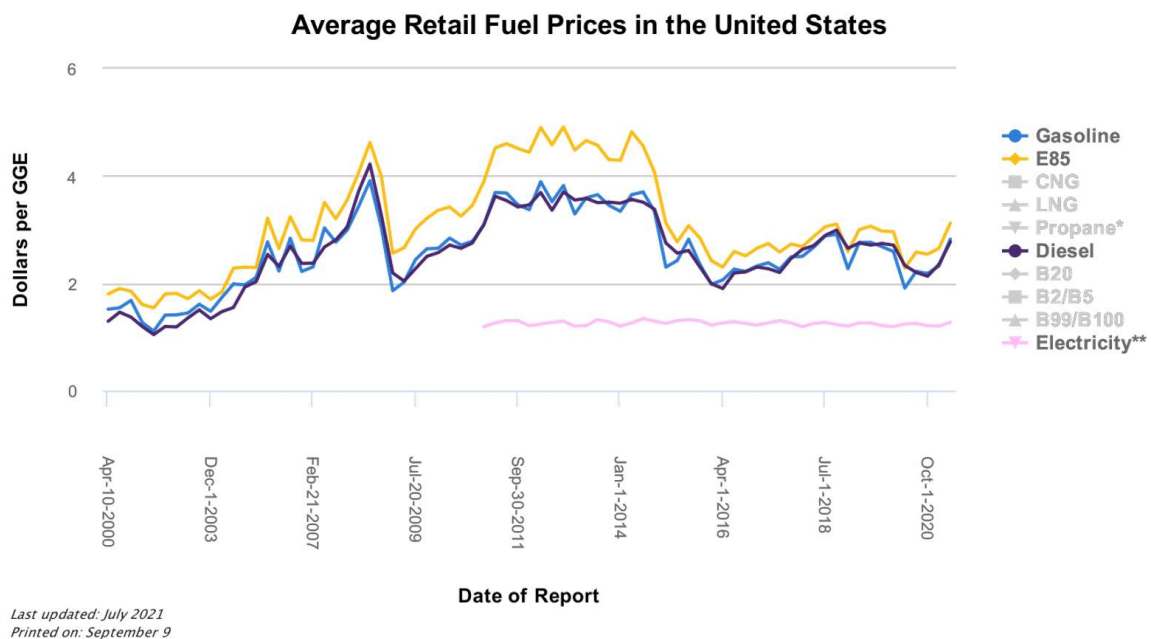
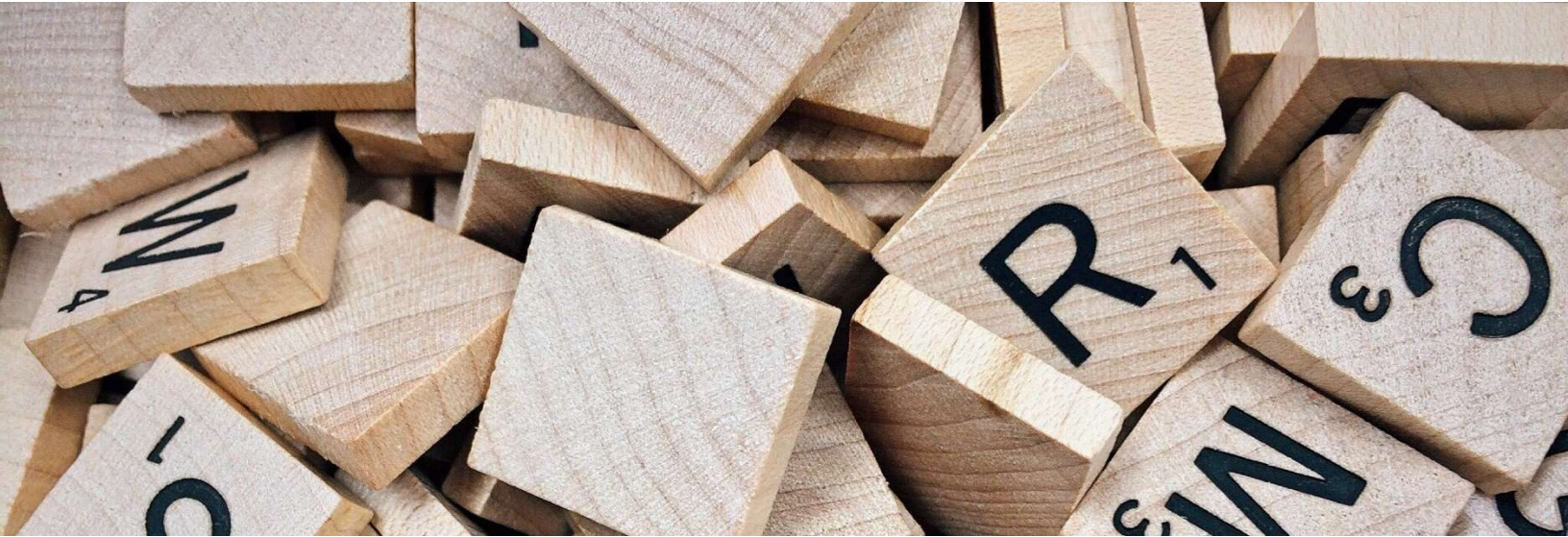


Figure 14. US Average Retail Fuel Prices (U.S. DOE, 2022)

Lower Fuel & Maintenance Costs

While cost savings vary based on vehicle type, driving patterns, and geographic region, the average driver spends about half as much money in fuel and maintenance costs by driving an EV compared to a traditional ICE vehicle (Office of Energy Efficiency and Renewable Energy, 2019). The average US household spends about 13% of their annual income on transportation costs, while low-income households spend an average of 29% of their annual income on transportation costs (Institute for Transportation And Development Policy, 2019). The transition to EVs would result in significant savings for the individual consumer.

APPENDIX E: GLOSSARY OF TERMS



Term	Definition
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.
Electricity consumption	Measured in kilowatt-hours (kWh) and represents the amount of electricity that has been consumed over a certain time period.
Electric demand	Measured in kilowatts (kW) and represents the rate at which electricity is consumed. Most commercial energy rates incorporate a charge for electric demand as well as electric consumption.
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, electrical supplies, etc.
EV-capable parking space	A parking space with electrical panel capacity, a dedicated branch circuit, and a continuous raceway to the parking spot.

Term	Definition
EV-ready parking space	Parking space with a junction box or 240-volt charging outlet connected to a conduit, and a raceway with sufficient electrical panel capacity.
EV-installed parking space	Parking space with an operating charging station installed.
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 8 to 12 hours to fully charge a depleted battery; 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 4 to 6 hours; can be used in both residential and commercial settings.
Level 3/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); 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.
Plug-in Hybrid Electric Vehicle (PHEV/PEV)	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 which point the gasoline engine takes over. Lower tailpipe emissions than traditional ICE vehicles 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.
Tailpipe emissions	Air pollutants released from the tailpipe of vehicles powered by internal combustion engines. Emissions include particulate matter, carbon monoxide, volatile organic compounds, and nitrous oxides. Nitrous oxides and volatile organic compounds are precursors to ground-level ozone formation.
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.

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

APPENDIX F: IMPLEMENTATION MEMORANDUM OF UNDERSTANDING

Memorandum of Understanding

Phase 2 – Plan Implementation

Rebecca Smith
City of Northglenn
11701 Community Center Drive
Northglenn, CO 80233

The intent of this Memorandum of Understanding is to recognize the achievement of the City of Northglenn (the City) in developing an Electric Vehicle (EV) Action Plan. Xcel Energy, through its Partners in Energy offering, has supported the development of this Electric Vehicle Action Plan. This document outlines how the City of Northglenn and Xcel Energy will continue to work together to implement this Electric Vehicle Action Plan. The term of this joint support, as defined in this document, will extend from May 1, 2022 through December 31, 2023.

Xcel Energy will support the City of Northglenn in achieving the goals of its Electric Vehicle Action Plan in the following ways:

Municipal Fleet Electrification

- **Develop vehicle replacement plans and budgets**
 - Support City participation in Xcel Energy Fleet Electrification Advisory Program
 - Support City with replacement plans and timing as necessary to support City's fleet goals.
 - Support potential City participation in the Xcel Energy Municipal Refuse Fleet Electrification Pilot Program.
 - Assist in the development of GoEV resolution for the municipal fleet based on the results of the Xcel Energy Fleet Electrification Advisory Program.
- **Develop fleet charging infrastructure implementation plan**
 - Coordinate potential City participation in Xcel Energy infrastructure programs.
- **Explore EV funding opportunities**
 - Research other funding options for charging infrastructure and connect the City to funding sources.
 - Connect the City to funding opportunities and support for pursuing funding.
 - Provide updates on available and relevant Xcel Energy EV programs.

Support funded by Xcel Energy for these strategies is not to exceed 30 hours. These hours will include those provided through our Partners in Energy team from Brendle Group and do not include support provided by Xcel Energy internal program staff.

Public Adoption

- **Develop a volunteer task force to promote and support EV adoption**
 - Support development of and communication about an EV task force.
 - Draft any necessary collateral for recruitment of task force.
 - Support facilitation of 2 task force meetings.
 - Support and develop resources and volunteer training materials for EV task force.
- **Conduct targeted community education campaign**
 - Coordinate with Independent Electrical Contractors Rocky Mountain Association to hold an EV action plan kickoff event.
 - Develop outreach plan and provide best practices.
 - Determine approach to incorporating the school district into outreach activities.
 - Define resources specific for multifamily residents.
 - Develop outreach collateral, including website content, spotlights, social media posts, trainings, and flyers.
 - Support community event outreach coordination, including development of marketing materials and tabling materials.
- **Organize at least 1 EV ride & drive event annually**
 - Incorporate annual ride & drive events in the outreach plan.
 - Coordinate introduction with Drive Clean Colorado to plan events.
 - Develop event promotional materials.
 - Support event planning and share best practices from other communities.
 - Coordinate with Xcel Energy to provide regional references and additional support.
- **Collaborate regionally to organize EV group buy(s) with auto dealers**
 - Research and share best practices from other communities around group buys.
 - Develop outreach collateral to promote group buys.
 - Provide community with regional resources and serve as a liaison with key community partners (e.g., Regional Air Quality Council, Adams County, Drive Clean Colorado, car dealerships, etc.)
 - Provide connections to Xcel Energy dealership outreach contacts

Support funded by Xcel Energy for these strategies is not to exceed 90 hours. These hours will include those provided through our Partners in Energy team from Brendle Group and do not include support provided by Xcel Energy internal program staff.

Public Charging

- **Conduct EV charging siting study and implement findings**
 - Lead mapping efforts of charging stations and determine additional siting options and other relevant data points.
 - Provide best practices for identifying potential charging station sites and prioritization criteria.
 - Facilitate any questions on public charging analysis and connect City with resources including funding and program specific opportunities.

- Support City’s application to Electric Vehicle Supply Infrastructure program and Charge Ahead Colorado grant, as needed
- **Conduct business outreach campaign**
 - Develop business outreach plan and share best practices from other communities.
 - Develop collateral and outreach plan for business fleets, including employee education and charging station education.
 - Develop outreach collateral, including website content, spotlights, social media posts, workshop materials, and flyers.
 - Develop materials to support outreach to property owners about potential charging stations, including talking points and flyers promoting benefits and funding resources.
 - Support targeted outreach through business walks, workshops, and focus group sessions.
 - Research potential funding sources for public and workplace charging stations.
 - Provide resources to build business cases for public and workplace charging stations, include guidance around charging levels and various cost structures.
- **Develop collaborative resource to support regional charging corridors and mobility hubs**
 - Facilitate questions on developing a regional partnership and provide City with available resources and connections.
 - Support identification of charging infrastructure needs across communities.
 - Coordinate and provide regional references and support.
 - Share other regional efforts and associated best practices.
- **Promote and evaluate innovative funding mechanisms for public charging**
 - Support exploration and communication of available funding resources.
 - Share available no- to low-cost programs and available incentives and rebates associated with installing charging infrastructure.
 - Research and share best practices of innovative funding mechanisms from other communities.

Multifamily Charging

- **Encourage property owners to install charging stations**
 - Develop outreach plan and associated materials including talking points and relevant collateral for multifamily property owners and managers.
 - Share benefits and requirements around EV infrastructure, funding opportunities and specific programs available for multifamily properties.
 - Coordinate participation in multifamily-specific Xcel Energy infrastructure programs.
- **Conduct public charging needs and siting assessment for multifamily**
 - Lead initial mapping efforts and highlight additional siting concerns in coordination with other mapping efforts.
 - Review Northglenn’s Bicycle and Pedestrian Master Plan and evaluate parks and other public spaces for key community hub locations.
 - Facilitate any questions on charging analysis and connect City with available resources.

- Coordinate support around assessing charging needs, requirements, electrical upgrades, and other project considerations.
- **Explore creative funding mechanisms for multifamily-specific needs and connecting properties to funding**
 - Define range of potential financial gaps for multifamily properties (total expected costs vs available funding).
 - Support exploration and outreach of available funding resources.
 - Share available no- to low-cost programs and available incentives and rebates associated with installing multifamily charging infrastructure.
 - Research and share best practices of innovative funding mechanisms from other communities.

Support funded by Xcel Energy for these strategies is not to exceed 90 hours. These hours will include those provided through our Partners in Energy team from Brendle Group and do not include support provided by Xcel Energy internal program staff.

EV Policy

- **Update and adopt policies to increase EV infrastructure and consistent EV practices**
 - Provide EV policy best practices from other communities.
 - Support the development of an EV siting guide.
 - Support content development, including developing website content, checklists, trainings, and flyers in support of new policy advances.
 - Present best practices and resource materials in support of a paid charging policy for municipal sites with public charging access.
 - Research potential development incentives.

Support funded by Xcel Energy for these strategies is not to exceed 35 hours. These hours will include those provided through our Partners in Energy team from Brendle Group and do not include support provided by Xcel Energy internal program staff.

Project Management and Reimbursed Expenses

- Move strategies forward as outlined in the Electric Vehicle Action Plan
 - Support strategy team organization, meetings, and communication
 - Support tracking and reporting progress to goals
- Serve as point of connection to Xcel Energy programs.
- Provide updated information to the City as new EV programs become available and adjust implementation approach and collateral appropriately.
- Facilitate regular check-in meetings, track and report energy impacts and activities, and help coordinate implementation kick-off activities

- Provide up to \$2,000 for reimbursed expenses related to printing and distribution of co-branded marketing materials, venue fees, food, and other related needs associated with outreach and education. Xcel Energy funding will not be provided for the purchase of alcohol

Support funded by Xcel Energy for project management is not to exceed 55 hours. These hours will include those provided through our Partners in Energy team from Brendle Group and do not include support provided by Xcel Energy internal program staff.

The City of Northglenn commits to supporting the Electric Vehicle Action Plan to the best of its ability by:

- Achieving the targets outlined in the electric vehicle action plan and shown in the table below:

City of Northglenn Electric Vehicle Action Plan Targets and Goal

Focus Area	Target	2020 Baseline
Municipal Fleet	Participate in Fleet Electrification Advisory Program	N/A
Public Adoption	Increase the number of registered electric vehicles in Northglenn to 4,200 by 2030, increasing from 48 in 2020.	48
Public Charging	Install 100 public charging stations in Northglenn by 2030	3
Multifamily Charging	Achieve installation of 20 charging stations located within ¼ mile for all multifamily properties by 2030	3
Policy	Achieve 5% EV-installed, 15% EV-ready, and 80% EV-capable (40%) development codes. (pending final code adoption)	N/A

- Performing the coordination, tracking, and outreach duties as outlined in the Electric Vehicle Action Plan that include but are not limited to the following:

Municipal Fleet Electrification

- **Develop vehicle replacement plans and budgets**
 - Participate in Xcel Energy Fleet Electrification Advisory Program and submit budget request for fleet replacements based on results.
 - Evaluate participation in Xcel Energy Municipal Refuse Fleet Electrification Pilot Program.
 - Develop GoEV resolution based on the results of the Xcel Energy Fleet Electrification Advisory Program. Lead adoption of resolution through City Council.
- **Develop fleet charging infrastructure implementation plan**
 - Evaluate participation in and submit application materials for Xcel Energy infrastructure programs.

- Pursue appropriate funding options or submit budget requests for new charging infrastructure.
- Develop training and guidance around charging policies and maintenance requirements.
- **Explore EV funding opportunities**
 - Explore potential funding opportunities and pursue those best suited for the City.
 -

Public Adoption

- **Develop a volunteer task force to promote and support EV adoption**
 - Identify existing groups, committees or community partners that could serve on a volunteer task force.
 - Determine and communicate group's requirements, roles, and responsibilities.
 - Recruit volunteer task force members, as needed.
 - Train task force and identify opportunities to incorporate task force support into outreach events and ongoing initiatives.
 - Identify opportunities for continued engagement and ongoing education for EV task force.
- **Conduct targeted community education campaign**
 - Support development and communication of outreach plan and associated collateral.
 - Distribute outreach collateral through appropriate communication channels.
 - Support the development of a website.
 - Host or attend community events and other outreach initiatives.
 - Support EV action plan kickoff event with Independent Electrical Contractors Rocky Mountain Association.
- **Organize at least 1 EV ride & drive event annually**
 - Identify locations to host annual ride & drive events.
 - Support development of event promotional materials.
 - Host annual ride & drive events.
 - Communicate City fleet electrification efforts to demonstrate effectiveness to businesses.
 - Coordinate event planning with Drive Clean Colorado and other partners.
- **Collaborate regionally to organize EV group buy(s) with auto dealers**
 - Support the development and distribution of outreach collateral to promote group buys.
 - Collaborate with key community partners to determine interest and develop group-buy (e.g., Regional Air Quality Council, Adams County, Drive Clean Colorado, car dealerships, etc.)
 - Support dealership outreach and event coordination.
 - Promote group-buy option to regional communities.

Public Charging

- **Conduct EV charging siting study and implement findings**

- Support mapping efforts of charging stations, provide additional data or mapping layers, and determine additional siting options and other relevant data points.
- Identify key businesses and community locations for targeted outreach.
- Identify key locations and desired level of charging for City-owned public sites.
- Apply for Xcel Energy Electric Vehicle Supply Infrastructure program and Charge Ahead Colorado grants, as needed.
- **Conduct business outreach campaign**
 - Support and distribute business outreach materials through Economic Development channels.
 - Inform collateral and outreach resources for businesses and multifamily residents.
 - Identify businesses and multifamily successes to spotlight in the community.
 - Conduct targeted business walks and workshops.
 - Host business related focus group sessions in collaboration with partners.
 - Communicate available funding and respond to questions from businesses around public and workplace charging.
- **Develop collaborative resource to support regional charging corridors and mobility hubs**
 - Establish contact and collaborate with potential regional partners.
 - Communicate baseline assessment of charging infrastructure needs across communities.
 - Leverage regional effort to install charging corridors and mobility hubs.
- **Promote and evaluate innovative funding mechanisms for public charging**
 - Share inventory of existing incentives.
 - Determine potential budget requirements around City provided incentives.
 - Share available no- to low-cost programs and available incentives and rebates associated with installing charging infrastructure.
 - Review best practices and recommendations to determine best fit for Northglenn.

Multifamily Charging

- **Encourage property owners to install charging stations**
 - Support outreach plan and distribute collateral for multifamily property owners and managers.
 - Identify correct contacts and contact methods for individual multifamily properties.
 - Share benefits and requirements around EV infrastructure, funding opportunities and specific programs available for multifamily properties.
 - Coordinate participation and support application process for multifamily-specific Xcel Energy infrastructure programs.
 - Request budget for new City staff position in support EV planning efforts.
- **Conduct public charging needs and siting assessment for multifamily**
 - Support mapping efforts and provide relevant resources.
 - Identify key locations for targeted outreach.
 - Respond to questions on charging analysis and connect with available resources.

- Coordinate support around assessing charging needs, requirements, electrical upgrades, and other project considerations.
- **Explore creative funding mechanisms for multifamily-specific needs and connecting properties to funding**
 - Coordinate outreach based on grant deadlines with Drive Clean Colorado, to utilize Recharge Coaches to receive assistance in completing grant and EVSI applications
 - Allocate potential new staffing resource to research grant program development and develop incentive programs
 - Develop City grant program framework
 - Communicate available no- to low-cost programs and available incentives and rebates associated with installing multifamily charging infrastructure.
 - Submit budget requests to support future incentives.

EV Policy

- **Update and adopt policies to increase EV infrastructure and consistent EV practices**
 - Evaluate EV-related policies based on recommended best practices from other communities.
 - Develop applicable policies for Northglenn and usher through adoption process.
 - Develop an EV siting guide.
 - Communicate collateral including website content, checklists, trainings, and flyers about policy changes.
 - Review, approve, and share resource materials around a paid charging policy developed for municipal sites with public charging access.
 - Evaluate potential development incentives.

Project Management

- Participate in coordination and tracking of scheduled check-ins, activities, and events.
- Provide Xcel Energy an opportunity to review marketing materials to assure accuracy when they incorporate the Xcel Energy logo or reference any of Xcel Energy’s products or services.
- Share the plan document, supporting work documents, and implementation results from the Electric Vehicle Action Plan with the public—the experience, successes, and lessons learned from this community will inform others looking at similar or expanded initiatives.
- Share progress on upcoming sustainability planning as it relates to activities outlined in the Electric Vehicle Action Plan.

Legal Applicability and Waiver

This is a voluntary agreement and not intended to be legally binding for either party. This Memorandum of Understanding has no impact, nor does it alter or modify any existing Franchise Agreement or other existing agreements between Xcel Energy and the City. Parties agree that this Memorandum of Understanding is to memorialize the intent of the Parties

regarding Partners in Energy but does not create a legal agreement between the Parties. It is agreed by the Parties that nothing in this Memorandum of Understanding will be deemed or construed as creating a joint venture, trust, partnership, or any other legal relationship among the Parties. This Memorandum of Understanding is for the benefit of the Parties and does not create third party rights. Nothing in this Memorandum of Understanding constitutes a waiver of the City ordinances, the City's regulatory jurisdiction, or Colorado's utility regulatory jurisdiction.

Single Points of Contact

All communications pertaining to this agreement shall be directed to Rebecca Smith, on behalf of the City of Northglenn, and Tami Gunderzik, on behalf of Xcel Energy.

Xcel Energy is excited about this opportunity to support the City of Northglenn in advancing its goals. The resources outlined above and provided through Partners in Energy are provided as a part of our commitment to the communities we serve and Xcel Energy's support transportation electrification as important resources to meet your future energy needs.

For the City of Northglenn:

Signature: _____

Name: _____

Title: _____

Date: _____

For Xcel Energy:

Signature: _____

Name: _____

Title: _____

Date: _____