Lakewood
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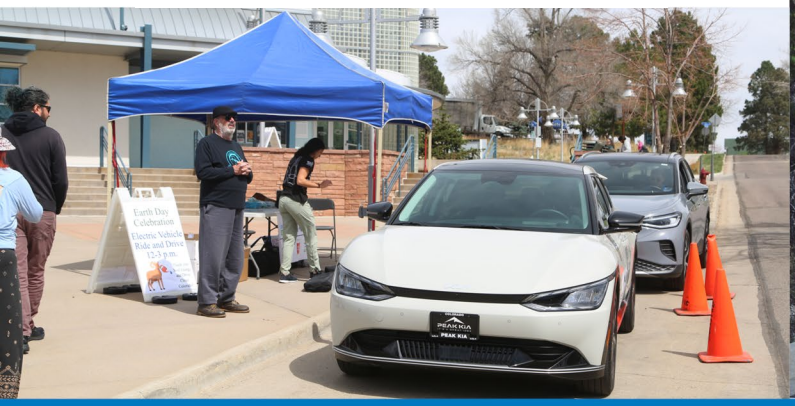
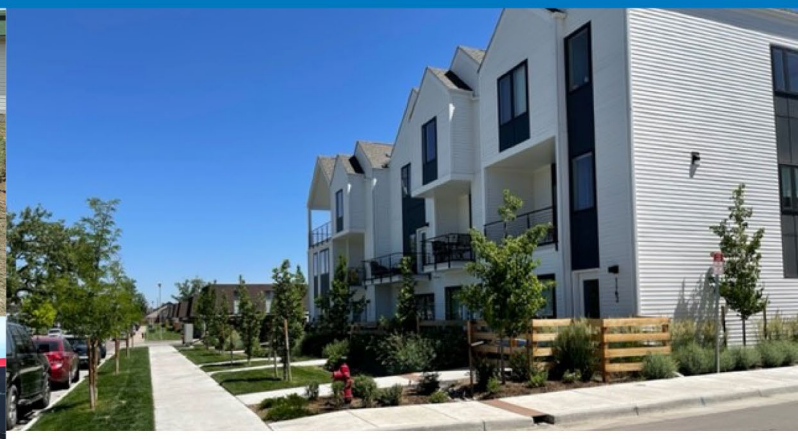


An Electric Vehicle Workplan for the City of Lakewood

March 2024



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ACKNOWLEDGEMENTS

This Electric Vehicle (EV) Workplan was developed by the following departments and organizations through a series of workshops hosted by Xcel Energy's Partners in Energy. For a full list of participants, see *Appendix D: EV Action Team Participants*.

EV Action Team
City Attorney
City Manager's Office
Community Resources Department
Economic Development Department
Human Resources Department
Finance Department
Information Technology Department
Planning Department
Police Department
Public Works Department
West Metro Fire
Xcel Energy

This workplan was funded by and developed in collaboration with Xcel Energy's Partners in Energy. Partners in Energy shall not be responsible for any content, analysis, or results if the City of Lakewood has made modifications to the workplan.

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Lakewood Electric Vehicle Action Plan

About this Electric Vehicle (EV) Workplan

This EV Workplan is a roadmap to guide City of Lakewood operations and policies in a manner that supports EV adoption. This document demonstrates how the City of Lakewood intends to support the community's transition to the EV future by leading by example.

Our Focus Areas

The City of Lakewood EV Workplan is divided into three focus areas with the following vision statements:

Fleet: The City of Lakewood will lead by example by prioritizing the electrification of its vehicle fleet when feasible, collaborating with peers to accelerate the adoption of emerging technologies.

Public Facility Charging: The City of Lakewood will provide public charging as an amenity to City facility users and to expand the public charging network, demonstrating its values of quality transportation options and community sustainability.

Plans, Policies, and Standards: The City of Lakewood will expand its efforts to prepare for the EV future by guiding development that supports equitable EV adoption and maintains a quality living environment.

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Our Strategies

The City identified three focus areas with a suite of strategies to support the City's fleet and community transition to an EV future

Focus Areas	Strategies
Fleet (F)	F-1: Assess potential fleet charging station locations
	F-2: Develop a process for procuring and maintaining charging stations
	F-3: Increase integration of EVs into the replacement plan
Public Facility Charging (PFC)	PFC-1: Identify ideal public charging station locations and conduct site assessments
	PFC-2: Develop charging station procurement guidelines and maintenance plans
	PFC-3: Develop pricing structure for public charging stations
	PFC-4: Provide education on public charging stations
Plans, Policies, and Standards (PPS)	PPS-1: Integrate EV goals and strategies into adopted community plans
	PPS-2: Develop an EV opportunity area map
	PPS-3: Update EV code requirements
	PPS-4: Promote EV resources to the community

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INTRODUCTION

The electric vehicle future presents remarkable opportunities and challenges. EVs hold great promise for reducing greenhouse gas (GHG) emissions and improving air quality in Lakewood by removing harmful tailpipe pollutants from gas- and diesel-powered vehicles. Additionally, it has never been more affordable to buy an EV in Colorado. State and utility incentives along with the Federal Inflation Reduction Act (IRA) are helping new EV owners significantly defray the cost of ownership.

While this report doesn't set specific EV adoption targets for the coming decade, it does acknowledge that the state-initiated goal of 940,000 light-duty EVs by 2030 necessitates adjustments in the realms of Lakewood's fleet adoption, public charging, and public policy (Gov. Jared Polis, 2019). For this transition to be equitable, additional resources will be necessary to overcome the barriers facing disproportionately impacted communities, such as the significant upfront cost of EVs and lack of access to home charging options.

What is an EV Workplan?

This EV workplan is a roadmap to strategically guide action by the City of Lakewood (City) in a manner that supports EV adoption. The EV strategies outlined in this plan were developed collaboratively with a stakeholder team, through two workshops and six focus groups (Figure 1) facilitated by Xcel Energy's Partners in Energy during October 2023 through February 2024. Since successful deployment of many EV strategies relies on collaboration between the City and Xcel Energy, representatives from both organizations were included. Partners in Energy also supports 18 months of plan implementation in the form of marketing and communications, data tracking and analysis, program expertise, and project management.

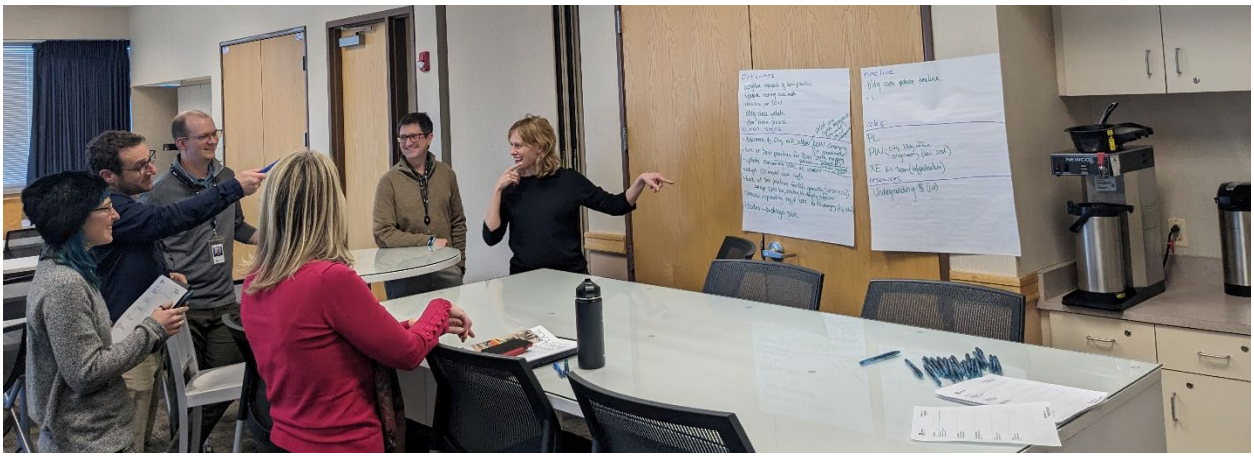


Figure 1: Focus Group Meeting

Why an EV Workplan?

The City developed the EV Workplan to align with its core values, advance its decarbonization goals, and prepare for the future needs of residents. There are several local, state, and federal government, as well as private sector goals and initiatives that inform this EV Workplan, as outlined in the following subsections.

Lakewood Values

Lakewood's Core Community Values include the following, several of which can be applied to the community's transportation system:

- Safe Community
- Open and Honest Communication
- Fiscal Responsibility
- Education and Information
- Quality Transportation Options
- Quality Economic Development
- Physical & Technological Infrastructure
- Quality Living Environment
- Community Sustainability

Lakewood 2025: Moving Forward Together

Lakewood's Comprehensive Plan includes goals and action steps that:

- Plan for future transportation infrastructure needs
- Ensure transportation equity
- Improve air quality and reduce GHG emissions from transportation
- Increase fuel efficiency and incorporate alternative fuel vehicles into the City fleet

City of Lakewood Sustainability Plan

According to the Sustainability Plan, the City set a goal to reduce community GHG emissions 20% below 2007 levels by 2025, and 50% by 2050 (City of Lakewood, 2015). More recently, the City established a science-based 2030 target of 60.7% emissions reduction below 2018 levels, emphasizing the need to reduce emissions at an accelerated pace. Since transportation comprises nearly a third of GHG emissions (Figure 2), transitioning away from fossil-fueled vehicles is a key component of achieving these goals.

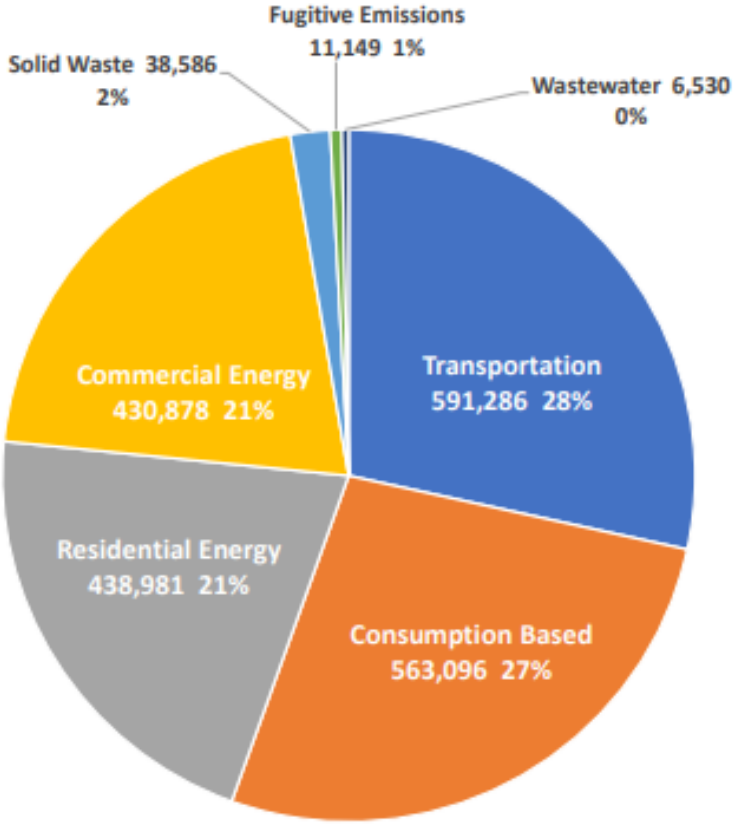


Figure 2: Lakewood's 2021 GHG Sector Emissions (MT CO2e)

The plan also includes a goal to minimize and reduce GHG emissions from City operations annually through 2025.

Related specifically to transportation, the plan establishes the following goals and objectives:

- Goal T1: Develop, maintain, and operate sustainable transportation systems and infrastructure
- Goal T2: Foster sustainable transportation choices in Lakewood
- Objective: Promote alternative fuel vehicles and fuel efficiency

The plan also sets a City fleet target to reduce petroleum-based fuel consumption by 10% by 2025, which is tracked on an annual basis as part of the Sustainability Plan annual reporting. As of the most current report (2021-2022), the City fleet's consumption is trending down, in alignment with the target (-6% change between 2010 and 2021).

Imagine Tomorrow

The City of Lakewood Community Resources Department Arts, Parks and Recreation Master Plan was adopted in 2023 and includes and implementation action to develop a plan for EV infrastructure that identifies opportunities for public charging stations at City parks and facilities.

Other Relevant Initiatives

Lakewood's efforts to accelerate EV adoption are influenced by other regional, state, and federal efforts as summarized in Table 1.

Table 1: Relevant EV Initiatives

Initiative	Description
Colorado EV Plan 2023	This statewide plan describes how Colorado will achieve its goal of 940,000 light-duty EVs on the road by 2030, and 100% zero emission vehicles on the road by 2050.
Colorado National EV Infrastructure Plan	This statewide plan is required for Colorado to receive $57 million of federal funds over five years to deploy EV chargers along highway corridors. Identified corridors include I-70, which passes through Lakewood.
Jefferson County EV Action Plan	This countywide plan includes strategies to achieve its goals of transitioning 10% of light-duty vehicles to EVs by 2026 and adding 1,000 charging stations throughout the county.
Xcel Energy EV Vision	Xcel Energy's transportation vision is to support the adoption of EVs, with a goal of enabling one out of five vehicles in its territory to be electric by 2030.
Federal Funding	Federal funding programs include a tax credit for new EVs and charging infrastructure and grants for heavy-duty vehicles and charging infrastructure.
State Funding	State funding programs include tax credits for new and used EVs; the Vehicle Exchange Program (VCX), which provides income-qualified EV rebates; and grants for charging stations.
Xcel Energy Programs	Xcel Energy funding programs include income-qualified EV rebates; charging programs for residential customers; and charging programs for commercial customers, including businesses, local governments, and multifamily properties.

Lakewood's EV Baseline

Across the country, the U.S. is seeking to have 50% of all new vehicle sales be EVs by 2030 (The White House, 2021). Overall, nearly 13% of new vehicle sales in Lakewood zip codes were EVs in 2023 (Figure 3) and as of September 2023, there were 4,665 EVs registered in Lakewood, representing 2% of all vehicles on the road (EValuate CO, 2023).

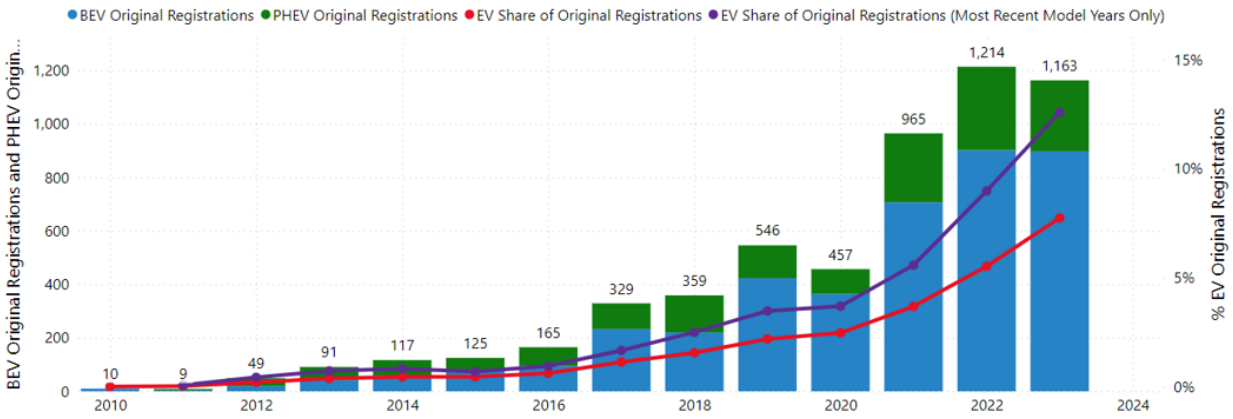


Figure 3: Battery Electric Vehicle (BEV) Original Registrations and Plug-In Hybrid Electric Vehicle Original Registrations (PHEV) in Lakewood Zip Codes

FOCUS AREAS

The City identified three focus areas with a suite of strategies to support the City's fleet and community transition to an EV future (Table 2). To maximize potential impact, the strategies identified actions within the City's direct control, as well as opportunities for regional collaboration. Each focus area describes existing efforts, provides a vision, and outlines strategies for achieving that vision. Note that short-term strategies are detailed in this section while longer-term strategies can be found in *Appendix B: Strategy Library*.

Table 2: Focus Areas and Strategies

Focus Area	Strategy
Fleet (F)	Strategy F-1: Assess potential fleet charging station locations
	Strategy F-2: Develop a process for procuring and maintaining charging stations
	Strategy F-3: Increase integration of EVs into the replacement plan
Public Facility Charging (PFC)	Strategy PFC-1: Identify ideal public charging station locations and conduct site assessments
	Strategy PFC-2: Develop charging station procurement guidelines and maintenance plans
	Strategy PFC-3: Develop pricing structure for public charging stations
	Strategy PFC-4: Provide education on public charging stations
Plans, Policies, and Standards (PPS)	Strategy PPS-1: Integrate EV goals and strategies into adopted community plans
	Strategy PPS-2: Develop an EV opportunity area map
	Strategy PPS-3: Update EV code requirements
	Strategy PPS-4: Promote EV resources to the community

Focus Area: Fleet

Vision Statement

The City of Lakewood will lead by example by prioritizing the electrification of its vehicle fleet when feasible, collaborating with peers to accelerate the adoption of emerging technologies.

Overview

The City's vehicle fleet serves a wide range of departments including Police, Community Resources, and Public Works. Currently 346 vehicles help City staff perform a variety of work tasks across Lakewood.

City fleet electrification can support improved air quality and lead to cost savings. EVs tend to have lower operational costs, which can translate to net savings over the lifetime of the vehicle. Operational savings are primarily associated with the lower cost of electricity (compared to gasoline or diesel) and reduced maintenance needs because EVs have fewer moving parts and less fluids. As mentioned in the introduction, multiple grants and other funding incentives exist, providing a unique opportunity to offset initial investments. Importantly for Lakewood leaders, fleet electrification is the opportunity to lead the community by example.

The City faces several barriers to fleet electrification. A limited supply of some EV models has required long lead-times for procurement making it difficult to find out-of-cycle replacements when a vehicle experiences an accident or other breakdown. Vehicle model limitations can make it difficult and expensive to upfit specialty vehicles such as Lakewood Rides paratransit, police patrol, and snowplow trucks. Additionally, rapid technology changes for EVs may require continual training and evolving equipment and maintenance considerations.

Existing Efforts

The City has started to integrate EVs into its vehicle replacement plan and currently has two EVs (Chevy Volts) and seven hybrid electric/gasoline vehicles. Leveraging hybrid technology continues to be a key strategy for City fleet electrification, especially when the supply chain or technology limits fully electric options.

As of early 2024, the City has five electric Chevy Silverados on order with one expected to arrive in the spring of 2024 and four anticipated to enter the City's fleet in late summer of 2024. When it comes to upfitting vehicles, there are several barriers and one of the biggest is the Silverado 1500 (currently on order by the City), which doesn't handle snowplow attachments. The Silverado 2500s, expected to be introduced in 2024, reportedly can handle plows. Additionally, upfitting must be done by an approved supplier to ensure important warranties are not voided.

The City is in the process of installing Level 2 charging ports in both the Police garage and Civic Center garage (6 ports in each garage) that will all be used for fleet vehicles. The insights from these charging stations can be used to make informed decisions on which charging stations the City selects to install at its public facilities for public use.

Strategies

Strategies for this area are listed below, along with the desired outcomes for each. Additional strategy details, including a timeline of action steps, roles, and resources, are outlined in *Appendix A: Strategy Details*.

Strategy F-1: Assess potential fleet charging station locations

Desired Outcomes

- Installation of fleet charging stations at the Civic Center and Police Department.
- Timeline for future charging station installations.

Strategy F-2: Develop a process for procuring and maintaining charging stations

Desired Outcomes

- Adopt procurement policy for charging station equipment.
- Primary contact(s) for station maintenance.
- Written procedures and signage on how to address maintenance issues.
- Decision matrix on leasing versus owning stations.

Strategy F-3: Increase integration of EVs into the replacement plan

Desired Outcomes

- Annual increase in the percentage of fleet vehicles that are electric per the replacement schedule.

Focus Area: Public Facility Charging

Vision Statement

The City of Lakewood will provide public charging as an amenity to City facility users and to expand the public charging network, demonstrating its values of quality transportation options and community sustainability.

Overview

The City of Lakewood is a leader in providing quality amenities to its residents and visitors through public facilities, including the Cultural Center, recreation centers, and parks. Offering EV charging at these facilities enhances this role and reduces the gaps in the public charging network.

In addition to identifying ideal charging locations at public facilities, this focus area is intended to guide decisions on pricing structures at charging stations, necessary charging infrastructure, funding and grant opportunities, user management/education, and employee charging policies.

Opportunities abound with the possibility for Lakewood to boost equitable access to EV charging in the City, use public chargers to layer in charging capacity for fleet vehicles, and gather and analyze user metrics to harvest future learnings.

Barriers to this work include staff capacity to monitor charging stations, ability to ensure security and prevent vandalism, costs to operate, capacity of the electric grid in some areas of the city, and the costs associated with retrofitting existing facility parking lots to include charging infrastructure.

Existing Efforts

Currently the City has two public charging ports in front of Lakewood Civic Center. Working with the station vendor on maintenance issues has been challenging, and these ports have been out of commission for much of 2023.

The number of public charging ports will increase in 2024 as the City plans to add a DC fast charging station in the same lot which will be owned and managed by Xcel Energy. Additionally, the City plans to add six Level 2 charging ports each at the Carmody, Whitlock, and Link Recreation Centers.

It is anticipated that all new public and fleet charging opportunities will be installed in coordination to maximize efficiencies related to maintenance and vendor coordination.

Strategies

Strategies for this area are listed below, along with the desired outcomes for each. Additional strategy details, including a timeline of action steps, roles, and resources are outlined in *Appendix A: Strategy Details*.

Strategy PFC-1: Identify ideal public charging station locations and conduct site assessments

Desired Outcomes

- Plan of City-owned EV charging station locations.

Strategy PFC-2: Develop charging station procurement guidelines and maintenance plans

Desired Outcomes

- Internal guidelines document for procuring charging station equipment.

Strategy PFC-3: Develop pricing structure for public charging stations

Desired Outcomes

- Pricing structure for public charging stations.
- Monitoring system to inform pricing structure updates.

Strategy PFC-4: Provide education on public charging stations

Desired Outcomes

- FAQs for City staff at public facilities.
- Public handout that explains how to use public chargers.
- Policy for staff use of City-owned charging stations.

Focus Area: Plans, Policies, and Standards

Vision Statement

The City of Lakewood will expand its efforts to prepare for the EV future by guiding development that supports equitable EV adoption and maintains a quality living environment.

Overview

Lakewood's plans, policies, and standards can support EV adoption that is equitable, supports a strong transportation system, and complements its community aesthetics.

These tools can accelerate EV charging – for example, by encouraging charging stations near multifamily properties that may not provide charging to their residents. However, they can also slow EV adoption if they don't reflect the current market conditions. For example, if codes do not properly define EV charging stations, they may be subject to requirements that don't match their use.

Existing Efforts

In 2018, Lakewood became one of the first communities in Colorado to set standards for new buildings to accommodate EVs. For new developments in Lakewood, the City's zoning code requires EV-installed or EV-capable spaces for up to 20% of parking spaces for certain commercial and multifamily uses (17.8.5). The zoning code also includes Sustainable Development Standards that incentivize developers to install additional charging stations beyond the code minimums (17.13.2). The zoning code is anticipated to be updated in 2025, following the Comprehensive Plan update process in 2024.

The City's building code currently has technical specifications for equipment and works in concert with the above zoning requirements (420.7). The building code also requires EV-readiness for single family homes.

Related City planning efforts are outlined in the *Lakewood 2025: Moving Forward Together* and *City of Lakewood Sustainability Plan* sections in this workplan's introduction. Both plans are currently being updated, which presents an opportunity for this workplan to help inform what EV components might be included during the community engagement process.

Strategies

Strategies for this area are listed below, along with the desired outcomes for each. Additional strategy details, including a timeline of action steps, roles, and resources are outlined in *Appendix A: Strategy Details*.

Strategy PPS-1: Integrate EV goals and strategies into adopted community plans

Desired Outcomes

- Incorporation of EV goals in the Comprehensive and Sustainability Plans.

Strategy PPS-2: Develop an EV opportunity area map

Desired Outcomes

- Map of EV opportunity areas.

Strategy PPS-3: Update EV code requirements

Desired Outcomes

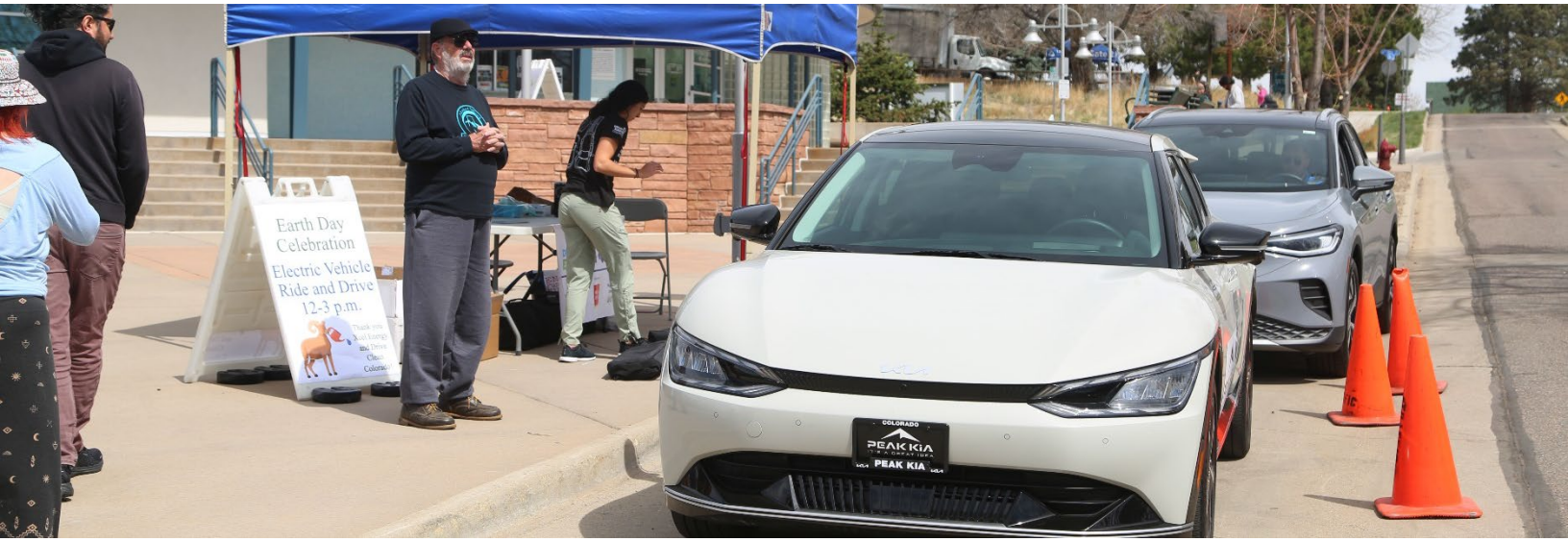
- Updated EV components in zoning code.
- Updated EV components in building code.
- Charging station design requirements.
- Development review process for charging stations.

Strategy PPS-4: Promote EV resources to the community

Desired Outcomes

- Outreach conducted to diverse audiences using City communication channels.

IMPLEMENTATION APPROACH



Implementation Structure

To ensure successful implementation of the workplan strategies or adjust course as necessary, the City of Lakewood will form an EV Project Management (PM) Team for the 18-month implementation period. The EV PM Team will meet monthly and include representatives from Public Works, Community Resources, and Planning Departments.

The EV PM Team will coordinate with other key departments listed in the “Roles and Responsibilities” sections of each strategy and summarized in Table 3 (see *Appendix A: Strategy Details* for specific roles).

Table 3: Summary of Roles by Department

Strategy	CAO	CMO	CR	FI	HR	IT	PD	PL	PW
Strategy F-1: Assess potential fleet charging station locations			✓			✓			✓
Strategy F-2: Develop a process for procuring and maintaining charging stations			✓	✓		✓			✓
Strategy F-3: Increase integration of EVs into the replacement plan		✓	✓				✓		✓
Strategy PFC-1: Identify ideal public charging station locations and conduct site assessments			✓			✓			✓
Strategy PFC-2: Develop charging station procurement guidelines and maintenance plans			✓						✓
Strategy PFC-3: Develop pricing structure for public charging stations	✓		✓	✓				✓	
Strategy PFC-4: Provide education on public charging stations		✓	✓		✓			✓	
Strategy PPS-1: Integrate EV goals and strategies into adopted community plans								✓	
Strategy PPS-2: Develop an EV opportunity area map		✓				✓		✓	
Strategy PPS-3: Update EV code requirements								✓	✓
Strategy PPS-4: Promote EV resources to the community		✓	✓					✓	

As part of the City of Lakewood's participation in Xcel Energy's Partners in Energy program, the City will receive 18-months of implementation support including project management, connection to other participating communities, and strategic implementation roles as outlined in the "Roles and Responsibilities" sections of each strategy. Xcel Energy's Clean Transportation Team will also support workplan implementation to ensure the City has access to the latest offerings.

Tracking Progress and Adjusting Course

To ensure this workplan remains on track, the EV PM Team will track strategy implementation according to the timeline summarized in Table 4 and adjust course as new opportunities or roadblocks arise. The Xcel Energy Partners in Energy EV Toolkit can be a helpful resource for identifying new strategies to address unexpected barriers.

Table 4: Strategy Implementation Timeline

Strategy	Q2 24	Q3 24	Q4 24	Q1 25	Q2 25	Q3 25
Strategy F-1: Assess potential fleet charging station locations	✓	✓	✓	✓		
Strategy F-2: Develop a process for procuring and maintaining charging stations		✓	✓	✓	✓	
Strategy F-3: Increase integration of EVs into the replacement plan	✓	✓	✓	✓		
Strategy PFC-1: Identify ideal public charging station locations and conduct site assessments		✓	✓	✓	✓	✓
Strategy PFC-2: Develop charging station procurement guidelines and maintenance plans		✓	✓			✓
Strategy PFC-3: Develop pricing structure for public charging stations	✓	✓	✓	✓		
Strategy PFC-4: Provide education on public charging stations			✓	✓	✓	✓
Strategy PPS-1: Integrate EV goals and strategies into adopted community plans	✓	✓	✓			
Strategy PPS-2: Develop an EV opportunity area map		✓	✓			
Strategy PPS-3: Update EV code requirements		✓	✓	✓	✓	✓
Strategy PPS-4: Promote EV resources to the community			✓	✓	✓	✓

Additionally, the EV PM Team will be tracking progress toward the desired workplan outcomes listed in Table 5. It will be important to let the wider community know how things are progressing and to recognize the achievements across City departments. At critical milestones, City staff will report updates on the progress to City leadership.

Table 5: Summary of Desired Outcomes by Strategy

Strategy	Desired outcomes
Strategy F-1: Assess potential fleet charging station locations	• Installation of fleet charging stations at the Civic Center and Police Department • Timeline for future charging station installations
Strategy F-2: Develop a process for procuring and maintaining charging stations	• Adopted procurement policy for charging station equipment • Primary contact(s) station maintenance • Written procedures and signage on how to address maintenance issues • Decision matrix on lease vs owning stations
Strategy F-3: Increase integration of EVs into the replacement plan	• Annual increase in the percentage of fleet vehicles that are electric per the replacement schedule
Strategy PFC-1: Identify ideal public charging station locations and conduct site assessments	• Plan of City-owned EV charging station locations
Strategy PFC-2: Develop charging station procurement guidelines and maintenance plans	• Internal guidelines document for procuring charging station equipment
Strategy PFC-3: Develop pricing structure for public charging stations	• Pricing structure for public charging stations • Monitoring system to inform pricing structure updates
Strategy PFC-4: Provide education on public charging stations	• FAQs for City staff at public facilities • Public handout that explains how to use public chargers • Policy for staff use of City-owned charging stations
Strategy PPS-1: Integrate EV goals and strategies into adopted community plans	• Incorporation of EV goals in the Comprehensive and Sustainability Plans
Strategy PPS-2: Develop an EV opportunity area map	• Map of EV opportunity areas
Strategy PPS-3: Update EV code requirements	• Updated EV components in zoning code • Updated EV components in building code • Charging station design requirements • Development review process for charging stations
Strategy PPS-4: Promote EV resources to the community	• Outreach conducted to diverse audiences using City communication channels

Beyond the Workplan Horizon

Looking beyond the workplan horizon of 2025, it is recommended that the City reassess the EV goals and successes achieved over the implementation period. Based on lessons learned over the 18-month implementation period, the City will leverage ideas documented in *Appendix B: Strategy Library* to ensure progress continues. Additional updates to this plan may be necessary as goals are achieved and new opportunities and technologies emerge.

APPENDIX A: STRATEGY DETAILS

This appendix includes implementation details for each proposed strategy, including a timeline of action steps, roles and responsibilities, and available resources.

Fleet Strategy Details

Strategy F-1: Assess potential fleet charging station locations

Desired Outcomes

- Installation of fleet charging stations at the Civic Center and Police Department.
- Timeline for future charging station installations.

Timeline of Action Steps

- Q2 2024
  - Continue efforts to install charging stations in the Civic Center and Police Department garages.
  - Create a list of all potential charging station locations organized by near-term (immediate needs) and long-term (future fleet EV expansion).
    - Near-term could include locations to support Public Works building inspector vehicles, Police investigator vehicles, Parks white trucks without plows, and Parks golf vehicles.
  - Determine where Lakewood Rides vehicles will park (see Strategy F-3).
  - Identify and pursue funding opportunities.
- Q3-Q4 2024
  - Initiate site assessments of all identified near-term locations.
- Q1 2025
  - Develop timeline of when each station is scheduled to be installed and integrate into facility master planning efforts.
  - Leverage lessons learned from fleet charging installations at the Civic Center and Police Department garages to inform future station installations, including timeline (e.g., “go date” to actual construction with Xcel Energy and installation of stations).

Roles and Responsibilities

- **Public Works - Fleet**: Coordinate with other departments to determine potential station locations; initiate site assessments; lead development of installation timeline; identify and pursue funding opportunities; and lead installation of stations.
- **Community Resources - Lakewood Rides:** Determine best locations for parking Lakewood Rides vehicles.
- **Community Resources - Planning and Construction:** Support site assessments; integrate into facility master planning; support installation of stations.
- **Information Technology:** Support site assessments.

- **Partners in Energy:** Support development of station location list and installation timeline; support identification of funding opportunities.
- **Xcel Energy Clean Transportation Team:** Support site assessments.

Resources

- Xcel Energy EV Supply Infrastructure program.
- CEO Fleet ZERO grant program.
- Federal IRA direct pay tax credit (§30W) for charging stations.

Strategy F-2: Develop a process for procuring and maintaining charging stations

Desired Outcomes

- Adopted procurement policy for charging station equipment.
- Primary contact(s) for station maintenance.
- Written procedures and signage on how to address maintenance issues.
- Decision matrix on leasing versus owning stations.

Timeline of Action Steps

- Q3 2024
  - Inventory incentives available for charging infrastructure.
  - Draft charging station procurement criteria, considering:
    - Smart charging capabilities.
    - Adapters to charge all EVs.
    - Management software that includes real time charging data and data privacy and security.
    - Backup power options.
    - Flexibility to adapt to new technology.
    - Common protocol across different vendors.
  - Document maintenance required by CEO Fleet-ZERO and Charge Ahead Colorado grant programs.
  - Identify one or two City Fleet staff contacts who will be responsible for coordinating with charging station maintenance vendor.
- Q4 2024-Q1 2025
  - Develop and adopt a procurement policy for charging station equipment that includes process for:
    - Equipment criteria.
    - Incentives.
    - Approval process (e.g., City Council).
  - Develop maintenance standards, including:
    - Contact for maintenance concerns for each fleet and City-owned charging station sites.
    - How issues are reported.
    - How maintenance concerns are identified and addressed.
    - Basic training to staff at each site.

        - Assessment of private entities and their ability to manage maintenance.
        - Signage with instructions for any maintenance issues.
- Q2 2025
    - Develop an internal guideline document based on maintenance committee findings and experience at existing City charging stations.
- See *Appendix B: Strategy Library* for additional, longer-term action steps for this strategy.

Roles and Responsibilities

- **Public Works - Fleet:** Lead procurement of charging stations; co-lead development of charging station criteria and maintenance standards; lead development of procurement policy.
- **Community Resources - Planning and Construction:** Co-lead development of charging station criteria and maintenance standards.
- **Finance:** Support development of procurement policy.
- **Information Technology:** Support development of charging station criteria.
- **Partners in Energy:** Lead inventory of incentives; support development of charging station criteria by providing examples.

Resources

- CEO Fleet ZERO grant program charging station procurement and maintenance requirements.
- US Department of Energy Charging Infrastructure Operation and Maintenance.
- Other federal, state, and local government EV charging procurement and maintenance resources.
- Drive Clean Colorado incentives and funding opportunities web page.

Strategy F-3: Increase integration of EVs into the replacement plan

Desired Outcomes

- Annual increase in the percentage of fleet vehicles that are electric per the replacement schedule.

Timeline of Action Steps

- Q2 2024
    - Continue developing maintenance approach for EVs (e.g., staff training vs. outsourced support).
    - Inventory incentives and financing options (e.g., leasing) available for EVs.

- Q3 2024
    - In coordination with *Strategy F-1: Assess potential fleet charging station locations,* explore opportunities to integrate additional EVs into replacement plan, such as:
        - Electric or hybrid paratransit bus/van for Lakewood Rides.
        - Additional electric lawn mowers (based on lawn mower purchased for 2024).
        - Electric light duty truck for Parks.
        - Electric vehicle for Police Investigations (considering printer, vehicle dock, radio, and secondary battery needs).
- Q4 2024
    - Develop a cost-benefit analysis process to evaluate the lifecycle financial and GHG emissions savings of EVs compared to gas-powered vehicles.
- Q1 2025
    - Update replacement standards to reflect EV realities (e.g., limited residual value due to technology changes and less maintenance may mean a longer vehicle lifespan before replacement).
    - Develop list of evaluation considerations for EV purchases, including:
        - Maintenance requirements.
        - Charging location/schedule.
        - Infrastructure impacts (e.g., heavier loads on roof parking lots).
        - Insurance impacts.

Roles and Responsibilities

- **Public Works - Fleet:** Lead update of replacement standards, EV purchase considerations, and maintenance approach.
- **City Manager's Office - Resource Development:** Support pursuit of incentives.
- **Community Resources - Parks:** Lead deployment for Parks EVs.
- **Police Department:** Lead deployment for Investigations EV.
- **Community Resources - Lakewood Rides:** Lead deployment for Lakewood Rides EV.
- **Community Resources - Planning & Construction:** Support infrastructure needs for new EVs.
- **Partners in Energy:** Lead incentive inventory and cost-benefit analysis process.

Resources

- CDPHE Clean Fleet Vehicle & Technology grant program.
- Federal IRA direct pay tax credit (§45W) for clean vehicles.
- King County bus fleet transition plan (includes paratransit).
- South Pasadena Police Department Electric Fleet Conversion.

Public Facility Charging Strategy Details

Strategy PFC-1: Identify ideal public charging station locations and conduct site assessments

Desired Outcomes

- Plan of City-owned EV charging station locations.

Timeline of Action Steps

- Q3 2024
  - Develop a map that includes:
    - Multifamily developments (existing and planned) with residents that might need public charging.
    - City assets.
    - Existing charging locations (including non-City-owned).
    - Identification of potential future City-owned charging stations.
- Q4 2024
  - Use maps to determine a preliminary list of desired sites for charging that remove equity barriers, address gaps, and respond to demand.
  - Study fleet learnings from new stations to inform future station installations.
  - Conduct site assessments with Xcel Energy at desired sites.
  - Identify and pursue funding opportunities.
- Q1 2025
  - Revisit list with Xcel Energy information to finalize cost estimations and refine list.
- Q2 2025
  - In alignment with Imagine Lakewood's identified action 5.5.2, develop a plan outline that summarizes desired sites and presents a phased approach to charging station deployment.
- Q3 2025
  - Present outline to City leadership.
- See *Appendix B: Strategy Library* for additional, longer-term action steps for this strategy.

Roles and Responsibilities

- **Community Resources - Planning and Construction:** Lead identification of potential charging locations; lead identification and pursuit of funding opportunities.
- **Public Works - Fleet:** Share learnings from fleet charging stations.
- **Information Technology:** Lead map development.
- **Xcel Energy:** Provide insight on electricity capacity and costs.
- **Partners in Energy:** Support map development and lead plan outline.

Resources

- Xcel Energy EV Supply Infrastructure Program.
- CEO Charge Ahead Colorado Grant Program.
- FHWA Charging and Fueling Infrastructure Discretionary Grant Program.

Strategy PFC-2: Develop charging station procurement guidelines and maintenance plans

Desired Outcomes

- Internal guidelines document for procuring charging station equipment.

Timeline of Action Steps

- Q3 2024
  - Align with *Strategy F-2: Develop a process for procuring and maintaining charging* stations action steps to develop procurement guidelines, as well as incorporating the following considerations:
    - Alignment with other City-owned charging stations (e.g., vendor, branding).
    - Confirmation of sufficient network/cell service at the site to provide a strong connection.
    - Inventory of available incentives and ability of vendor/equipment to align with grant or other incentive requirements).
    - Exploration of design considerations (e.g., public art, signage).
    - Research to understand typical charging level needs based on property use.
    - Process for surveying users to understand charging level need.
  - Align with *Strategy F-2: Develop a process for procuring and maintaining charging* stations action steps to develop maintenance approach.
- Q4 2024
  - Draft internal public charging procurement guidelines.
- Q3 2025
  - Set up time to reevaluate based on initial experience (Civic Center and Police Department garages).

Roles and Responsibilities

- **Community Resources:** Lead development of guidelines considerations.
- **Public Works Fleet:** Support alignment with fleet charging stations.
- **Partners in Energy:** Lead draft writing of guidelines and support coordination with Fleet focus area around procurement and maintenance.

Resources

- Other communities' procurement guidelines.
- Department of Energy: Charging Infrastructure Procurement and Installation Information.
- Electrification Coalition: Develop EV Procurement and Operation Policies.

Strategy PFC-3: Develop pricing structure for public charging stations

Desired Outcomes

- Pricing structure for public charging stations.
- Monitoring system to inform pricing structure updates.

Timeline of Action Steps

- Q2 2024
  - Research best practices and benchmark other public facility pricing structures.
- Q3 2024
  - Determine consistent pricing structure for all public facilities based on:
    - Research and benchmarks.
    - Revenue compared to costs (electricity rates), including the impacts of any solar installations on rates.
    - Pricing by energy use (kilowatt hour).
- Q4 2023
  - Present proposed pricing structure to City leadership.
  - Initiate development of new cost center.
- Q1 2025
  - Establish monitoring system to inform updates.

Roles and Responsibilities

- **Finance:** Lead cost center development.
- **Community Resources:** Lead pricing structure development.
- **Planning:** Support benchmarking of other communities and pricing structure development.
- **City Attorney's Office:** Review proposed pricing structure.
- **Partners in Energy:** Lead research of best practices and benchmarking of other communities.

Resources

- Examples from other communities (e.g. Boulder County and Jefferson County pricing surveys).
- EV Charging Minimum Standards Rule for federally funded EV chargers.

Strategy PFC-4: Provide education on public charging stations

Desired Outcomes

- FAQs for City staff at public facilities.
- Public handout that explains how to use public chargers.
- Policy for staff use of City-owned charging stations.

Timeline of Action Steps

- Q4 2024
  - Develop FAQ document for staff at frontline locations that answers common questions and explains who to contact with issues.
  - Develop an easy-to-use public handout with pictures that explain how to use public chargers; incorporate a laminated card into outside chargers.
- Q1 2025
  - Educate the public on the new charging stations along with other EV information (e.g., incentives)
    - Consider hosting ride-and-drives as part of public charging stations launches.
  - Begin gathering feedback on staff use of public charging stations to inform staff-use policy.
- Q2 2025
  - Develop a policy for staff use of city-owned charging stations.
- Q3 2025
  - Incorporate education of the staff use policy and on general station usage into employee onboarding.

Roles and Responsibilities

- **Human Resources:** Lead development of staff policy.
- **Community Resources - Marketing:** Lead development of public handout; co-lead public education.
- **Planning:** Co-lead public education.
- **City Manager's Office - Public Information Officers:** Co-lead public education.
- **Partners in Energy:** Support public education by supporting strategy development, drafting content, and providing examples from other communities.

Resources

- City outreach channels: Lakewood Together, social media, Channel 8.
- Neighboring communities' educational campaigns (e.g., Jefferson County).
- Drive Electric Colorado Ride-and-Drives.

Plans, Policies, and Standards Strategy Details

Strategy PPS-1: Integrate EV goals and strategies into adopted community plans

Desired Outcomes

- Incorporation of EV goals in the Comprehensive and Sustainability Plans.

Timeline of Action Steps

- Q2 2024
  - Research best practices and provide recommendations to Comprehensive and Sustainability Plan work groups.
  - Recommended goals could include the vision statements outlined in this plan.
  - Recommended metrics could include a few measurable and meaningful indicators; if targets are recommended, ensure they are able to be influenced by City programs and policy.
  - Recommend engagement prompts to be integrated into the planning processes, including understanding the barriers to driving an EV for those who currently do not drive an EV.
- Q3-Q4 2024
  - Support the development of any EV related components of the Comprehensive and Sustainability Plans.

Roles and Responsibilities

- **Planning:** Lead development of recommendations.
- **Partners in Energy:** Lead research of best practices and drafting of community engagement prompts.

Resources

- Other communities' plans.

Strategy PPS-2: Develop an EV opportunity area map

Desired Outcomes

- Map of EV opportunity areas.

Timeline of Action Steps

- Q3 2024
  - Develop a community engagement activity (e.g., interactive pinning map on Lakewood Together) to invite the public to identify areas in need of more chargers.
- Q4 2024
  - Based on engagement results and available data, develop a map that includes:
    - Existing stations
    - Equity layers (e.g., Colorado Energy Office Disproportionately Impacted Communities).

        - Existing multifamily properties.
        - Homes without garages (leveraging County Assessor data).
        - Land uses (e.g., commercial boundaries).
        - DRCOG transportation data.
    - Use the map to develop "EV opportunity areas" highlighting gaps in charging and available incentives.
    - Work with Xcel Energy to determine areas with capacity constraints.

Roles and Responsibilities

- **Information Technology - GIS Team:** Lead map development.
- **Planning:** Co-lead public engagement.
- **City Manager's Office - Public Information Officers:** Co-lead public engagement.
- **Partners in Energy:** Support development of map.
- **Xcel Energy Clean Transportation Team:** Support infrastructure capacity assessments.

Resources

- Other communities' maps (e.g., Northglenn map (click on "Innovative Examples") aimed at identifying potential spots for EV charging).
- Colorado Energy Office Disproportionately Impacted Communities.

Strategy PPS-3: Update EV code requirements

Desired Outcomes

- Updated EV components in zoning code.
- Updated EV components in building code.
- Charging station design requirements.
- Development review process for charging stations.

Timeline of Action Steps

- Q3-Q4 2024
    - Review best practices of ROW policies and determine if City will allow private and/or public ROW charging.
        - Consider piloting one, City-owned ROW license agreement to help inform this decision, leveraging Capital Improvement Project funding for undergrounding.
    - Look at best practices for EV zoning and building codes.
        - Consider both commercial and residential uses.
        - Explore codes that address challenges for low- and moderate-income households and multifamily properties.
        - Consider expanding required uses for EV charging (e.g. retail).
        - Explore potential traffic impacts related to additional charging stations.
- Q1 2025

    - Provide recommended language for upcoming zoning code (anticipated 2025) and building code updates.
        - Create new definition for charging stations.
        - Include Colorado model code requirements.
- Q2-Q3 2025
    - Draft updated engineering standards based on code updates.
    - Develop design standards based on code updates.
        - Review best practices for design standards.
        - Develop standards for multifamily residential and commercial.
        - Develop standards for charging hubs and charging stations as accessory uses.
        - Include considerations related to aesthetics, safety (lighting), signage/advertising, and accessibility.
    - Establish a development review process for charging stations.
        - Confirm Xcel Energy review of design when referred out (e.g., capacity).
        - Review permitting system to enable efficient EV charging station permit processing.
- Consider creating streamlined permitting tied to "EV opportunity areas" developed in
        - Strategy PPS-2: Develop an EV opportunity area map
        - Explore opportunities to streamline review of City-owned charging stations.
        - Clarify process for how to review new stations added to existing development.

Roles and Responsibilities

- **Planning:** Lead zoning code update recommendations; support building code update recommendations; lead development of design standards and development review process.
- **Public Works - Engineering:** Support zoning code update recommendations; lead development of engineering standards update; support development review process.
- **Public Works - Building:** Lead building code update recommendations.
- **Partners in Energy:** Lead best practice research.

Resources

- Public Works Capital Improvement Project undergrounding fund.
- CEO Charge Ahead Colorado Grant Program charging station design requirements.
- State of Colorado Model Electric Ready and Solar Ready Code (including new multifamily requirements beginning March 1, 2024).

- Other communities' codes (e.g., Jefferson County code updates identified in their EV Action Plan).

Strategy PPS-4: Promote EV resources to the community

Desired Outcomes

- Outreach conducted to diverse audiences using City communication channels.

Timeline of Action Steps

- Q4 2024
  - Create tracker for EV news and updates from sources like Xcel Energy and Drive Clean CO, including financial incentives, especially for income-qualified households.
- Q1 2025
  - Create outreach plan that includes:
    - Earth Day content.
    - Communitywide outreach via newsletter and Looking@Lakewood.
    - Business outreach via newsletter and business associations.
    - Outreach to real estate management companies.
    - Workplace outreach.
    - Developer outreach.
    - Outreach targeted to property owners along corridors.
- Q2-Q3 2025
  - Implement outreach plan.

Roles and Responsibilities

- **Planning - Sustainability:** Co-lead public outreach.
- **Community Resources - Marketing:** Co-lead public outreach.
- **City Manager's Office - Public Information Officers:** Co-lead public outreach.
- **Partners in Energy:** Lead outreach plan development; support public outreach by providing content.

Resources

- Xcel Energy residential EV website.
- State of Colorado EV CO campaign.
- Drive Clean Colorado Watts@Work initiative.
- State of Colorado EV CO campaign.
- City communication channels (e.g., Looking@Lakewood, newsletters).
- Neighboring communities' education campaigns (e.g., Jefferson County).

APPENDIX B: STRATEGY LIBRARY

During the planning phase, the EV Action Team decided which strategies to pursue during the short-term implementation phase (2024-2025), and which belonged in the long-term implementation phase (2025-2030).

This list of long-term strategies will help guide future efforts over the long haul.

Focus Area: Fleet

- Continue *Strategy F-2: Develop a process for procuring and maintaining charging* stations with the following action items:
    - Revisit procurement policy before end of 5-year contract with initial charging station vendors to inform RFP for new charging station vendors using lessons learned.
    - After 5-year maintenance warranty required by CEO, evaluate whether maintenance should be moved in-house or remain contracted out:
        - Benchmark other state/local government maintenance practices.
        - Create decision matrix on lease vs owning stations
- Develop charging stations standards for users.
- Create charging plans for each vehicle.
- Provide hands-on employee training for EVs (e.g., driving tips, safety, charging) (ongoing).
- Conduct community outreach about the benefits of fleet EVs.

Focus Area: Public Charging

- Continue *Strategy PFC-1: Identify ideal public charging station locations and conduct site assessments* with the following action item:
    - Write plan for City-owned EV charging station locations, leveraging learnings from fleet and recreation center stations.
- Establish public charging station user policies (e.g., length of stay, enforcement).
- Explore partnerships for public charging stations (e.g., businesses).
- Evaluate and mitigate risk of public charging stations.

Focus Area: Policy

- Develop station maintenance standards depending on use type.
- Explore enforcement mechanisms for charging stations to be maintained.
- Develop incentive program for properties to install charging.
- Support development of charging hubs.

APPENDIX C: GLOSSARY OF TERMS

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

Cost Center: A financial structure within the organization to which costs can be allocated.

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

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

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

Electric Vehicle Opportunity Area: An area that is suitable for additional charging infrastructure to support the adoption of EVs.

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

Fleet Electrification: Replacing gas- or diesel-powered vehicles with equivalent electric vehicles in a public or business fleet.

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

Grid Decarbonization: The current planned reduction in the carbon intensity of electricity provided by electric utilities through the addition of low- or no-carbon energy sources to the electricity grid.

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.

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.

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

Metric Tons of Carbon Dioxide Equivalent (MTCO2e): A unit of measure for greenhouse gas emissions. The unit "CO2e" represents an amount of a greenhouse gas whose atmospheric impact has been standardized to that of one unit mass of carbon dioxide (CO2), based on the global warming potential (GWP) of the gas.

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

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.

APPENDIX D: EV ACTION TEAM PARTICIPANTS

The following individuals contributed time and expertise to develop this EV Workplan.

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