GREAT PLAINS INSTITUTE

Municipal Fleet Electrification Playbook

Acknowledgements

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Definitions

The following definitions are sourced from the Great Plains Institute's Electric Vehicle Glossary and Drive Electric Minnesota.

Electric vehicle (EV): A vehicle that is at least partially powered by one or more electric motors using electricity stored in rechargeable batteries.

Battery electric vehicle (BEV): An electric vehicle that operates entirely on electricity stored in its onboard battery pack. BEVs do not have an internal combustion engine and produce zero tailpipe emissions.

Plug-in hybrid electric vehicle (PHEV): A type of hybrid EV that combines an internal combustion engine with an electric motor and a rechargeable battery. PHEVs can operate in all-electric mode for a certain range before switching to the combustion engine or hybrid mode.

Zero-emission vehicle (ZEV): A vehicle that produces no tailpipe emissions of pollutants during operation. Emissions may still occur in other phases of the vehicle's lifecycle. Examples include BEVs and hydrogen fuel cell vehicles.

Charging Levels

Level 1 charging: Charging a vehicle at "Level 1" means plugging into a standard 120-volt outlet (a typical household electrical outlet).

Level 2 charging: Charging a vehicle at "Level 2" means plugging into a 240-volt outlet (the same kind that powers appliances like dryers). On average, Level 2 stations provide 10 to 50 miles of range per hour the vehicle is connected.

Direct current fast charger (also DC fast charger, DCFC, or Level 3 charger): A high-speed public charger for EVs designed to significantly reduce the time it takes to replenish an EV's battery. While fast charging is convenient for quickly adding range, it can lead to faster battery degradation over time compared to using Level 1 and 2 chargers.

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Introduction

This is one of four playbooks intended to help local governments advance through their transportation electrification journey, providing step-by-step guidance on supporting EV adoption and expanding public charging infrastructure.

This playbook focuses on municipal fleet electrification efforts that a community can undertake. Other playbook topics include:

- Planning for EVs
- Engaging with utilities on EVs
- Expanding EV charging infrastructure

Each state may have unique contexts to consider when implementing the actions outlined in this playbook. We recommend reviewing your state's rules and regulations before pursuing the suggested actions. You can reach out to the Great Plains Institute for assistance. In many cases, we can assist your organization at no cost.

Playbook Structure

Actions within this playbook are organized into the following sections:

Start Here: Actions within this section are suitable for communities beginning their electrification journey and can typically be accomplished with minimal capacity and resources. These actions are often the first steps that lay the foundation for subsequent actions.

Ramping Up: These actions include more advanced steps that communities can take to facilitate EV adoption and expand charging infrastructure. They may require more time and resources.

Full Speed Ahead: These actions represent advanced tasks that communities should consider after a solid foundation has been laid, and the community is prepared to advance to cutting-edge transportation electrification efforts.

The playbook also provides real-world **community examples** of implementation and success, **cost considerations**, action-specific **resources and assistance**, as well as additional implementation considerations such as **staff time** required, **department roles**, **county roles**, and **partners**. Furthermore, implementation considerations are categorized using the

notations **minimal, moderate, and significant** to indicate the amount of time, effort, or resources that may be expended to complete the action.

Degree of difficulty	 Amount of time, effort, or resources to complete an action, categorized as minimal (yellow), moderate (orange), or significant (red).
Staff time	The amount of staff time a community should plan to spend completing an action, along with key factors that may influence required staff time.
Departments involved	The city departments that may be involved in completing an action.
County role	Potential options for counties to support local governments on an action, or ways in which the county may directly address the action.
Partners	Potential partners that may support local governments or be involved in an action.

Playbook Purpose

While this playbook takes a broad view of the various strategies local governments can pursue to support transportation electrification within their own municipal fleets, it is not intended to be comprehensive.

The strategies highlighted in this playbook are actions identified as particularly useful, those that would benefit from additional expert guidance, and those with the highest impact on emissions reduction. Other topics, like engaging and educating the public on sustainable transportation, are not the focus of this resource. Other free resources are available on these topics from programs like Charging Smart.

WHY FOCUS ON TRANSPORTATION ELECTRIFICATION?

The transportation sector is one of the leading sources of emissions at the national level and contributes more direct emissions than any other sector.[1] Emissions from transportation have a direct negative impact on public health, the climate, and the economy, making the

[1] "Sources of Greenhouse Gas Emissions," Environmental Protection Agency, last updated March 31, 2025.

decarbonization of the transportation sector an increasingly high priority for many communities.

Addressing the environmental impact of the transportation sector will require multiple solutions working together. One such strategy that communities are increasingly pursuing is transportation electrification. More specifically, local governments are increasingly taking action to facilitate and support the transition from gas-powered cars to EVs. Reflecting this growing trend, many communities have expressed interest in tools and resources to better understand the actions they can take to facilitate this transition.

While a mass transition to EVs on its own won't fully mitigate the transportation sector's environmental impact, it is a necessary step and one that can benefit communities in a variety of ways in both the short and long term. As electrified transportation becomes more prevalent and accessible, transitioning to EVs can rapidly reduce emissions.

EVs can produce as little as zero tailpipe emissions, and despite being resource-intensive to manufacture, over their useful lifespan, EVs emit approximately 110 grams of carbon dioxide (CO_2) per mile driven compared to 410 grams per mile for new internal combustion engine cars.[2] EVs have the highest potential to reduce emissions when the electricity powering them is generated from renewable sources. However, recent research suggests that EVs still produce significantly less CO_2 than traditional vehicles, even when the electricity is generated by fossil fuels.[3]

Emission reductions provide public health benefits by improving air quality and reducing noise pollution. Increased transportation electrification also provides opportunities for economic development by creating new jobs related to EVs and attracting EV-driving visitors to communities and businesses that have invested in charging infrastructure. It is increasingly feasible to realize these and other benefits in your community as new EV models become cost-competitive with traditional vehicles.

CHARGING SMART

Much of the content and information within this playbook is adapted from the technical assistance and designation program Charging Smart, of which the Great Plains Institute is a lead partner. Charging Smart is a program funded by

[2] River James, "Carbon Footprint Face-Off: A Full Picture of EVs vs. Gas Cars," Recurrent Auto, January 20, 2025.

[3] Emmy Curtis, Gabrielle Olson, M. Moaz Uddin, "Lifecycle Emissions Study: EVs vs. Conventional Vehicles," Great Plains Institute, April 28, 2025.

the US Department of Energy's Vehicle Technologies Office (VTO) that offers free technical assistance to local governments, giving them the tools to facilitate and accelerate transportation electrification in a way that ensures its benefits are accessible to all. Participants work toward achieving Bronze, Silver, or Gold designation—with each subsequent designation level signifying increasingly advanced actions. Achieving a Charging Smart designation demonstrates that a community has taken steps to become EV-friendly by addressing planning, zoning, permitting, and coordinating with the local utility. This playbook contains callout boxes—designated by the hexagonal EV charger icon—that indicate how certain actions can support Charging Smart designation. Send an email to info_communities@gpisd.net for more information on Charging Smart and details on how to participate.

Municipal Fleet Electrification

1.1 Start Here: Conduct a fleet analysis

An initial fleet analysis is required for Silver designation, while a comprehensive fleet analysis is required for Gold designation within Charging Smart.

Completing a fleet analysis can help municipalities better understand the unique needs of their fleet vehicles and identify opportunities for electrification that will have the greatest impact on emissions reductions and cost savings.

Consider assessing factors such as make and model of vehicles, annual miles traveled, and vehicle age. The list below outlines various levels of fleet analysis that communities can undertake, based on their municipal fleet size and desired outcomes.

1. **Cursory level.** For communities with a handful of fleet vehicles, a full-blown fleet analysis might not be necessary. Instead, a brief, cursory review of municipal fleet vehicles and their driving habits may be sufficient. A study of completed municipal fleet analyses found that high-mileage vehicles, vehicles that make many short trips, and vehicles with high idle time are good candidates for electrification. These can be good guiding principles for starting to consider electrification.
2. **Initial analysis.** For a more formalized but low-lift analysis, the Electrification Coalition's Dashboard for Rapid Vehicle Electrification (DRVE) tool is a great option for communities. The DRVE tool can be downloaded for free from the Electrification

Coalition's website and only requires users to input vehicle VIN numbers, annual mileage, and years of service. The DRVE User Guide provides a comprehensive walkthrough of the tool and additional resources.

3. **Comprehensive analysis.** A comprehensive fleet analysis evaluates options for electrifying municipal fleet vehicles, considers the charging needs for the electrified fleet, and plans for future EV purchases. Additionally, a comprehensive analysis may assess additional factors such as use cases, duty cycles, route lengths, average vehicle miles traveled, and/or parking locations. Some communities choose to engage a third party to complete the comprehensive analysis, while others use tools like DRVE and supplement the findings with other analysis tools like the Atlas Public Policy EV Hub's Fleet Procurement Analysis Tool.
4. **Right-sizing.** Right-sizing—or consolidating fleets to eliminate unnecessary vehicles—can be a cost-saving measure while also supporting sustainability goals. When completing any of the above fleet analyses, consider how the municipal fleet may be right-sized. Geotab's "How to rightsize your fleet in five simple steps" is a helpful resource.

COMMUNITY EXAMPLES

City of Dayton, Ohio: Dayton worked with a third party to conduct a fleet analysis of its light-duty vehicles to explore the possibilities and benefits of switching portions of its fleet to electric vehicles. The city focused on cost savings, identifying a significant potential for cost savings by replacing 100 percent of its light-duty fleet by 2040.

City of Mequon, Wisconsin: The city issued a request for proposals to undertake a fleet analysis.

Milwaukee County, Wisconsin: In partnership with Wisconsin Clean Cities and the Wisconsin Office of Energy Innovation, the county completed a fleet analysis of its passenger vehicles, squad cars, and passenger and cargo vans.

RESOURCES + ASSISTANCE

Dashboard for Rapid Vehicle Electrification (DRVE) tool: This tool, developed by the Electrification Coalition, analyzes light-, medium-, and heavy-duty fleet vehicles by evaluating the total cost of ownership. It asks users to input three data points for each vehicle in their fleet: vehicle identification number, annual mileage, and years of use.

METRICS AND DATA

When preparing to undergo a fleet analysis, data and metrics that may be necessary to gather include the following:

- Number of fleet vehicles categorized by light-, medium-, and heavy-duty
- Vehicle identification numbers for each vehicle
- Annual miles driven for each vehicle
- Age of each vehicle

Fleet analyses can help municipalities understand the following metrics:

- Potential cost savings from fleet electrification
- Potential emission reductions of fleet electrification
- Ideal timing for replacing combustion vehicles with electric vehicles

ADDITIONAL IMPLEMENTATION CONSIDERATIONS

Degree of difficulty	 Minimal to Moderate
Staff time	The staff time required and barrier to implementation will largely depend on the city's level of fleet analysis as well as the size and makeup of the fleet.
Departments involved	Fleet manager or department heads who manage fleet vehicles, police department.
County role	Counties can conduct assessments of their own fleet vehicles or help cities and towns take this action.
Partners	Your local Clean Cities Coalition chapter, Electrification Coalition, electric utilities, third party vendors.

1.2 Start Here: Give fleet operators the opportunity to test-drive EVs

Provide municipal staff, especially those who manage and/or operate fleet vehicles, with opportunities to learn about EVs and charging infrastructure, including the chance to test-drive EVs. Education paired with hands-on experiences can build internal support and dispel

any misgivings municipal staff have about vehicle electrification. Providing this opportunity could be achieved in a variety of ways:

- Hosting a community-wide ride and drive where municipal staff and fleet operators are invited to participate.
- Hosting a test-drive event specifically for municipal staff and/or fleet operators.
- Hosting a ride and drive event in collaboration with neighboring local governments, the county, or other regional groups for all involved entities' staff and fleet operators.
- Asking the local electric utility or local dealership to give a demonstration to municipal staff and fleet operators about electric vehicles.
- Taking a field trip to a neighboring municipality to talk with its staff and/or fleet operators about their electric vehicles.

Invite your utility providers to co-host the event, showcase their EVs (if applicable), or have a table at your event where they provide information about available EV programs and rebates.

COMMUNITY EXAMPLES

City of Faribault, Minnesota: After Faribault purchased two EVs for its Community and Economic Development Department, the city held a ride and drive event to familiarize staff with the vehicles. The positive experience staff had at the event has led other departments to consider replacing fleet vehicles with EVs.

Dane County, Wisconsin: The county has held two events for municipal fleet managers to experience and learn more about EVs and other fuel alternatives. One event, called Mechanics Talk Shop, allowed the county and the City of Madison's fleet personnel to learn more about each other's electrification experiences, and mechanics conferred about maintenance of EVs.

Southeast Michigan Council of Governments (SEMCOG): SEMCOG held a large event, called Plug Into EV Fleet Expo Ride & Drive, featuring EVs commonly used in community fleets. Attendees included representatives from local school districts, community colleges, local government staff, fleet managers, and others.

RESOURCES + ASSISTANCE

EV fact sheets: Under the heading Fact Sheets and Guides, Veloz developed helpful one-pagers that could be used as a handout at events or provided to staff to begin learning more about EVs and charging infrastructure. The fact sheets cover topics like general EV information, total cost of ownership, and the benefits of EVs during emergencies.

Ride and Drive Toolkit: This toolkit from Drive Electric Minnesota outlines the steps for hosting a ride and drive event in your community, including a step-by-step checklist, resources to hand out, logistics sheets, and a social media guide to promote the event.

ADDITIONAL IMPLEMENTATION CONSIDERATIONS

Degree of difficulty	 Moderate to Significant
Staff time	The staff time required for implementation will depend on the type of event a community hosts. A community-wide ride and drive will require significantly more staff time, preparation, and coordination than a test drive specifically for fleet operators.
Departments involved	Fleet manager, communications, sustainability, public works.
County role	Counties can provide opportunities for county fleet managers and operators to test-drive EVs and act as coordinators or facilitators for multi-community test-drive events.
Partners	EV owner groups (often organized on Facebook), community organizations, local dealerships, your local Clean Cities Coalition chapter, chambers of commerce, local universities or colleges, neighboring communities, electric utilities, county, metropolitan planning organizations, regional planning commissions.

2.1 Ramping Up: Develop an EV preference policy for municipal fleets

Adopting a formal policy prioritizing the purchase of electric vehicles for the municipal fleet can simultaneously reduce greenhouse gas (GHG) emissions of the local transportation sector and signal to private sector entities and residents your community's commitment to electrification.

These policies can officially establish a preference for procuring EVs or other low-to-zero-emission vehicles when expanding the municipal fleet or replacing fleet vehicles—with exceptions permitted when it is determined that there are no electric options that meet specific needs.

Conducting a fleet analysis can help a community better understand its unique fleet needs and is a critical step in developing an EV preference policy. Additionally, local governments and their staff charged with carrying out the policy may benefit from creating an implementation plan and/or training for how to implement it.

COMMUNITY EXAMPLES

City of Ferndale, Michigan: Ferndale adopted a fleet management policy giving purchasing preference to plug-in electric vehicles when they meet vehicle requirements. Otherwise, the city prioritizes other types of low emissions vehicles.

City of Middleton, Wisconsin: In 2025, the City of Middleton adopted a Sustainable Procurement Policy and Implementation Plan. In a webinar recording, city representatives provide an in-depth look at the process for creating the policy and plan.

Community highlight

"It shall be city policy that purchasing decisions reflect [the city's] goal, and … the purchase of low- and zero-emission vehicles shall be prioritized to the greatest extent practicable. The city will lead by example . . . which will encourage individuals, businesses and other levels of government to do the same."

Excerpt from City of Milwaukee EV Preference Policy

City of Milwaukee, Wisconsin: In 2023, the City of Milwaukee passed an ordinance that established an EV or zero-emissions vehicle preference policy when it procures fleet vehicles.

RESOURCES + ASSISTANCE

Developing a "Green Fleet" Policy: The North Carolina Clean Energy Technology Center provides guidance, templates, and benefits for creating a green fleet policy.

Model Green Fleet Policy template: This template, developed by the Clean Air Partnership, provides various options for developing your own green fleet policy.

ADDITIONAL IMPLEMENTATION CONSIDERATIONS

Degree of difficulty	Minimal to Moderate
Staff time	Modeling a preference policy based on existing similar policies can reduce the staff time required.
Departments involved	Fleet manager, department heads, sustainability.
County role	Counties can adopt a preference policy for county fleets and encourage cities and towns to do the same by providing a model policy or template.
Partners	Your local Clean Cities Coalition chapter, Electrification Coalition, peer communities with existing EV preference policies.

2.2 Ramping Up: Electrify at least one light-duty vehicle

Purchasing at least one light-duty EV fleet vehicle would satisfy one of the Gold designation requirements within Charging Smart.

When replacing or expanding municipal fleets, communities can prioritize electric vehicles whenever feasible. Light-duty vehicles, including compact cars, SUVs, and pickup trucks, are a good place to start. While municipal light-duty fleet vehicles are usually purchased directly from a vendor or dealership, leasing from a dealership is an alternative option.

Before purchasing or leasing an EV, consider how and where the vehicle will be charged. This flowchart, developed by Drive Electric Minnesota, can help determine the best charger type to install for a specific use case. Installing charging infrastructure can have long lead times, so be mindful to account for this in your plans.

A light-duty EV purchase can be funded through the following:

- The municipality's budget and capital improvement plan allocations, just as a conventional vehicle would be budgeted for.
- State and federal rebates and incentives, as applicable.

- Bulk or cooperative purchasing opportunities, like the state procurement lists, Drive EV Fleets, or other options.
- Electric utility rebates, incentives, or programs.

Fleets for the Future's *Guide to Financing Alternative Fuel Vehicle Procurement* (starting on page 4, with a summary table on pages 14–15) has a more in-depth breakdown of funding options. When budgeting, include considerations for charging infrastructure needs for electric fleet vehicles.

COMMUNITY EXAMPLES

City of Gahanna, Ohio: Gahanna used federal energy credits to purchase its first electric vehicle in 2025 for the city's Fleet Maintenance Division.

City of Green Bay, Wisconsin: Green Bay aims to reduce fleet emissions by 15 percent by 2030. To achieve this goal, the city purchased two EVs for the police department. As noted in an article published in the *Green Bay Press Gazette*, the chief of police found purchasing and outfitting the two EVs comparable in price to the conventional gas vehicle models that were previously used by the department.

City of Racine, Wisconsin: In its *Ten-Year Capital Improvement Plan*, the city accounted for EVs, charging infrastructure, and other electric equipment. The easiest way to navigate to these references is to press Control-F and search the document for instances of the word "electric."

Dane County, Wisconsin: The county's goal to be carbon neutral in its facility, fleet, and land operations by 2030 has spurred the transition to electric light-duty fleet vehicles. In 2024, Public Works and Land and Water Resources bought six new EVs to join the seven EVs purchased in 2023. Among other methods, the county utilized EV tax credits to offset the cost of the vehicles. Kathy Kuntz, director of the Office of Energy and Climate Change, did an interview with public works staff to help demystify the process for other counties or communities looking to make the transition themselves.

RESOURCES + ASSISTANCE

AFLEET tool: Argonne National Laboratory's tool that estimates GHG emissions and cost of ownership for light-, medium-, and heavy-duty vehicles.

Drive EV Fleets: A cooperative purchasing initiative, organized by Sourcewell and the Electrification Coalition, that accelerates transitioning fleets to electric vehicles via reduced costs for buying EVs and their charging infrastructure.

EVInfoList: A spreadsheet maintained by Shift2Electric with a list of EVs currently on the market, paired with specifications like base cost, range, charging speed, and performance.

Finding Best Options to Electrify Your Fleet: Drive Electric Minnesota's web page hosts resources to support fleet electrification. Topics and resources covered include vehicle selection guides, information discussing the benefits of purchasing vs leasing fleet vehicles, and best practices for fleet vehicles once they've been transitioned.

Fleet Procurement Analysis Tool: Atlas Public Policy developed this tool to inform users about various procurement ownership structures, vehicle types, and scenarios for light-, medium-, and heavy-duty fleet vehicles.

Fuel Savings Calculator: A calculator developed by the Great Plains Institute that allows users to calculate the average fuel savings of switching to electric.

PlugStar: This resource, developed by Plug In America, is a platform that helps users find available EV models. Users can either search a catalog of vehicles or use the shopping assistant to filter by the municipality's needs.

COST

Kelley Blue Book states the average price of a new EV is approximately $56,000, but lower-priced EVs like the Nissan Leaf start at around $29,000. EVs are increasingly cost-competitive with gas-powered vehicles. Other ways to reduce costs include participating in cooperative purchasing, such as Drive EV Fleets, and utilizing rebates or incentives provided by utilities or other entities.

ADDITIONAL IMPLEMENTATION CONSIDERATIONS

Degree of difficulty	 Moderate to Significant
Staff time	Time considerations include researching vehicle options, procuring vehicles, and coordinating with internal departments.
Departments involved	Fleet manager, department heads, finance.
County role	Counties can purchase EVs for county fleets and support municipalities by providing educational opportunities and facilitating group buys.
Partners	Dealerships, electric utilities, peer municipalities that have electrified fleet vehicles.

2.3 Ramping Up: Conduct an analysis of fleet charging needs

Alongside the initial fleet analysis, which focuses on fleet vehicles, consider conducting a comprehensive analysis of fleet charging needs. Charging needs analyses help inform budgetary requirements for installing charging infrastructure and fleet electrification.

In the *How Cities and Counties Can Electrify Their Fleets* report, RMI advises planning now for both current charging needs and future charging infrastructure expansion to support an expanding electric fleet. Planning for existing and future needs can reduce long-term costs and future-proof municipal facilities, ensuring grid capacity and infrastructure needs are met.

When completing the needs analysis, consider the following factors:

- Where will the electric fleet vehicles be charged? Is it at one location or multiple?
- How many fleet vehicles will be charged at each location?
- For each vehicle, determine the following:
    - What time(s) of day do they need to be charged, and how fast do they need to be charged? This flowchart, developed by Drive Electric Minnesota, can help determine which charger is needed to fit a particular vehicle's needs.
    - What is the route and route length of the vehicle?
    - What is the vehicle's duty cycle?

COMMUNITY EXAMPLES

ComEd, Illinois: This utility, which serves municipalities in the Chicago region, offers a free fleet electrification assessment, which includes a charging needs assessment as well as an analysis of potential vehicles, funding, and costs. ComEd has worked with the County of DuPage, the cities of Chicago, Highland Park, and Rolling Meadows, as well as the villages of Park Forest and River Forest, to complete this assessment.

City of San Luis Obispo, California: This city's *Fleet Electrification Charging Infrastructure Report* is very in-depth and comprehensive. While this level of detail is not necessary in many cases, it does give good insight into the factors a community may want to analyze when completing a fleet charging needs assessment.

RESOURCES + ASSISTANCE

How-To Guide: Electric Vehicles and Fleet Electrification: This guide from the US Department of Energy's Office of State and Community Energy Programs provides a checklist of factors to consider when completing an analysis of charging needs. Information about siting planning and preliminary assessments starts on page 3.

ZEV Ready Step 10: Complete Site Assessment and Design EVSE: A step-by-step resource from the US Department of Energy that provides information about charging infrastructure needs, siting analysis, and other considerations.

METRICS AND DATA

Data points to consider when planning for charging include the number of current and future vehicles, vehicle energy consumption patterns, route length, and vehicle "on" time.

ADDITIONAL IMPLEMENTATION CONSIDERATIONS

Degree of difficulty	 Minimal to Moderate
Staff time	The time required to analyze charging needs will depend on the size of the fleet and its mix of light-, medium-, and heavy-duty vehicles.
Departments involved	Fleet managers, sustainability, public works.
County role	Counties that have or are looking to have electrified fleet vehicles should conduct a charging needs analysis. Counties can also support municipalities by providing educational opportunities, technical assistance, and resources.
Partners	EV vendors, local dealerships, electric utilities.

2.4 Ramping Up: Train relevant staff on EV use and maintenance

Creating policies and protocols related to EVs and charging station use ensures a clear and transparent understanding of expectations for all parties involved. Training staff on the policies, protocols, and best practices related to EVs and their charging infrastructure aids the transition to electric vehicles.

Keeping a brief usage guide in the glove box of municipally owned EVs, explaining vehicle charging procedures, vehicle battery range, and other information to support the user, can also be helpful.

Topics to discuss in training for EV and charging infrastructure usage include the following:

- How to use the EV
- How to charge the EV
- Where and how to find charging stations
- Best practices for maintaining charging equipment
- Range considerations for the EV
- Charging rotation schedules

Additional training for fleet maintenance staff focused on the best methods for maintaining the electric fleet can be helpful if fleet maintenance is completed in-house.

RESOURCES + ASSISTANCE

Fleet management videos and training: The US Department of Energy released a series of training videos to support fleet managers. Relevant videos include EV Technology Overview and Driving Electric Vehicles.

National Alternative Fuels Training Consortium: This organization, run by West Virginia University, provides various resources and trainings on electric and alternative fuel vehicles, designed for technicians and first responders.

ADDITIONAL IMPLEMENTATION CONSIDERATIONS

Degree of difficulty	 Minimal to Moderate
Staff time	The primary lift to accomplish this action is allocating time for training. Currently, a wide range of free training courses is available, covering various EV subjects. Some EV fleet maintenance courses require an enrollment fee.
Departments involved	Fleet managers, fleet operators, staff who will use EVs.
County role	Counties may provide training and educational opportunities to county employees who will use and maintain EVs. Counties may also act as facilitators and conveners and organize larger training sessions with staff members from multiple local governments.
Partners	Auto dealerships, educational course providers, electric utilities.

2.5 Ramping Up: Install charging infrastructure for municipal fleet vehicles

Once the planning process for the fleet's charging infrastructure needs is completed (see 2.3 Conduct an analysis of fleet charging needs), the next step is to site and install charging infrastructure for municipal fleet vehicle use. In the paper *How Cities and Counties Can Electrify Their Fleets*, RMI breaks the process into two steps: design and permitting, and construction and installation.

Design and permitting. When preparing a site for charging infrastructure, consider the existing grid capacity and determine if any upgrades are necessary to support the planned infrastructure. Depending on the expected load and existing infrastructure, an additional on-site transformer may be required. If grid upgrades are needed, this can add additional costs and time to the project, so it is critical to coordinate with your local utility(ies) early and often.

Also consider if and how the EV chargers will impact traffic flows. When designing charging station stalls, account for accessibility guidelines and safety considerations (i.e., ensure there is proper lighting in a well-traveled area).

Finally, gather the required permits and design approvals, if applicable. Coordinating and understanding the time required to obtain approvals from all stakeholders, including the electric utility, city facility staff, and any contractors, can help keep this process progressing smoothly.

Construction and installation. This stage can vary depending on whether the installation is part of a larger construction project or a stand-alone retrofit, as well as the type of chargers and related infrastructure being installed (e.g., wall-mounted or pedestal, laying conduit for future installations, etc.). During this phase, all civil and electrical upgrades are made, and the charger is installed and connected to the electrical grid.

COMMUNITY EXAMPLES

City of Kalamazoo, Michigan: Kalamazoo began its electric fleet build-out by ordering six electric vehicle charging stations in 2024, as well as a mobile charging unit. The city has a goal of 100 electric vehicles in its fleet by 2032.

City of Sun Prairie, Wisconsin: In 2023, Sun Prairie installed Level 2 charging stations at City Hall that are shared by the public and the city's municipal fleet vehicles. The publicly available stations are free to use, with one station open 24/7 and the other reserved at specific times for fleet use. In 2024, the city installed additional Level 2 stations that are reserved for municipal fleet use only.

City of Milwaukee, Wisconsin: Along with electrifying the municipal fleet, the City of Milwaukee has been installing charging infrastructure to support electric fleet vehicles. By the end of 2025, the city will have increased its charging ports to support municipal fleet vehicles from one to seventeen.

RESOURCES + ASSISTANCE

ZEV Ready Step 10: Complete Site Assessment and Design EVSE: The US Department of Energy's walkthrough provides information on identifying charging needs, charging site analysis, managed charging options, and cost estimates.

EVI-LOCATE: A tool from the National Laboratory of the Rockies (NLR) that helps assess EV charging station deployment and plan for infrastructure location and cost. To access the tool, create a public user account. Currently, the tool has geographic limitations. If your community is outside the bounds of this tool, consider connecting with your local Clean Cities Coalition chapter, which can provide the analysis or connect you with an entity that can.

COST

The Alternative Fuels Data Center explains that the costs of installing charging infrastructure are influenced by various factors, including site location, charging level, type of charger, related infrastructure needs, and construction costs. To help reduce costs, check to see if your local electric utility offers rebates for commercial chargers, which municipalities are often eligible for.

Figure 1. Estimated equipment and installation costs by EV charger level

	Equipment	Installation
Level 1	$300–$1,500	Up to $3,000
Level 2	$400–$6,500	$600–$12,700
DCFC	$10,000–$40,000	$4,000–$51,000

Source: GPI analysis based on "Electric Vehicles for Fleets," US Department of Energy, accessed September 10, 2025.

ADDITIONAL IMPLEMENTATION CONSIDERATIONS

Degree of difficulty	 Moderate to Significant
Staff time	The siting and design process for EV charging stations will vary based on local conditions and internal capacity.
Departments involved	Sustainability, finance, public works.
County role	Counties can install EV chargers on county-owned property when possible and coordinate the deployment of EV chargers by cities and towns to ensure alignment with county and regional electrification goals.
Partners	Charging providers, electric utilities.

2.6 Ramping Up: Establish goals for fleet electrification

The ultimate goal of this work is for transportation electrification to become the norm in your community and for policies to be in place that allow for continuous fleet electrification. Formally adopting a timeline and goals for fleet electrification is a great step in that direction. Communities often also set smaller, more intermediate goals to help keep them on track and accountable to meet the larger, longer-term goal.

As you work to set goals for fleet electrification, keep the following in mind:

1. **Alignment with community-wide goals.** Aligning fleet electrification goals with other city-wide goals and initiatives, like GHG emission reduction goals, can help determine the target date for full electrification.
2. **Specificity is key.** Pairing clear timelines with those goals creates accountability and allows progress to be tracked. For instance, a community may set a goal to electrify 100 percent of its light-duty fleet by 2050, with an intermediary goal of 50 percent electrified by 2035.
3. **Availability.** While electrification is the end goal, it is important to acknowledge that not all fleet vehicles have a viable electric alternative. In these instances, alternative options, like other powertrain solutions, alternative fuels, or right-sizing your fleet, can be found to reduce greenhouse gas emissions produced by these vehicles.

However, EV technology is improving rapidly, and new options for light-, medium-, and heavy-duty vehicles are becoming increasingly available.

COMMUNITY EXAMPLES

City of Fitchburg, Wisconsin: (p. 20) The city's sustainability plan outlines several fleet electrification goals and sub-goals. The plan states the following:

> "Achieve 40% conversion of municipal operations gasoline vehicles and equipment within City and municipal fleets to EV's by 2036. Achieve 100% conversion by 2048."
>
> "TL6-1: Conduct an Electric Vehicle Suitability Assessment (EVSA) for vehicle fleet."
>
> "TL6-2: Require a proportion of non-emergency City fleet vehicles to be electric vehicles, or use no/low carbon alternative fuels, based on the results of the EVSA (above). Update City vehicle purchasing policy/budget process to default to alternative fuel with traditional internal combustion engine (ICE) as optional requiring proof of need. Policy to take emissions/fuel reductions into account when purchasing vehicles/equipment."

City of Sun Prairie, Wisconsin: In 2024, the city of Sun Prairie passed a resolution to fully electrify 50 percent of the light-duty fleet, with all other vehicles being hybrid or plug-in hybrid electric by 2035. This resolution was made after Sun Prairie used the DRVE tool to complete a total cost of ownership fleet analysis.

City of Woodbury, Minnesota: In the Transportation and Land Use chapter of the 2024 *Environmental Stewardship Plan*, the city of Woodbury includes a goal to electrify 35 percent of its municipal light-duty fleet by 2035.The city also aims to increase battery electric vehicle ownership to 15 percent of vehicles on the road by 2035.

RESOURCES + ASSISTANCE

Developing a "Green Fleet" Policy: The North Carolina Clean Energy Technology Center provides guidance, templates, and benefits for creating a green fleet policy.

ADDITIONAL IMPLEMENTATION CONSIDERATIONS

Degree of Difficulty	Moderate
Staff time	Establishing goals related to fleet electrification will require staff time to determine realistic timelines. Once established, systems should be implemented to regularly compare progress against stated goals and adjust as needed.
Departments involved	Fleet managers, fleet operators, finance, planning, sustainability, public works.
County role	Counties can set their own fleet electrification goals and/or support communities within their jurisdiction in developing their own goals.
Partners	EV vendors, dealerships, electric utilities.

3.1 Full Speed Ahead: Electrify medium- and heavy-duty fleets

As medium- and/or heavy-duty vehicles come up for replacement as a part of their natural lifecycle, or in alignment with the municipality's goals, timelines, and fleet assessment, they can be replaced with a comparable EV. With medium- and heavy-duty electric vehicles, communities will need to determine whether there are EVs that can adequately satisfy their specific needs. The Zero-Emission Technology Inventory (ZETI) is a helpful tool for understanding the EVs and fuel cell options that are available on the market.

Purchasing at least one medium- or heavy-duty EV fleet vehicle would satisfy one of the Gold designation requirements within Charging Smart.

While electric options for medium- to heavy-duty vehicles are continuously expanding, some municipal fleet vehicles might not currently have a viable electric option. In these instances, other alternative fuel solutions can be used. The US Department of Energy's Alternative Fuel and Advanced Vehicle Search tool provides a good overview of the types of alternative fuel (like electric, biodiesel, propane, etc.) options that exist.

To purchase a medium- or heavy-duty vehicle, most municipalities coordinate with a vendor to place a custom order for the specific vehicle model.

Basic considerations when electrifying a medium- or heavy-duty fleet vehicle include the following:

1. **Consider vehicle use case.** Communities should determine what vehicle the EV will replace, what its requirements are, and whether an electric alternative exists on the market. Communities should also consider whether the vehicle will need alterations to perform its core functions (i.e., ladder racks, upgraded hardware, dividers, etc.). Note: With emergency response vehicles, it is particularly important to weigh available options, driving needs, and have contingency plans in case power is lost.
2. **Charging needs.** Based on vehicle driving habits and energy consumption trends, what charging infrastructure and location(s) will be needed to support the desired vehicle?
3. **Connect with the electric utility**. Communicate your project plans to your electric utility and work with the utility to determine if the grid can support the anticipated energy consumption, whether any upgrades will be needed, and if any programs exist that could help offset installation or charging costs.

If medium- and heavy-duty public transportation vehicles are not a part of the municipal fleet, communities are still encouraged to collaborate with their transit provider and neighboring communities to explore electrification opportunities. This may include working with the transit operator to assess conversion opportunities, adopting conversion goals, and deploying electric transit and/or paratransit vehicles.

Other types of off-road medium- and heavy-duty vehicles (e.g., forklifts, rescue boats, and all-terrain vehicles) and other common municipal equipment (e.g., lawn mowers, fire department extrication equipment) can also be electrified.

COMMUNITY EXAMPLES

City of Athens, Ohio: In 2022, Athens purchased its first electric shuttle bus for its public transit fleet. The city worked with two community organizations and an art studio to add a bus, covered with a colorful design, to the local public transit fleet, replacing a gas-powered bus on an existing line.

City of Madison, Wisconsin: The City of Madison's Fleet Service and Fire Department purchased an electric fire truck. The truck is powered by a 155-kilowatt-hour battery pack, is

outfitted to serve the fire department's needs, and is charged using a direct current fast charger (Level 3).

City of Madison, Wisconsin: The city has also upgraded more than one-third of its bus rapid transit system fleet to be fully electric. The initiative supports Madison's goal of having 50 percent of its fleet be zero-emission by 2035 and is part of the MetroForward initiative to improve air quality and reduce the city's carbon footprint.

Red Lake Nation: Red Lake School District, located entirely within the sovereign Red Lake Nation, purchased two electric school buses and chargers in 2024. The buses support the school district's goals of energy transition, honoring its cultural heritage and protecting the health of students and the community.

RESOURCES + ASSISTANCE

Drive EV Fleets: A cooperative purchasing initiative, organized by Sourcewell and the Electrification Coalition, to accelerate transitioning fleets to electric via reduced costs for buying EVs and their charging infrastructure.

Fleet Electric Vehicle Implementation Checklist: The US Department of Energy developed this checklist, outlining steps for fleet electrification.

Medium- and Heavy-duty Commercial and Municipal Fleets: This chapter of Xcel Energy's larger fleet toolkit outlines the benefits, barriers, and a road map for electrifying larger vehicles within the fleet.

COST

Purchasing a medium- or heavy-duty EV can be incorporated into the capital improvement plan or the municipality's budget, just as a conventional vehicle would be budgeted for. Look for available state or federal funding or incentive opportunities, as applicable.

Figure 2. Representative purchase cost of vehicle types in US dollars

Vehicle type/class	*Conventional vehicles*	*Plug-in hybrid electric vehicles (PHEVs)*	*Battery electric vehicles (BEVs)*
Compact car	$25,742	$33,690	$32,852
Midsize car	$26,774	$36,394	$34,014
Midsize SUV	$30,347	$41,329	$38,354
Pickup truck	$32,424	$51,244	$41,710
Class 3	$48,553	$64,402	$78,027
Class 4	$65,573	$96,061	$109,225
Class 5	$81,850	$121,365	$113,390
Class 6	$90,418	$130,108	$144,352
Class 7 bus	$104,588	$144,584	$154,177
Class 7 tractor	$126,196	$207,267	$221,544
Class 8 transit	$256,819	$363,993	$359,299
Class 8 regional	$168,642	$280,852	$299,951
Class 8 long-haul	$184,928	$427,745	$421,588

Source: US Department of Energy, *2025 Incremental Purchase Cost Methodology and Results for Clean Vehicles* (US Department of Energy, January 2025).

ADDITIONAL IMPLEMENTATION CONSIDERATIONS

Degree of Difficulty	Significant
Staff time	Procuring medium- and heavy-duty vehicles often has a longer lead time from purchase to deployment, so account for the additional time in the planning process.
Departments involved	Sustainability, finance, fire department, police department, public works.
County role	Counties can purchase EVs for county fleets and support municipalities by providing educational opportunities and facilitating group buys.
Partners	EV vendors, peer municipalities that have accomplished this action, electric utilities.