



**GREAT PLAINS
INSTITUTE**

Planning for Electric Vehicles Playbook



Acknowledgments

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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.

Table of Contents

- Acknowledgments..... 2
- Definitions 2
- Table of contents 3
- Introduction 4
 - Playbook structure..... 4
 - Playbook purpose 5
- Planning for electric vehicles..... 7
 - 1.1 Start here: create a community-wide ev vision, goals, and strategies 7
 - 2.1 Ramping up: address evs in planning documents 9
 - 3.1 Full speed ahead: develop an ev road map..... 11

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 planning and setting goals to accelerate the adoption of EVs and deploy charging infrastructure within your community. Other playbook topics include:

- [Engaging with utilities on EVs](#)
- [Municipal fleet electrification](#)
- [Expanding 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 for planning activities related to supporting transportation electrification, 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 (CO₂) 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 CO₂ 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 are becoming 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.

Planning for Electric Vehicles

1.1 Start Here: Create a community-wide EV vision, goals, and strategies

An EV vision statement expresses a community’s goals related to transportation electrification and serves as a reference for EV planning and policy. EV vision statements should be developed in collaboration with residents and should be aligned with state or local goals related to electrification or emissions reduction. Ultimately, an EV vision statement should indicate to both residents and the private sector the community’s intentions to support transportation electrification.

An EV vision should be used to develop EV goals and strategies, as well as an implementation plan. Communities may choose to develop EV vision statements, goals, and strategies as a part of broader planning processes, such as developing a climate action or sustainability plan. EV vision statements can also be developed in tandem with an EV road map—a functional plan that outlines the community’s approach to seeing the EV vision come to fruition.

COMMUNITY EXAMPLES

City of Eau Claire, Wisconsin: As a component of its [Electric Vehicle Roadmap](#), the City of Eau Claire created an EV vision and EV-specific goal, which directly informs the strategies and implementation plan outlined in the road map.

City of West Lafayette, Indiana: Following the adoption of the Greater Lafayette Climate Action Plan, the City of West Lafayette established an EV [vision](#) in line with the goals of the plan. The vision was published on the city website to demonstrate the community’s priorities to residents.

From the Eau Claire Electric Vehicle Roadmap (p. 16)

“The City of Eau Claire will lead and stimulate the community and regional non-carbon transportation evolution through practical and cost-effective strategies that . . . will help meet the goal of carbon neutrality by 2050 for the benefit of current and future generations.”

“EV Goal: In 2030, at least 10% of all vehicle miles traveled in Eau Claire will be by electric vehicles.”

RESOURCES + ASSISTANCE

[Community EV Vision Worksheet](#): This resource, developed by GPI, includes examples of EV vision statement language, guidance on crafting messaging, and questions to help communities develop their own EV vision statement.

[PlugShare EV charging station map](#): Use this resource to find publicly available EV charging stations in your community.

[State EV Registration Data Dashboard](#): This tool provides EV registration data by state and zip code. Some states also have individual dashboards that provide EV registration information in more detail.

[Xcel Energy Planning Process EV Toolkit](#): Xcel Energy’s Planning Process EV Toolkit provides communities with step-by-step guidance on planning for transportation electrification, including how to develop a community vision for EVs (p. 5). This resource also includes templates for stakeholder recruitment letters and sample agendas for the stakeholder engagement process. This resource is helpful to both communities within and outside Xcel’s territory.

ADDITIONAL IMPLEMENTATION CONSIDERATIONS

Degree of difficulty	● Moderate
Staff time	The total staff time and capacity required will depend on the level of engagement among community members and stakeholders.
Departments involved	Planning, sustainability, public works, economic development.
County role	Counties may choose to develop their own EV vision statements or support cities and towns in developing theirs.
Partners	Residents, community organizations, businesses, property owners, electric utilities, metropolitan planning organizations, regional planning commissions, tribal nations.

2.1 Ramping Up: Address EVs in planning documents

Incorporating EV goals, strategies, and timelines into planning documents is a key step in turning a community’s EV vision into reality. EV goals and strategies can be incorporated into comprehensive plans, transportation plans, sustainability plans, climate action plans, and more. When addressing EVs in planning documents, it is important to consider how plans and initiatives can support one another, including how a community’s EV vision interacts with electrification efforts and sustainability initiatives at the regional or state level.



Addressing EVs in either a functional or comprehensive plan is required to achieve Gold designation within the Charging Smart program.

The following are best practices when addressing EVs in planning documents:

- Goals and strategies should relate directly to the community EV vision.
- Goals should be specific, measurable, attainable, relevant, and time-based (SMART).
- Indicate which departments are responsible for actions.

- Promote community benefits associated with increased EV adoption, such as introducing techniques for budget responsibility, improved community health, and overall resiliency.
- Implement systems for tracking progress toward EV goals.

COMMUNITY EXAMPLES

City of Southfield, Michigan: Southfield recognizes electric vehicles as an emerging trend in its [2022 municipal master plan](#). They note existing infrastructure in the state and the city’s plans for future infrastructure, as well as challenges that will accompany the infrastructure build-out. They also list existing and proposed public EV charging stations. Within the goals of the Public Infrastructure section of the plan, Southfield includes continuing to build out electric vehicle infrastructure.


City of St. James, Minnesota: Increased access to electric vehicle charging stations is a primary goal of the Sustainability section of the 2023 [City of St. James Land Use Plan](#). Under this broad goal, the city includes several specific policies, including conducting a charging needs assessment and implementing outreach to promote EV adoption.

Dane County, Wisconsin: Electrifying transportation is a key recommendation of the [2020 Dane County Climate Action Plan](#) (p. 94–97). Within this plan, Dane County acknowledges the current state of EV adoption in the county and highlights the benefits widespread adoption of EVs can provide to community members. Dane County also identifies recommended actions to support EV adoption and the entities responsible for these actions within the following priority categories: Municipal Transportation Electrification, Improve and Expand EV Charging Infrastructure, and EV Education and Outreach.

RESOURCES + ASSISTANCE

[Electric Vehicle Planning Language](#): This GPI resource provides real-world examples of how communities have incorporated EV goals and strategies into various planning documents. Additionally, this guide provides an overview of establishing SMART goals and strategies.

ADDITIONAL IMPLEMENTATION CONSIDERATIONS

Degree of difficulty	 Minimal to Moderate
Staff time	Addressing EVs in planning documents should only increase the amount of time and capacity required by a minimal to moderate amount.
Departments involved	Economic development, public health, public works, sustainability, planning.
County role	Counties may lead this process for county planning documents. Counties can also play a supporting role by aligning community-level EV plans and initiatives with regional goals.
Partners	Community organizations, businesses, property owners, electric utilities, metropolitan planning organizations, regional planning commissions, state agencies, tribal nations.

3.1 Full Speed Ahead: Develop an EV road map

Developing an EV-specific plan that outlines goals and strategies for EV adoption and charging infrastructure will guide community action and support electrification.

Often titled an EV road map, this document should include goals and strategies related to charging infrastructure deployment, collaboration with public utilities, the conversion of municipal fleets to EVs, and programs to facilitate EV adoption. Goals and strategies outlined in an EV road map should be informed by a community’s EV vision statement and aligned with other community plans.

Communities will often develop an EV vision statement and an EV road map simultaneously as a singular process, allowing engagement with stakeholders to inform both.

STEP-BY-STEP GUIDANCE

1. **Identify and engage stakeholders:** Potential stakeholders may include utilities, business owners, property owners, developers, renters, municipal staff, elected officials, and community organizations. The best engagement strategies will differ by community, but may include focus groups, surveys, town hall meetings, and online engagement.

2. **Determine current community EV baseline as a point of reference:** Helpful baseline statistics may include the number of registered EVs, the percentage of vehicles that are EVs, the number of publicly available EV charging stations, the share of municipal fleet vehicles that are electric, and estimated greenhouse gas emissions from the transportation sector.
3. **Develop an EV vision:** Work with stakeholders to develop a vision for the future of EVs within your community. A high-quality vision statement should provide a clear picture of community goals, the core community values that will be addressed, and what success will ultimately look like. Some communities may have chosen to develop an EV vision prior to creating an EV road map (see the [Create a community-wide EV vision](#) section). These communities may take this opportunity to evaluate their vision and update it as needed.
4. **Identify priority areas for action:** Priority areas may include (but are not limited to) accelerating EV adoption by residents, expanding charging infrastructure, electrifying municipal fleets, and increasing equitable access to electrified transportation.
5. **Develop strategies for achieving vision and goals:** After determining community priorities, develop strategies to achieve the goals identified in the EV vision. These strategies should take the form of statements that indicate the specific action the community will take.
6. **Develop an implementation plan:** Implementation plans should outline action steps that the community will take to carry out the identified strategies. These plans should identify actions and behaviors to encourage the benefits of those actions, and metrics to track progress toward community goals. Implementation plans should also include potential outreach channels, the departments responsible for actions, required resources, and a timeline for implementation.
7. **Finalize and adopt an EV road map:** Once drafted, stakeholders and decision makers should review and provide feedback on the current road map. After a period for review and revisions, the EV road map should be finalized, adopted, and published publicly.

COMMUNITY EXAMPLES

Canton Township, Michigan: Canton worked with a consulting firm to develop an [EV infrastructure plan](#), which was adopted in 2022. The plan provides an overview of existing conditions, details of charger installation planning, including provider and location recommendations, as well as funding opportunities. It serves as a useful guide for future charging installation projects.

City of Eau Claire, Wisconsin: In 2019, the city of Eau Claire adopted its [Electric Vehicle Roadmap](#). This document, which was developed by city staff and key stakeholders, “provides a detailed plan to demonstrate, lead, and support the community’s transition to non-carbon transportation.” A sub-plan of Eau Claire’s [Renewable Energy Action Plan](#), the EV road map outlines key community priorities, establishes tangible targets related to electrification, and identifies the city departments responsible for specific actions. Additionally, this road map provides general information on EVs, presents an analysis of the current EV landscape within the community, and establishes Eau Claire’s EV vision statement and goals.

City of South Bend, Indiana: In 2023, the city of South Bend adopted a [Community Electric Vehicle Infrastructure Plan](#) to support progress toward the city’s greenhouse gas reduction goal. The plan identifies specific strategies to progress toward equitable charging, including policy steps, municipal charging, outreach, and workforce development. It provides a straightforward road map to reach the city’s EV goals.


RESOURCES + ASSISTANCE

[PlugShare EV Charging Station Map](#): Use this resource from PlugShare to find publicly available EV charging stations in your community.

[State EV Registration Data Dashboard](#): This tool provides EV registration data by state and zip code. Some states also have individual dashboards that provide EV registration information in more detail.

[Xcel Energy Planning Process EV Toolkit](#): Xcel Energy’s Planning Process EV Toolkit provides communities (regardless of whether they are served by Xcel) with step-by-step guidance on planning for transportation electrification and developing an EV road map. This resource also includes templates for stakeholder recruitment letters and sample agendas for the stakeholder engagement process.

ADDITIONAL IMPLEMENTATION CONSIDERATIONS

Degree of difficulty	 Moderate to Significant
Staff time	Developing an EV road map in-house will require a significant amount of dedicated staff time. Local governments can gain insight into the amount of time and resources needed by reflecting on previous planning processes.
Departments involved	Economic development, planning, public health, public works, sustainability.
County role	Counties may lead this process for a county-wide EV road map. Counties can also play a supporting role, connecting communities to one another so that individual EV road maps are informed by regional trends, goals, and initiatives.
Partners	Residents, community organizations, businesses, property owners, property developers, electric utilities, metropolitan planning organizations, regional planning commissions, state agencies, and tribal nations.