



## EV Strategies and Best Practices

**Homework: Prior to Workshop 2 on Tuesday, November 19, please:**

- Read through this handout
- Identify 3-5 strategies within each focus area to share with the group during the workshop - either from this handout or from brainstorming with others

During Workshop 2, we will discuss possible strategies to achieve Eau Claire's electric vehicle (EV) goals. This handout is intended to provide an opportunity to individually consider and prioritize strategies prior to the group discussion. The strategies in this handout are organized by the three focus areas identified in Workshop 1.

### **Modeling the Way – Municipal Planning and Fleets**

This focus area addresses the strategies that municipal operations can use to integrate fleet and transit electrification as well as the installation of necessary infrastructure. The leading department for this effort is Community Services. Activities within this focus area include transitioning fleet vehicles and transit buses to EVs, providing appropriate charging infrastructure to support municipal EVs, and developing required employee training.

### **Building a Strong Foundation – Public Charging Infrastructure**

This focus area will guide the City's efforts to develop a foundation for EV integration through public charging infrastructure. The Engineering department will lead this focus area. Activities in this focus area include siting and installing city-owned public charging stations, encouraging local businesses to host public charging stations, standardizing signage, and updating regulations, policies, and enforcement.

### **Sowing the Seeds for Transition – Community Education, Outreach, and Partnerships**

This focus area directs the spread of EV awareness and acceptance throughout the community and surrounding areas. The Sustainability department will lead this focus area. The activities within this focus area include developing strategic partnerships, advocating for regional policies, and encouraging EV-ownership and private chargers for residents and businesses.

As part of Workshop 1, barriers preventing EV adoption and strategies for overcoming those barriers were identified within each focus area and can be found in the tables on the following pages. Strategies developed through other planning efforts, such as the Renewable Energy Action Plan (REAP), related to EV adoption are also included. Additionally, we have selected the most applicable and achievable strategies for Eau Claire from a compilation of best practices for EV integration from around the country. Quick Wins indicate strategies that are fundamental for EV integration and require minimal City effort, while Larger Efforts are strategies that need additional City resources.

**List the numbers of your top 3-5 strategies here:**

Focus Area	#1	#2	#3	#4	#5
Modeling the Way					
Building a Strong Foundation					
Sowing the Seeds for Transition					

## Modeling the Way – Eau Claire Brainstorming

### Identified Barriers:

- **High upfront costs:** Costs for infrastructure and equipment upgrades, EVs, associated energy use, and staff training hours are substantial and will require additional funding and approval. This process could delay the progress of transitioning to municipal EVs.
- **Vehicle replacement cycles:** Replacing municipal fleet vehicles is limited by the life of vehicles and planned replacement cycles.

Strategies	Description
<b>M 1. Reallocate/realign budget/funding sources.</b>	Costs for infrastructure and equipment upgrades, EVs, associated energy use, and staff training hours are substantial and will require additional funding and approval. This process could delay the progress of transitioning to municipal EVs.
<b>M 2. Explore on-demand micro-transit.</b>	Based on recommendations in the Transit Development Plan (TDP), the option of micro-transit can be explored - including a cost-benefit analysis of EVs versus internal combustion engine (ICE) vehicles. The coverage area could be piloted through municipal efforts or public-private partnerships.
<b>M 3. Conduct a route analysis.</b>	In order to optimize fleet routing efficiency, the City can evaluate physical conditions of routes such as terrain, trip mileage, and number of stops. This evaluation will determine whether transportation services can be supported by light-duty EVs and battery electric buses and can reveal whether on-route charging is needed to maintain current operations or if the fleet can be charged overnight at depot charging stations.
<b>M 4. Promote anti-idling policy.</b>	Ensure that new employees are aware of the existing anti-idling policy and that current employees receive annual refresher training on the policy - to reduce Greenhouse Gas (GHG) emissions when possible.
<b>M 5. Plan and install municipal fleet EV chargers.</b>	To accommodate for growth in the number of municipal EVs, the City will need to plan and install charging stations at the Central Maintenance Facility as well as at the new Transit Center.
<b>M 6. Update purchasing policy to support EVs.</b>	Ensure that criteria used to make decisions around purchasing new equipment encourages EV replacement. One example may be looking at lifetime cost of equipment rather than only comparing upfront costs.

## Modeling the Way – Additional Strategies and Best Practices

Strategies	Description	Examples
Quick Wins		
<b>M 7. Develop an inventory of potential charging sites for municipal fleets.</b>	Use data about current fleet vehicle use, from a fleet study or other data source, to identify potential siting for EV charging stations. Use information about where fleet vehicles are kept when not in use, as well as information about frequently visited locations, to develop a preliminary inventory of potential charging sites.	
<b>M 8. Develop EV training for maintenance staff.</b>	Support employee professional development by providing training to fleet mechanics on EV maintenance and repair.	The <a href="#">Clean Tech Institute</a> offers a <a href="#">certified EV technician training program</a> .
<b>M 9. Refresh procurement guidelines.</b>	Add procurement guidelines that require justification be provided for the purchase of a non-EV fleet option. Alternatively, include a requirement in the procurement guidelines that fuel consumption and GHG be considered as economic factors in the vehicle purchase decision-making process.	The <a href="#">Pan-Canadian Framework on Clean Growth and Climate Change</a> developed procurement methodology as part of the 2018 <a href="#">Greening Government Fleets report</a> .
<b>M 10. Include EV use training in the employee onboarding process.</b>	Add training, on how to use the EV fleet, to the employee onboarding process as an easy way to boost employee exposure to and engagement with EVs.	The <a href="#">U.S. General Services Administration</a> developed example <a href="#">training series material</a> in 2016.
Larger Efforts		
<b>M 11. Develop a bus electrification plan.</b>	Develop a plan for EV bus transition that considers routes, fueling, procurement options, and site modifications to accommodate chargers and other facility upgrades. This plan should provide a roadmap for initial adoption and for scaling to a larger number of vehicles.	
<b>M 12. Develop a time-of-use charging plan for municipal fleets.</b>	Enable charging controls to manage the time of day vehicles are charging. Optimize EV operations to take advantage of time-of-use electric rates by charging during off-peak hours, which can keep energy costs low.	
<b>M 13. Administer an in-depth heavy-duty fleet charging analysis.</b>	Install a heavy-duty fleet charging management system. More advanced control systems can limit the number of buses that charge at one time and can defer or prevent the need for costly utility upgrades. This may be most applicable at the Transit Garage and the new Transit Center.	

## Building a Strong Foundation – Eau Claire Brainstorming

### Identified Barriers:

- **Connectivity/accessibility:** Currently, only a few public charging stations exist in Eau Claire. Future charging stations throughout the City should be sited in a way that connects EV drivers to desired destinations such as grocery stores, parks, major thoroughfares, etc. Additionally, siting for and design of public charging stations will need to consider ease of accessibility for all EV users, so should include: 1) appropriate ADA design to support disabled drivers and, 2) equitable locations for residents of multi-family developments and low-income housing who might not have access to charging stations at their residence.
- **Education about charging locations:** Many members of the community are unaware of existing charging locations and are, therefore, unlikely to use them. Lack of use weakens the return on investment.
- **Availability/locations:** Ensuring that there are enough charging stations available for EV users at the times needed may be a challenge for the City. Installing enough charging stations for EV users to feel supported and confident about driving in and around the City will be cost- and labor-intensive. In addition, appropriate locations for new charging stations will need to be selected based on known driving patterns in the community.
- **Cost fee structure:** A consistent fee structure for public charging station usage will increase community use of available charging stations. Setting this fee structure could be tricky without a good understanding of use patterns and station costs.

Strategies	Description
B 1. Map existing infrastructure.	By developing a map of existing infrastructure that includes details like locations of electrical supplies, parking payment meters, and wireless/cellular connectivity, optimal charging station siting can be established with minimal infrastructure upgrades.
B 2. Conduct a rate study.	A rate study can be used to analyze the energy cost for hosting public charging stations and should consider time-of-use, electric demand at a given time, and total use during a billing period. These factors can be used to set rates for charging stations and to ensure that operating costs are covered.
B 3. Conduct a long-term cost and revenue study.	This study could identify budgetary needs and potential revenue benefits to support the installation and maintenance of EV infrastructure in the community over a long period of time.
B 4. Work with large entities and employers to host charging stations.	The City can encourage local businesses and industries to install public chargers, which will reduce some of the overhead costs for the City.
B 5. Apply for EV charging infrastructure grants.	Federal, state, and private grants are available specifically for EV charging infrastructure and can be used to defray some of the upfront costs to the City. The VW settlement is a near-term opportunity for funding.

## Building a Strong Foundation – Additional Strategies and Best Practices

Strategies	Description	Examples
Quick Wins		
<b>B 6. Incorporate ADA compliance into public charging station design.</b>	Establish <a href="#">ADA</a> requirements for all charging station installation. While there are no current ADA requirements governing the installation of charging stations, there are several components of ADA specifications that can be applied to EV charging infrastructure to make it more accessible for drivers with disabilities.	The <a href="#">City of Atlanta</a> outlines accessibility requirements for EV charging on page 18 of its <a href="#">EV Readiness Workbook</a> .
<b>B 7. Allow right-of-way EV charging.</b>	Allow EV charging and parking in right-of-way locations, to increase the opportunities for EV charging station installation. This can serve as a visual representation of the City's commitment to EVs by placing parking spaces in optimal locations and boosting visibility of EV-friendly infrastructure to residents and visitors.	The <a href="#">Clean Energy Coalition in Michigan</a> includes sample siting and installation locations for EV chargers in new and existing public right-of-way, as well as sample signage and regulations, in <a href="#">Section 6D&amp;E of their EV roadmap</a> .
<b>B 8. Establish and enforce parking rules for EV parking spots with charging stations.</b>	Collaborate with private partners to establish and enforce consistent rules for EV parking spots and signage. These regulations may include limiting how long an EV can use a charging location, EV parking spot use requirements (e.g., whether or not an EV needs to be charging to use the parking space), and penalties for violations.	The <a href="#">City of Atlanta</a> specifies EV charging space designs in its <a href="#">EV readiness workbook</a> .
<b>B 9. Increase renewable electricity for EV charging.</b>	Encourage charging station operators to pair their equipment with renewable energy sources. A direct-current fast charger (DCFC) downtown iconic solar canopy structure is being piloted and could be replicated in additional locations.	The <a href="#">Minnesota Solar Energy Industries Association</a> (MnSEIA) joined the <a href="#">National Renewable Energy Laboratory</a> (NREL) Solar Energy Innovation Network (SEIN) team in 2018 to research methods for improving the nation's electric grid and pairing EVs with PVs. The <a href="#">solar potential analysis report</a> was completed in 2018.
Larger Efforts		
<b>B 10. Establish budget for EV charging station installation and upkeep.</b>	Designate an annual line item in the community budget for installation and maintenance of public charging stations.	
<b>B 11. Develop charging corridors.</b>	Work with regional partners to develop EV travel corridors. For more information about this program, visit the Federal Highway Administration's <a href="#">Alternative Fuel Corridor website</a> .	

## Sowing the Seeds for Transition – Eau Claire Brainstorming

### Identified Barriers:

- **Awareness:** There is a general lack of awareness in the community about EVs. Range anxiety (a fear of running out of battery power before reaching the desired destination or another charging station) is a big concern for residents - especially in the colder winter months. The community is largely unaware of existing charging stations, the cost benefits of EVs, and the improving technology that are making EVs more feasible in Wisconsin. This lack of awareness is preventing EV adoption by residents.
- **Lacking dealer leadership:** Local dealerships do not currently have EVs in stock. In order to purchase an EV, residents must go out of town. This takes revenue and business support out of the local community and does not offer local visibility of EVs.

Strategies	Description
<b>S 1. Increase awareness with events around Xcel Energy's new EV rates and the City's goals.</b>	The partnership between the City and Xcel Energy provides the benefit of Xcel Energy's outreach support. Residents and businesses can learn about optimizing their energy use with an EV and about the various rebate and informational programs available through Xcel Energy.
<b>S 2. Leverage Xcel Energy programs.</b>	Xcel Energy offers special programs for accelerating EV integration. Examples of programs the City could use may include residential charging infrastructure installation and separate EV time-of-use rates.
<b>S 3. Trade Ally via Focus on Energy.</b>	Establish a list of local contractors, who are trained to install EV charging stations, on the Focus on Energy website.
<b>S 4. Dealership ride-and-drive events.</b>	Ride-and-drive events have been shown to increase EV ownership by providing residents an opportunity to compare EVs to ICE vehicles through test drives. This also encourages local dealerships to stock more EVs, thus keeping business local.
<b>S 5. Add EV information to the City website.</b>	The City can use its own website as an outlet for EV information such as: types of vehicles, locations of existing public charging stations, available rebates, and permitting process steps for installing charging stations at homes and businesses. This may be part of a larger sustainability portal connecting to other REAP strategies.
<b>S 6. Key community collaborations.</b>	By leveraging key communities within the City, information and awareness about EVs can be spread more easily and effectively. These partnerships may include local businesses and colleges.
<b>S 7. Require and prioritize parking for EVs.</b>	By providing and enforcing priority EV parking, requiring EV-ready infrastructure for new construction and building upgrades, and updating siting and zoning codes to include EV-friendly policies, EV owners will feel more comfortable and supported in Eau Claire.
<b>S 8. Foster EV car/ridesharing and taxi programs.</b>	Through public-private partnerships and incentive programs, the City can encourage EV use by vehicle-sharing and taxi organizations. This will provide more residents and visitors visibility of and first-hand encounters with EVs.
<b>S 9. Promote policies and efforts for marketplace transformation.</b>	Updating the City's policies to support local, regional, and national collaborative efforts will help accelerate the integration of EVs into the marketplace.

## Sowing the Seeds for Transition – Additional Strategies and Best Practices

Strategies	Description	Examples
<b>Quick Wins</b>		
<b>S 10. Standardize the permitting process.</b>	Offer a standardized permitting template with a separate service fee specifically for charging infrastructure - to establish a straightforward and consistent method for residents and businesses to become EV-ready.	The <a href="#">City of Berkeley</a> California offers a <a href="#">code compliance checklist</a> for EV charging station permits.
<b>S 11. Connect with contractors.</b>	Provide outreach and training to local electricians, to ensure that residents who want EV charging stations installed at their home receive consistent and accurate information.	<a href="#">U.S. Department of Energy</a> provides a <a href="#">handbook</a> for electrical contractors.
<b>S 12. Recognize local businesses with workplace charging.</b>	Encourage local businesses to install EV charging stations by recognizing their efforts through local green business programs or other local business recognition programs.	<a href="#">Saint Paul, MN</a> has the <a href="#">Energize Saint Paul</a> program, which provides resources and recognition for businesses that are taking positive steps in energy actions.
<b>S 13. Organize public group buys.</b>	Partner with local dealerships to offer limited-time discounted pricing on EVs through a group buy.	The <a href="#">City of Fort Collins</a> partnered up with <a href="#">Drive Electric Northern Colorado</a> to organize a <a href="#">public group buy event</a> in 2019.
<b>Larger Efforts</b>		
<b>S 14. Incentivize EV purchases.</b>	Offering community-specific rebates, in addition to available tax credits and rebates, can help overcome the barrier of high upfront costs for EVs.	The <a href="#">Sierra Club</a> and <a href="#">Plug-in America</a> have developed a <a href="#">sample rebate legislation template</a> for vehicle purchase rebates.
<b>S 15. Review and update taxes and fees.</b>	Review projected EV adoption trends and anticipated transportation revenue required, to plan appropriate EV taxes and fees - such as road use fees - to support capital investments.	The <a href="#">State of Oregon</a> developed the <a href="#">Road Usage Charge Program</a> , a pay-by-the-mile tax to ensure funds are collected from all vehicle owners. Fuel taxes paid at the pump are credited back to ICE vehicle owners.
<b>S 16. Offer charging station incentives and rebates.</b>	Establish a rebate or grant program for companies that choose to install publicly accessible EV charging stations.	The <a href="#">Yellowstone-Teton Clean Cities Coalition</a> is offering <a href="#">a rebate of \$5,000</a> for public charging stations in communities surrounding Yellowstone and Teton National Parks.
<b>S 17. Include EVs in minimum required parking spaces.</b>	Allow builders to include EV charging station parking spaces as part of the required off-street parking spaces for new commercial building construction. This allows builders to include EV parking without having to obtain additional areas for parking to meet the minimum requirements.	The <a href="#">City of Indianapolis and Marion County</a> updated their <a href="#">municipal codes</a> , regarding required off-street parking, to incorporate EV charging station installation. The <a href="#">State of California legislature</a> adopted a <a href="#">municipal code</a> allowing EV parking spaces with accessible charging stations to count as one option for required off-street parking.
<b>S 18. Update building codes.</b>	Incorporate EV-readiness requirements into building codes for new construction to reduce future installation costs	The <a href="#">City of Atlanta</a> updated its <a href="#">building code</a> to require that all new commercial and multifamily parking structures have 20% EV-ready spaces and all new residential homes have EV charging infrastructure in place.