

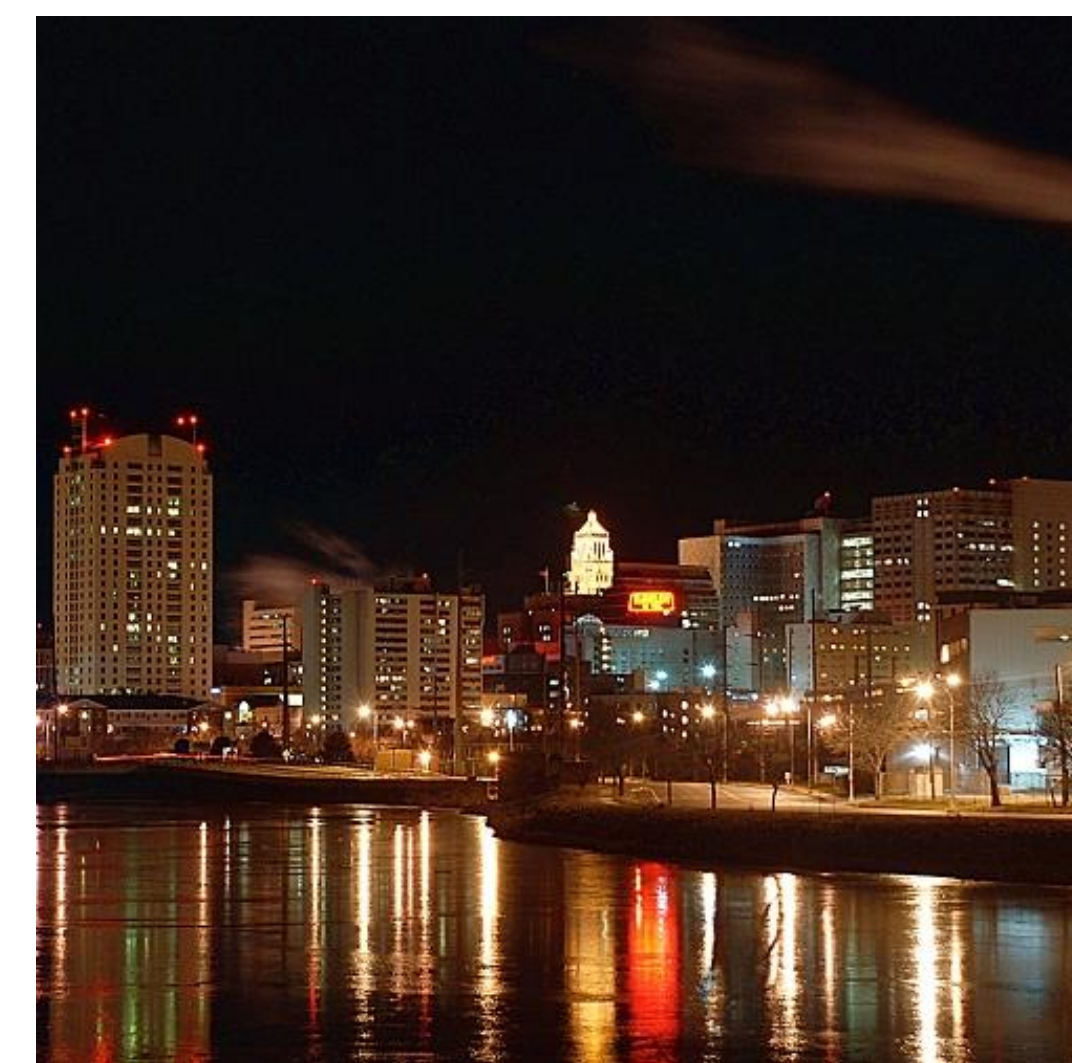


Electric Vehicles, The City of Rochester, and Rochester Public Utilities

Dru Larson – Rochester Public Utilities, Rochester MN

Rochester Public Utilities

- Municipal utility in Rochester, MN serving 55,000 electric and 40,000 water customers
- RPU plans to be 100% renewable energy by 2030
- Non-AMI utility
- Average low temperature in January, 8°F (dipped to – 30°F in January 2019)
- Home to the world-famous Mayo Clinic
- Over 3 million visitors every year (during a non-pandemic)



Early EV Adopters

- First utility in the state to install an EV charger
- Purchased a Chevrolet Volt in December 2011



The Next Several Years

- Only 4 BEVs and a couple PHEVs available in Minnesota
 - Nissan Leaf
 - BMW i3
 - Tesla Model S/X
 - Chevrolet Volt
- Ranges for accessible BEV's not long enough for the cold weather
- RPU Chargers required expensive repair out of warranty



Renewed Focus

External

- New BEV's and PHEV's available!
- Excitement of upcoming Vehicles
 - Ford Mustang MachE
 - Volkswagen ID4
 - Tesla Cybertruck
 - Rivian
 - GMC Hummer
 - Lordstown Motors
 - Nissan Aryia
- Adoption rates are soaring!

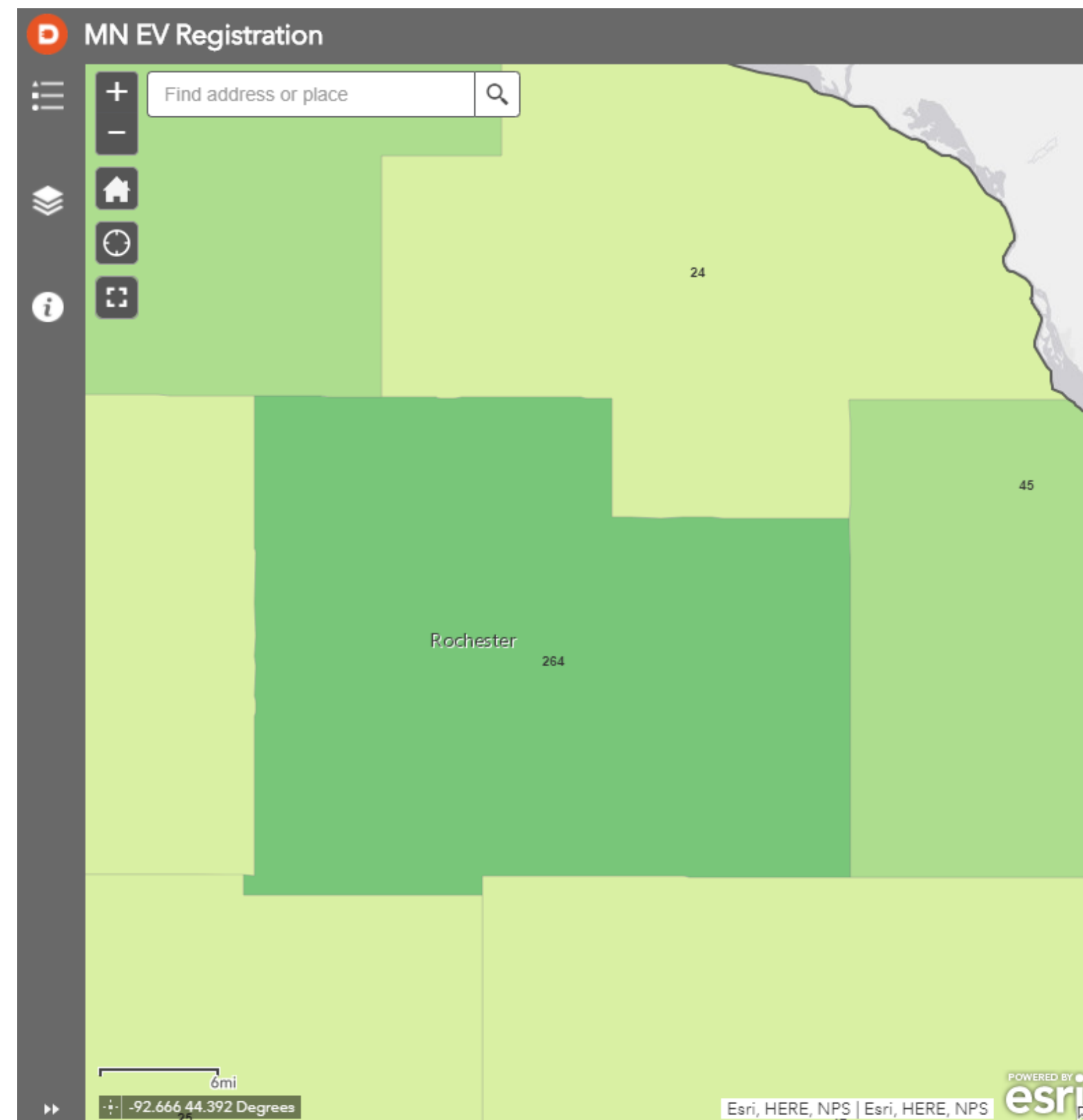
Internal

- City of Rochester Energy Action Plan
- RPU 2030 Resource plan for 100% renewables
- Electrification Market and Technical Assessment
 - 21 MW of EV load by 2030
- New Load/New Revenue

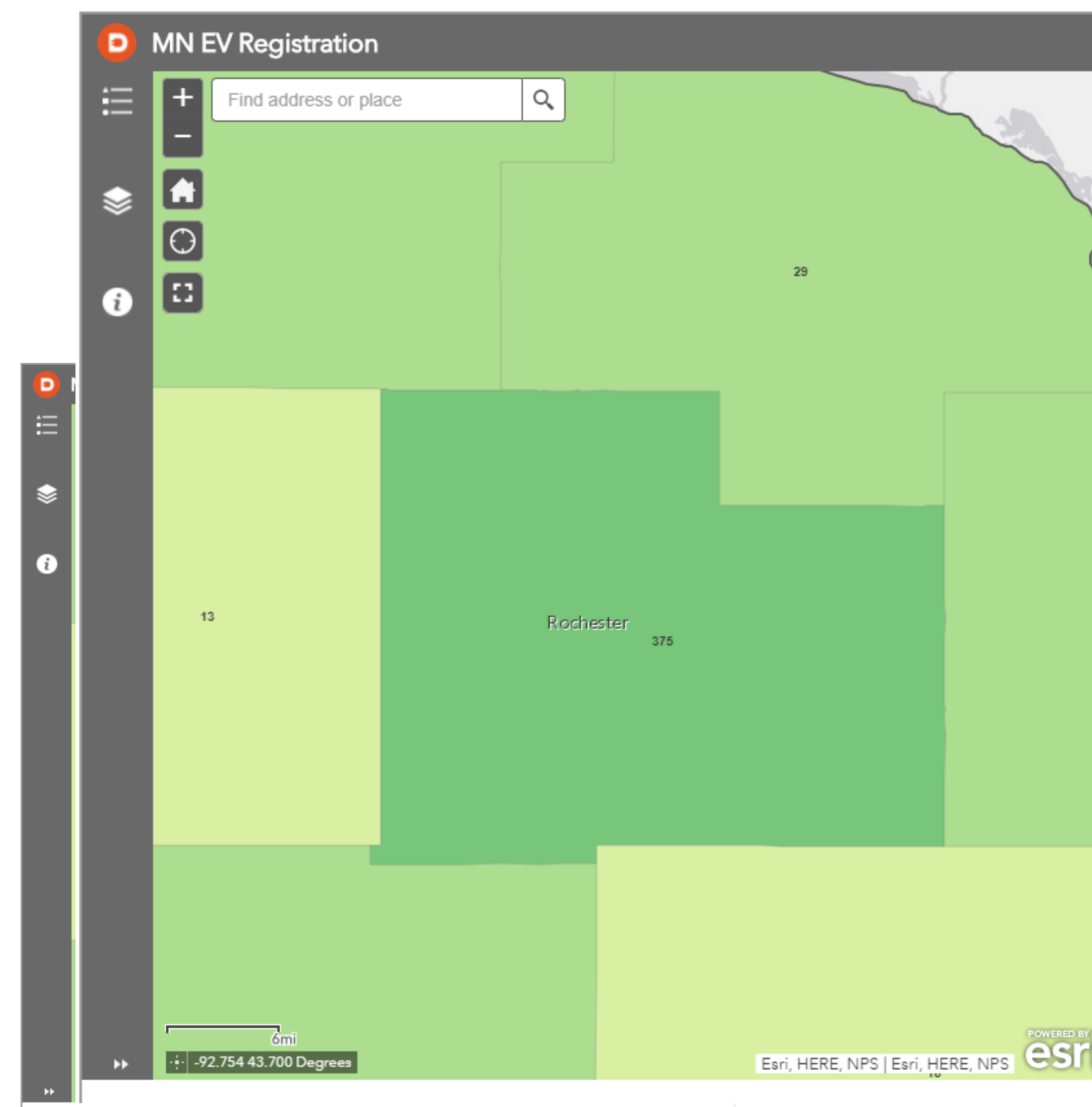


Olmsted County EV Adoption Rate

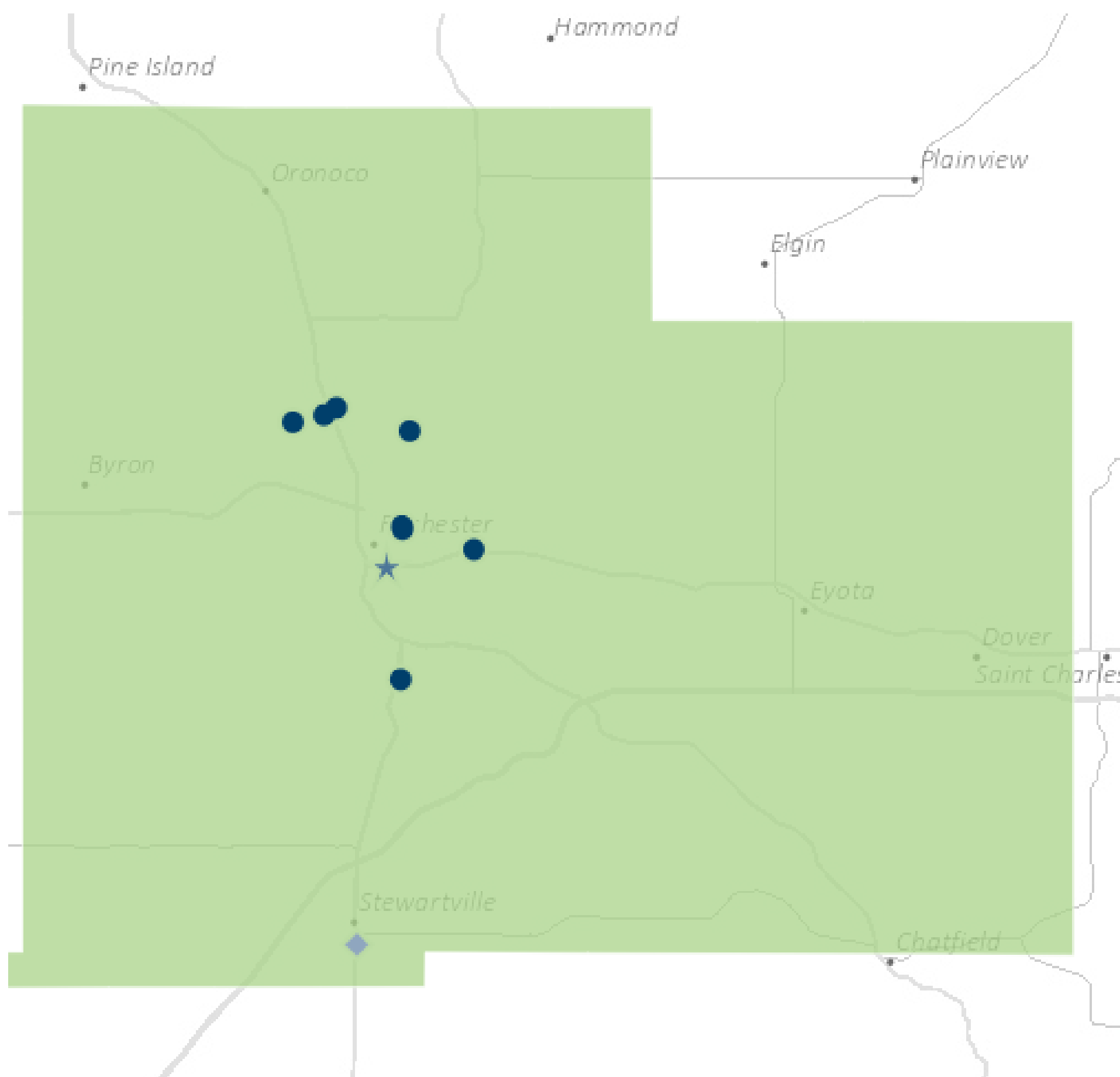
April 2019 (264)



February 2020 (375)



As of September 9th, 2020...



Charging stations


Level 2 charger	DC fast charger	Total
19	9	28

Total vehicles per Level 2 charger	Total vehicles per DC fast charger
23	49

Vehicles

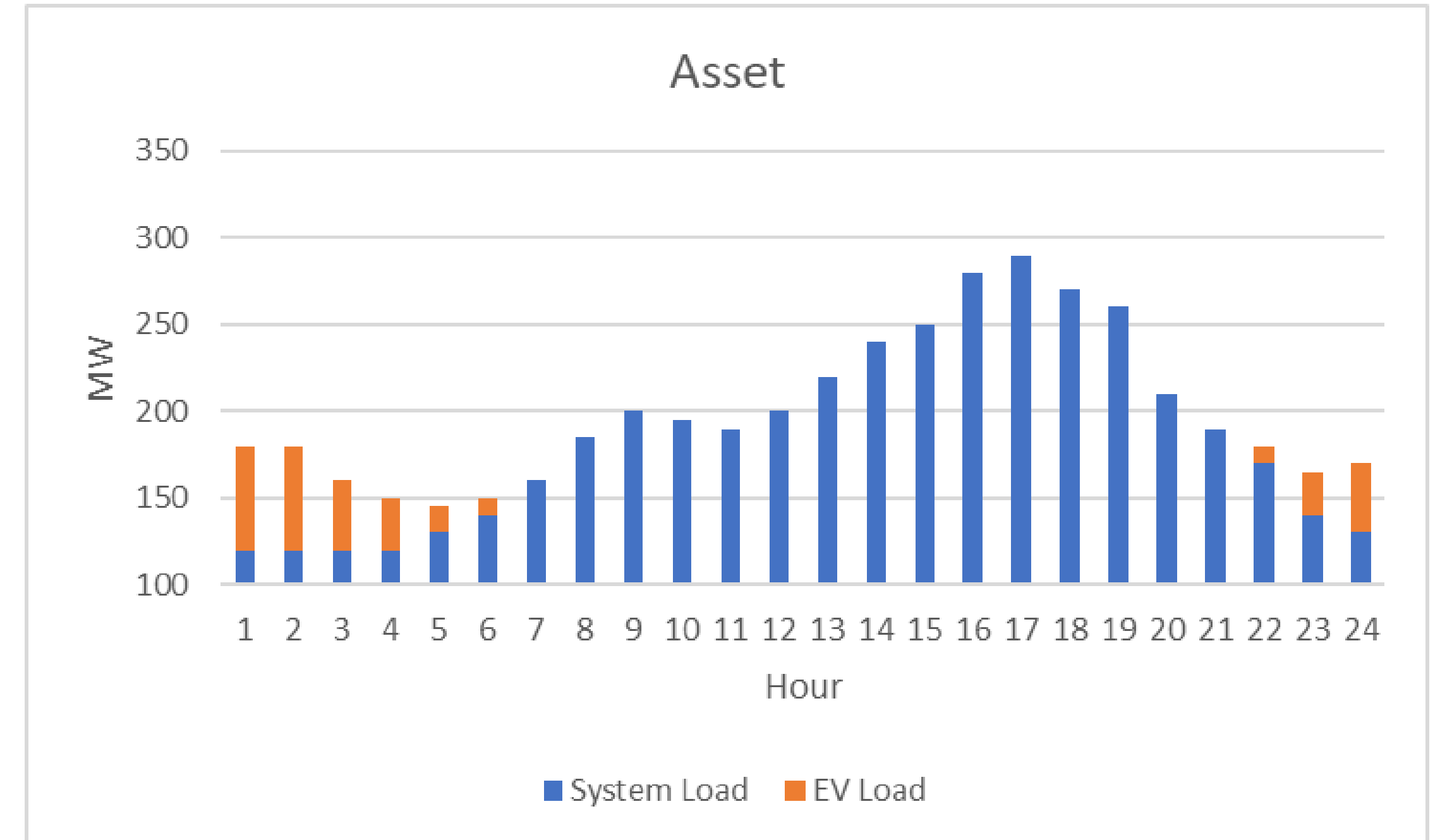
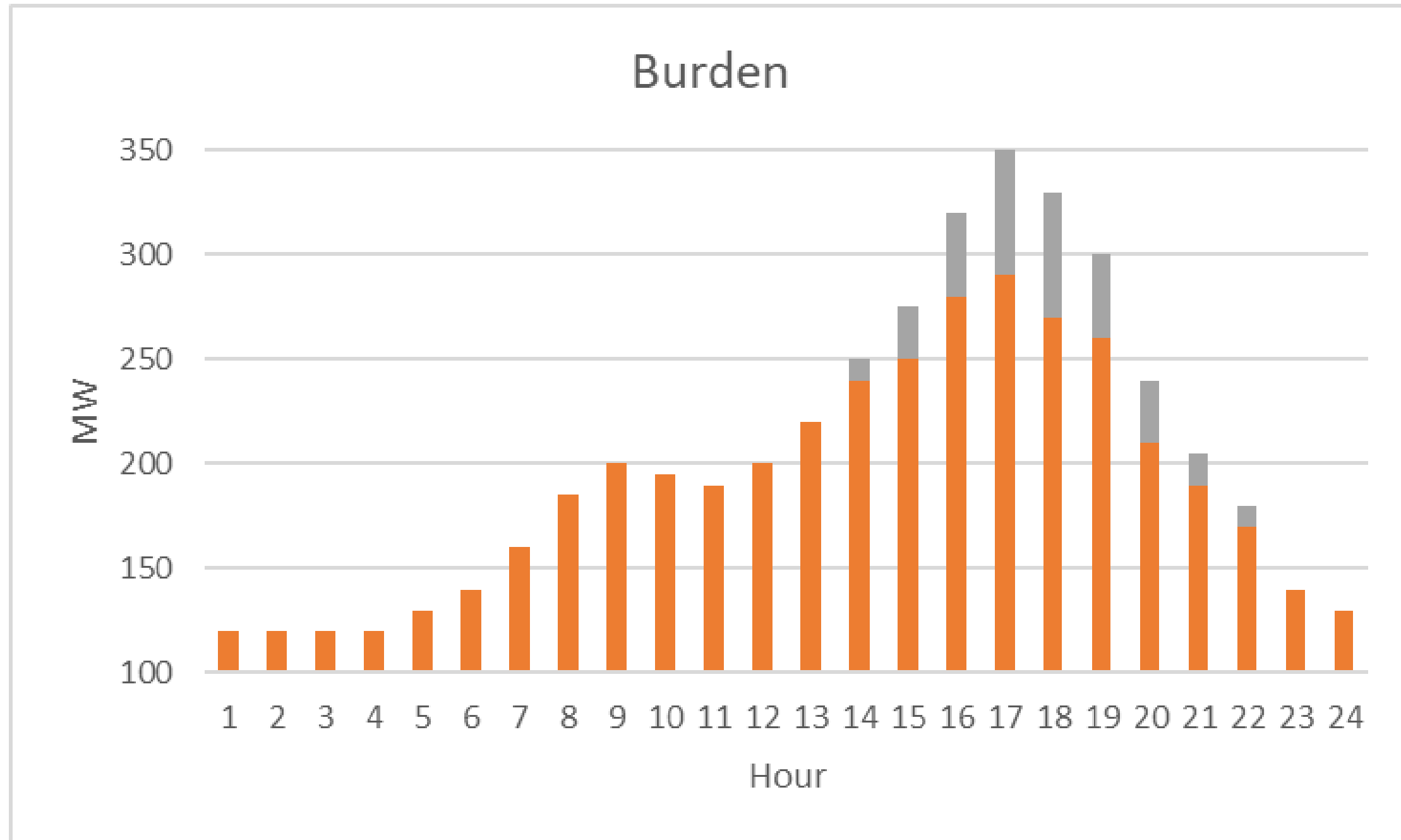
Battery electric vehicles (BEV)	Plug-in hybrid electric vehicles (PHEV)	Total
228	211	439





**How do you promote, yet
communicate with your
community on EV's. Are
they an asset or a burden?**

What does it Mean to be an Asset or a Burden?



Electric Vehicle Owners Club

- Provides a mechanism for:
 - Mapping loads
 - Gauging charging habits
 - Go-to EV focus group
 - Creating community enthusiasm



ELECTRIC VEHICLE OWNERS CLUB

SIGN UP AND POCKET \$25*

SPONSORED BY ROCHESTER PUBLIC UTILITIES

Rochester Public Utilities (RPU) is charged up about electric vehicles (EV). We want to learn more from you to see how RPU can best help fuel the growth of EV's. Also, since this is new electric load, there are uncertainties about how this will impact our electric infrastructure. By learning from you, we can determine how we can best plan for the future with keeping the reliability high and rates low for everyone.

Benefits for club members:

- Receive a \$25 bill credit! *
- Share your input and help RPU understand EV owner's needs
- Be the first to hear about special RPU EV happenings
- Connect with other EV owners through community events
- Share your EV experience

EV club qualifications:

- ✓ Must be an active RPU residential customer
- ✓ Own or lease a qualified electric vehicle***
- ✓ Complete this form and a follow up survey
- ✓ Submit a copy of your Minnesota Automobile registration****

*Funds are received in a form of a one-time RPU bill credit. **Only vehicles licensed as EV (all electric) or PHEV (Plug-in Hybrid Electric Vehicle) that can travel on the freeway at highway speeds are eligible. RPU reserves the right to determine eligibility. ***Vehicles must be registered at same address as your RPU residential account address.

Receive \$25 Just for signing up!*



Scan here to access the Follow-up Survey

PLEASE FILL OUT THE FOLLOWING FORM, AND SUBMIT TO ROCHESTER PUBLIC UTILITIES:

RPU customers are eligible to receive one bill credit per vehicle. Please complete this form for each EV.

Vehicle Information: ☐ EV or ☐ PHEV _____
Model Year _____

Home Charger: ☐ Level 1 ☐ Level 2 ☐ Both _____
Charger Brand _____ When did you start at-home charging for this vehicle? (Month/Year) _____

Customer Name _____ Account Number _____

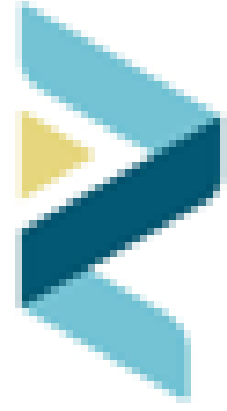
Address _____ City _____ State _____ Zip Code _____
☐ Home ☐ Car ☐ Other

Contact Phone Number (with area code) _____ Email Address _____

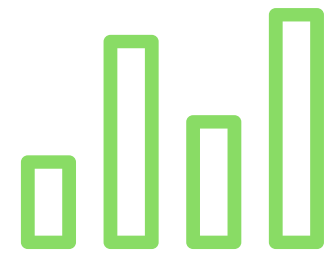
Besides the follow up survey, may we contact you regarding topics related to EV's, energy efficiency, and share your information with other EV Club Members? ☐ Yes ☐ No

MAIL OR DROP-OFF COMPLETED FORM TO: _____



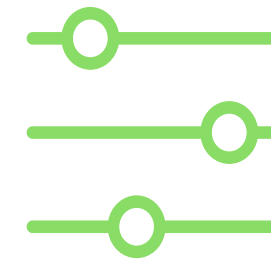


Adopted Targets from Energy Action Plan



GHG Emissions Reductions Goals

- 30% reduction in GHG emissions by 2025
- 80% reduction in GHG emissions by 2050



Renewable Energy Goals

- 25% renewable energy by 2025
- 100% renewable energy by 2030



Transportation Goals

- 28% reduction in single occupancy vehicle use by 2035
- 20% increase in public transportation use by 2035

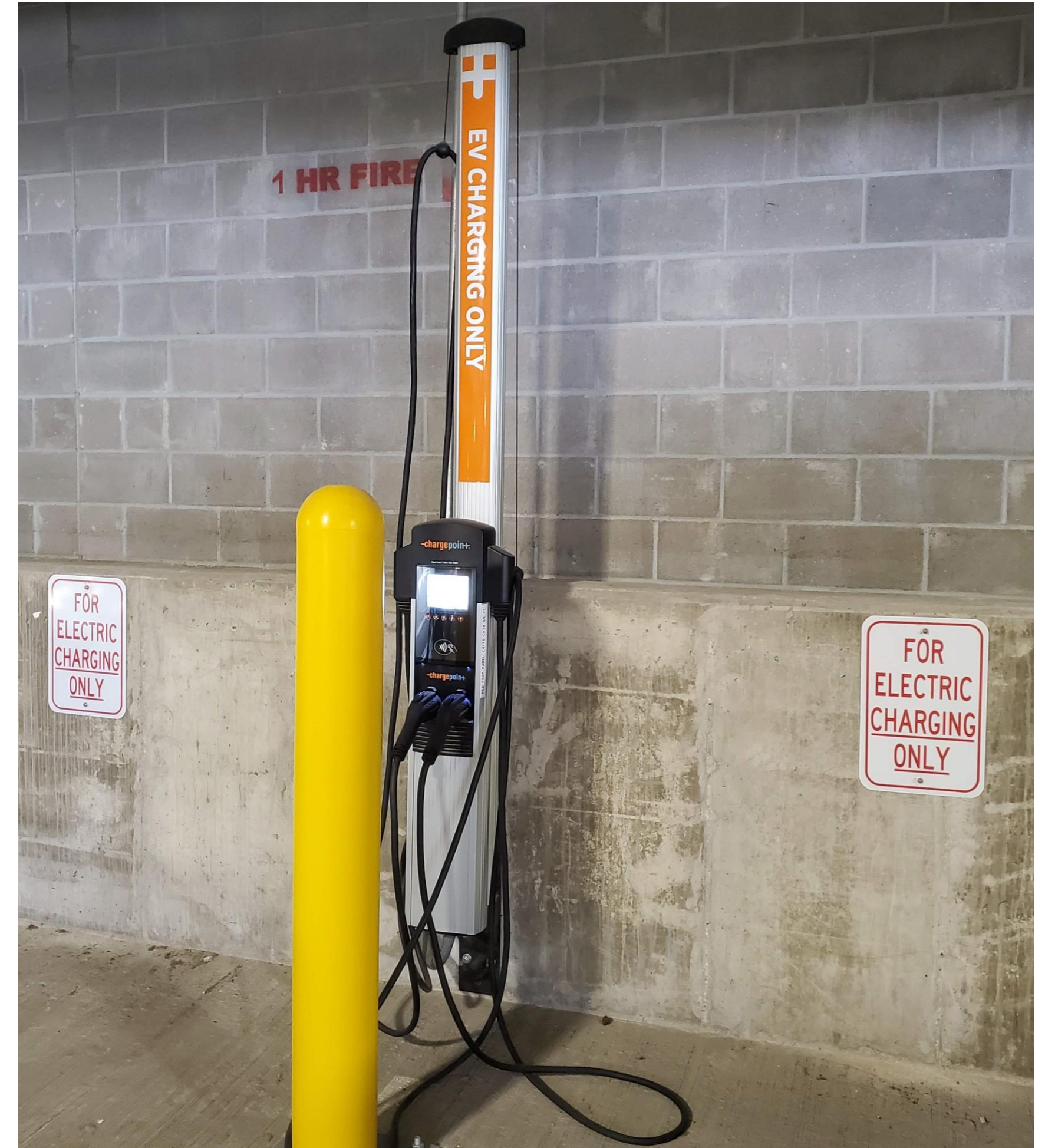
VW Settlement Grant Funds

- \$47 million
- Minnesota Pollution Control Agency
- Three phases
- DCFC charging corridors



EV Charging Installation

- First Street Ramp – 1 charger installed
- Ramp 6 – 1 charger installed
- Third Street Ramp – 2 installed
- Center Street Ramp – 2 slated to be installed, completed by end of 2020



CHARGER INSTALLED IN RAMP 6

EV Fleet Analysis

Background

- EV feasibility assessment for City fleet vehicles
- 13 vehicle sample
- Length of study: September 2019 – December 2019
- Primary goal of study: determine which vehicles can be replaced with EVs
 - Reduce GHG emissions in accordance with City goals
 - Achieve cost parity or outperform ICE vehicles over their lifetime

EV Fleet Analysis

Results

- 6 vehicles identified as good candidates for EV replacement
 - Inspector vehicles used within city limits
 - Parked at same location each evening
 - Used 8-10 hours each workday
- 5 vehicles identified as optimization candidates
 - Limited usage
 - Could combine with usage of another vehicle or two in fleet

EV Fleet Analysis

Recommendations

- Prioritize electric for 2020 vehicles purchases (2021 now)
- Evaluate optimization analysis & employ where possible
- Identify other vehicles in City fleets suitable for EV
- Develop budgetary estimates for fleet and infrastructure needs

City Bus Fleet Electrification

- Two electric buses and one electric charging station to be delivered by end of 2021 through an FTA Low- or No- Emissions Grant Program
- Two more electric buses slated to arrive in 2022 through additional FTA funding
- Interested in a plan for electrification of the fleet over time, but nothing articulated at this point



Community Groups

- Earthfest
- Rochester Electric Vehicles
- Move Electric
- Rochester Farmers Market



Joint Marketing



EV Handout

Includes frequently asked questions:

- Why consider an EV?
- What are the types of EVs?
- How do I charge?
- Where do I charge?
- What is a level 1, level 2, and DC fast charge?
- What does it cost to charge?



Community Education Class

Agenda

- Quick tutorial and introduction
- What do you want to take away from this presentation?
- History of Electric Vehicles (EV's)
- Types of EV's
- EV Myth Busting
- Battery Types
- Charging
- Operating Costs
- Emissions calculations
- What is out there?
- What model is right for me?



Residential TOU Rate 2021 Pilot



RPU 2019 EV & DSM Studies identified need for Time of Use (TOU) rate for Residential Customers.



TOU rates provide an incentive to customers to shift use to off peak times and save money.



TOU rates are adopted 85% of the time by customers with EV's for off-peak charging.



This study developed cost of service based TOU rates that equitably benefit RPU, is Residential customers, and EV owners.





Green Fleet Policy

- Policy draws upon recommendations from the EV Fleet Analysis
- Assist the City in meeting its GHG reduction goals
- Guide the process of procuring and managing the City's diverse fleet
- Objectives include:
 - Reduce GHG emissions associated with the operation and maintenance of the municipal vehicle fleet
 - Achieve cost parity or outperform Internal Combustion Engine (ICE) vehicles over their lifetime.
 - Promote the use of electric vehicles (or future green fuel technologies) through the installation of electric vehicle service infrastructure.



EV Infrastructure Planning Process

- EV Charging Infrastructure Roadmap & Action Plan
- 2021 DMC funding to install additional EV infrastructure downtown

Additional Strategies

- Adopt EV-ready building codes and streamline permitting for EV charging
- Citywide EV ready ordinance
- Policy for charging infrastructure in any new multifamily buildings



Grants

25 SLIDE

- MnDOT Clean Transportation Pilot Program
 - Procurement of an additional electric bus
- MPCA EV Level 2 Charging Stations Grant
 - Install two chargers at City DSIC facility



- Trade Ally Training
 - Class for installing residential chargers
- Direct Load Control development
 - Third party software for controlling peaks



**UNDER
CONSTRUCTION**



THANK YOU

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