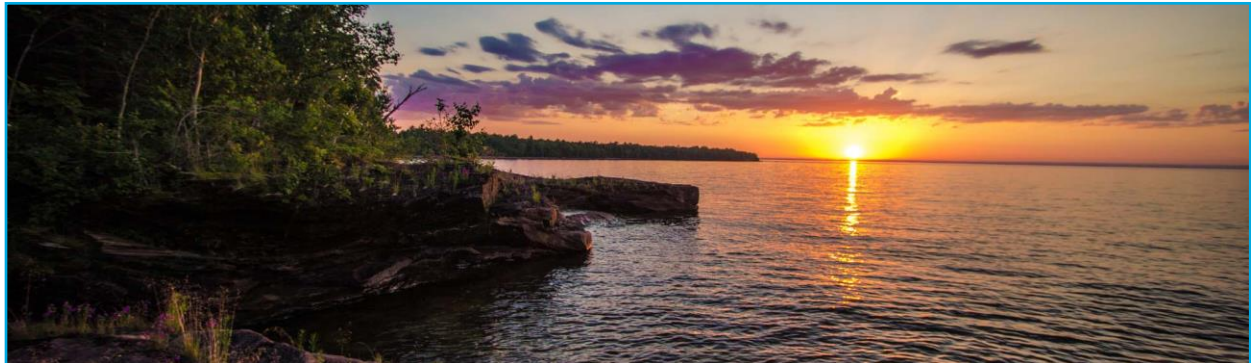




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# Case Study: DCFC Collaboration along Minnesota's North Shore

By Joe Cella



## CITIES

Lutsen, Grand Marais, Grand Portage

## TIMELINE

October 2017 to May 2019 for assessment, research, and development.

Seven-year pilot term from the date of site commissioning.

## WHO WAS INVOLVED

Arrowhead Cooperative, Great River Energy, The City of Grand Marais, ZEF Energy

## COST AND RETURN ON INVESTMENT

The hardware for each site ranges from \$10,000 to \$15,000. The return on investment is not based on financial return but on the ability of Arrowhead and its partners to offer emissions-free transportation to local Cook County residents and for visitors to Cook County.

## GREENSTEP CITY PRACTICE RELATED TO THE PROJECT

23.5: Install, assist with, and promote one or more public fueling stations for plug-in hybrid and full electric vehicles.

## TECHNICAL SPECIFICATIONS/EQUIPMENT USED

DCFC: Delta DC Fast Charger Dual Wallbox 25 kWh

Level 2: Clipper Creek Wall Mount Dual

## Project Highlights

- Three direct current fast chargers (DCFC) co-installed with level 2 stations along the North Shore
- Collaboration among partners including electrical cooperatives, local governments, and small development
- Highly engaged community—good PR plus local interest got people excited about electric vehicle charging.
- [Read a news story about the project in the Cook County Herald.](#)



## Background

In October 2017, a corridor of DCFC opened between the Twin Cities and Duluth, MN, creating the first electric vehicle (EV) charging corridor in the state. As more EV drivers were drawn to the area, demand grew to extend the charging farther along the North Shore. An opportunistic employee of Arrowhead Cooperative presented an idea for a project, and after surveying its customers, discovered that there was a lot of local interest in EV infrastructure. Arrowhead Cooperative, which is a member of the Great River Energy Cooperative, partnered with Great River Energy, ZEF Energy, and the city of Grand Marais to install three DCFC locations along the North Shore. As of April 2019, charging sites are open in Grand Portage and Lutsen with DCFC and level 2 charging available, and work is almost complete on a DCFC location in Grand Marais.

## Lessons Learned

Having community engagement and feedback proved invaluable when making a case to decision makers (the board of Arrowhead Cooperative). By gathering tangible evidence of EV interest in the area, it was much easier to show decision makers that installing charging was something the community wanted. Additionally, in a project with multiple partners, it is worth taking the time to make sure each partner feels like they are engaged and have the chance to provide input into the project. This includes site owners, utility partners, and local governments.

## Challenges

While not a significant setback, once private businesses were approached to act as host sites the number of partners involved increased. That then required making sure that the contracting and site control/management was done fairly to all partners. There were a surprising number of land use issues to hash through.

*“Aligning a multitude of partners for a project that isn’t focused on traditional economic returns has been one of the most exciting projects of my career. It isn’t very often that the return on a project is based on the social benefit more than it is on the financial. Because of this project focus, it made saying “Yes” to the project an easy decision for our stakeholder group.”*

- Yusef Orest, Arrowhead Cooperative

The organizers of the project also had to form the right messaging to present their project to the board of Arrowhead Cooperative. Eventually, they realized that while the project would not be able to provide the cooperative with a traditional financial return, the charging station would demonstrate to the community that Arrowhead Cooperative supports the choice to go electric and more broadly encourages low emission, green transportation.

## Surprises Along the Way

Local business owners were very eager and excited to host a charging station. The Grand Portage station is located at a lodge and casino, and the Lutsen station is located adjacent to a general store. When

approaching these business owners, Arrowhead Cooperative discovered that not only were they willing to help, but they were eager to provide a site for a charging station.

## Advice for Other Cities

As Arrowhead Cooperative searched for the right partners to make the project happen, they realized that a lot of developers involved in the EV space were not able to give them the personal care and attention they needed for their project. Once they found ZEF Energy, the local approach and attention gave the project what it needed to engage

the community and make it a success in providing DCFC solutions along the North Shore, engaging the community, and celebrating the benefits that these chargers represent. Arrowhead Cooperative recommends finding a local development partner that can provide your project with the attention it needs to succeed. Finally, make sure the messaging around your project accurately portrays the benefits and reality of the project. Be clear that while DCFC typically will not have a financial return on investment, there are lots of social and environmental benefits that still make them worth installing.

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## RESOURCES FOR ADDITIONAL INFORMATION

Clean Energy Resource Teams, [www.cleanenergyresourceteams.org](http://www.cleanenergyresourceteams.org)

Drive Electric Minnesota, [www.driveelectricmn.org](http://www.driveelectricmn.org)

Great Plains Institute, [www.betterenergy.org](http://www.betterenergy.org)

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