

DOT CFI Grant Project Narrative

D.2.i, Project Narrative

I. Community Program – Project Description

The Bayfield County Wisconsin Electric Vehicle Charging Infrastructure Implementation Project (Project) is located in Bayfield County, Wisconsin, the State's second-largest county by area and the northernmost county in Wisconsin. Lake Superior adjoins the northern county line and is the gateway to the Apostle Islands National Lakeshore. The Red Cliff Band of Lake Superior Chippewa Indians (Red Cliff) is located in the extreme northern tier of the county on the shores of Lake Superior and is home to the Frog Bay Tribal National Park; the first Tribal National Park in the nation. Because of Bayfield County's rural setting and proximity to two National Parks, hundreds of miles of Lake Superior shoreline and recreational trails, 962 inland lakes, and vast tracts of interior Chequamegon-Nicolet National Forest, Bayfield County is a premier tourism destination and supports a robust tourist economy. In 2021, total visitor spending in Bayfield County was \$63M, and 1.5M visitors are estimated to have visited the area. On June 6, 2023 The Wisconsin Department of Tourism released 2022 data showing \$89 million of economic impact in Bayfield County, a 24% increase over the previous record held in 2019. The County receives frequent inquiries about electric vehicle charging infrastructure and currently has only one DC fast charger (50kW) in the county, which is inadequate for the vast area and future demand in the electrified transportation sector.

Appendix A shows a detailed road map of Bayfield County.

US Highway 2 runs east-west through the County connecting the states of Michigan and Minnesota and is designated in the Wisconsin Electric Vehicle Infrastructure Plan (WEVI) and approved by the National Electric Vehicle Infrastructure Plan (NEVI). There is no rail service in Bayfield County, which is comprised of remote and rural settings that rely heavily on tourism with the Chicago, Milwaukee and Minneapolis metro areas, all within eight hours of travel. Highway safety issues regularly occur during extreme weather events. In the last six years, major flooding washouts have closed stretches of county highways for up to 90 days, and heavy snowfall and ice accumulations contribute to hazardous winter driving conditions. An extensive system of well-distributed highway garages, modern plow equipment, and dedicated county and tribal employees work hard to mitigate these risks.

All electric vehicle charging sites associated with this project are located in small cities, towns or on tribal land. Most sites are in populated areas with 25-35 mph speed limits, and although the setting is rural, tourist and local traffic is significant. All sites proposed have existing safe ingress and egress including turn lanes. Several sites are positioned a block or more away from the primary travel routes to assist in removing traffic from faster lanes. Signage is proposed for the EVSE sites in accordance with WisDOT standards including the Manual of Uniform Traffic Control Devices, Electric Vehicle Charging Signs section D9-11b. Implementation costs for signage are included in the budget and application and approval will be made if the CFI grant is

awarded. The addition of a 4-port EV charging station in these remote areas will not negatively impact non-electric vehicles but will reduce EV charging anxiety and improve focused driving.

Data from the National Roadway Safety Strategy shows Bayfield County with few fatal crashes per square mile in 2016-2020 but an elevated level of fatal crashes per person. These conflicting statistics suggest there is always room for improvement as we strive to achieve the long-term goal of zero roadway fatalities.

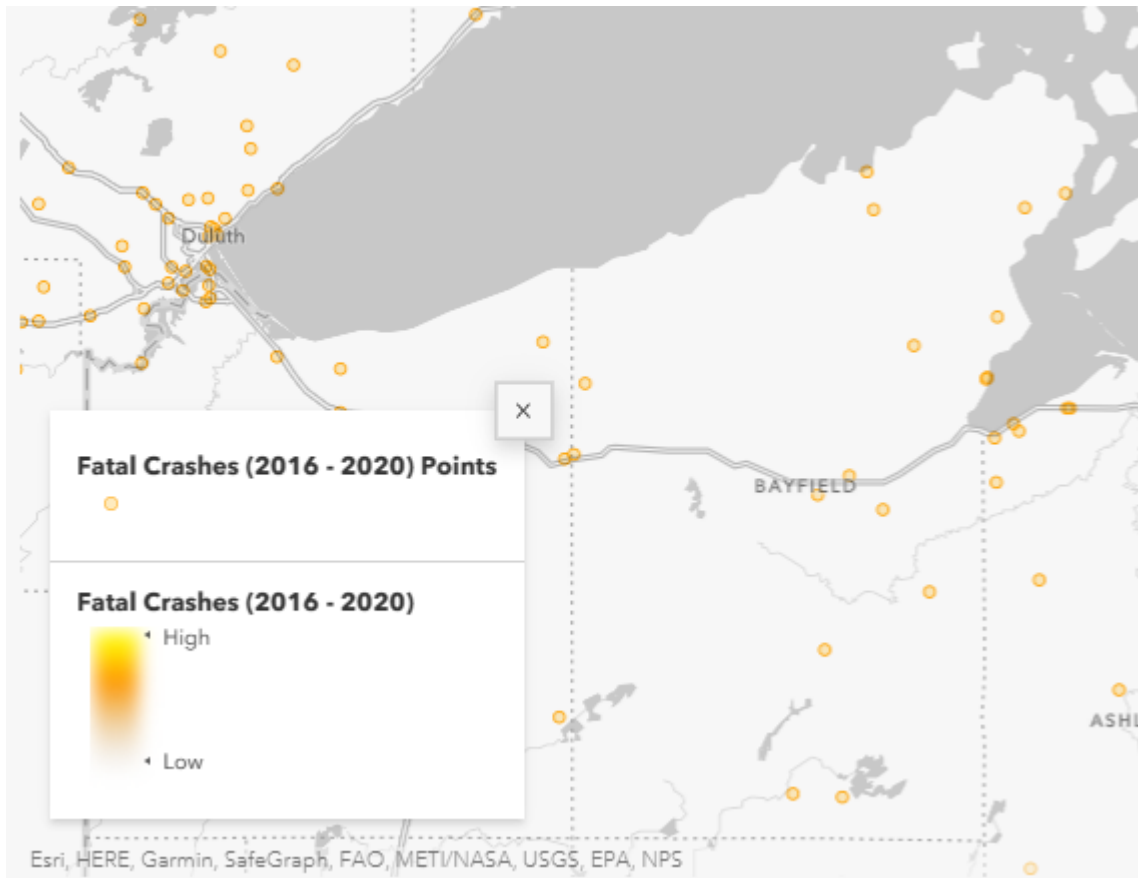


Figure 1 NRSS Bayfield County Fatal Crashes 2016-2020

All charging sites in the proposed project will have full and complete public access, 24/7, and the charging equipment will include user-friendly features such as a contactless payment system that would not unjustly isolate or discriminate against individuals with disabilities. Equipment selection and operational strategies all conform with the Americans with Disabilities Act of 1990. The U.S. Access Board [website](#) was reviewed for ADA compliant site design. Wisconsin does not currently have additional ADA compliant regulations for EV infrastructure so Federal guidelines were used. The ADA Guidelines do not identify a minimum number of chargers that must be accessible by people with disabilities, so a “reasonable number” was used. Three sites were selected for full compliance, Red Cliff, Washburn, and Ashland. The three sites represent a cross section of the County and all have paved surfaces and ample parking to accommodate the space requirements. The three sites have an additional \$2K

budgetary dollars allocated for ADA compliance to include additional signage, painting, bollards, curb design and implementation. Figure 2 shows a typical ADA compliant site.

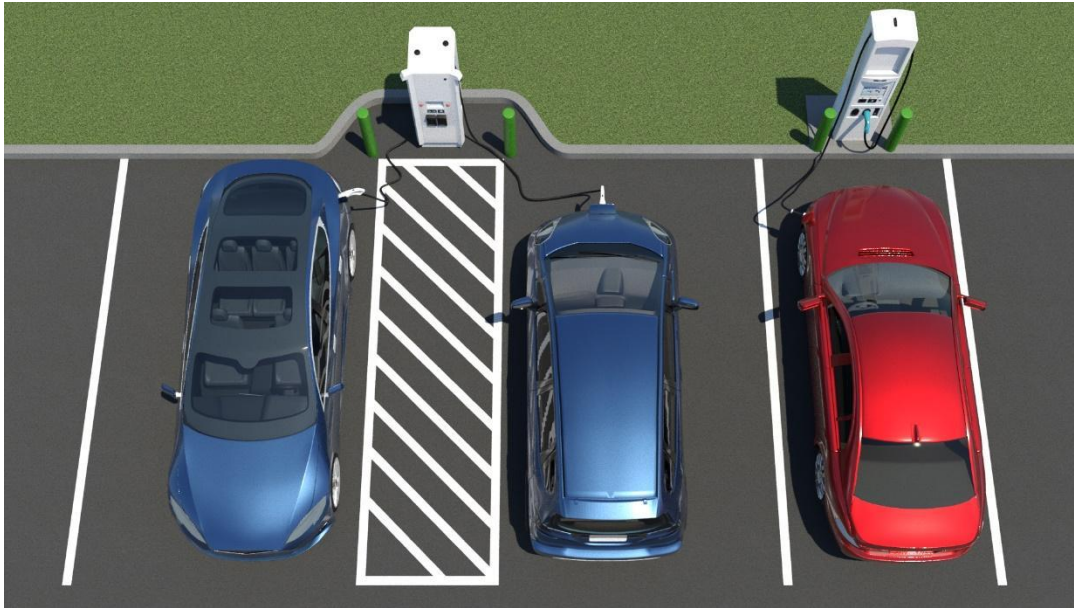


Figure 2 ADA Compliant Site. Figure from U.S. Access Board [website](#)

This Project is unique in that the electric utility, Xcel Energy, plays a significant role in establishing a private-public partnership with Bayfield County. Because Xcel is regulated by the Wisconsin Public Service Commission (WPSC) and ratepayer dollars are involved, they are required to have equitable outcomes. **Racial equality, environmental and cultural justice, and supporting disadvantaged communities and low-income customers are embedded in rate cases approved by the WPSC, filling gaps often left behind by the private sector.** WPSC Docket 5-EI-156 investigates EV Policy and Regulation. The law authorizes regulated utilities to operate EV-related programs and recover funds through their rates. Comments referenced in the WPSC Opinion identified approaches that best address equity. Bayfield County and its project partners view the private-public partnership with Xcel as an approach that uses rate-payer funds to equitably finance transportation electrification throughout the County.

In addition, Xcel's recently approved Electric Vehicle Commercial Tariff (EVC-1) allows for Program Credits to be applied to electric vehicle charging infrastructure, funds from which are being used in this grant application to cover the required 20% cost share. Most of the proposed EV charging infrastructure must be designed, engineered, and installed by Xcel because it is their electric grid that is being utilized and connected to, and they ultimately own all the transmission infrastructure except the EVSE. Therefore, Bayfield County and its partners are fortunate that existing regulated programs are in place to support this grant application.

II. Expanding Community-based Infrastructure

The WEVI plan identifies US Highway 2 as the only eligible corridor for NEVI funding and runs east-west through the center of the County. The State plan does not address secondary routes, such as the scenic-byways including County Highway 13 and County Highway 63. These routes provide a north-south route through the County important for tourists to access the National Parks and National Forest, the Red Cliff Reservation, and the scenic shores of Lake Superior. This project fills a significant gap in current access to these important national landmarks and indigenous cultural centers. The proposed charging sites are geographically dispersed throughout the County and include a variety of site owners designated by sector type, including a 4-port charging station on the Red Cliff Reservation at the Legendary Waters Resort & Casino (with consideration of additional ports at this location to accommodate additional demand).

Bayfield County, the principal applicant, is partnering with Xcel Energy, Red Cliff, and multiple EVSE site owners. This private-public partnership will strengthen the likelihood of success for the Project. Bayfield County, with its governmental experience and expertise, will provide project oversight and enter into contractual arrangements to transfer ownership of the EVSE to each respective site owner, who will then be required to fulfill the NEVI Standards and Requirements such as income reporting, operational consistency, maintenance, and financial solvency. If any of the contractual requirements are not satisfactorily met, ownership of the EVSE will revert back to Bayfield County until the deficiency is resolved or a new site owner is established. This arrangement will guarantee a smooth transition and sustained operation of the EVSE for the public benefit.

Bayfield County will be selecting a single vendor for the EVSE. This will ensure the equipment meets the Requirements and Standards such as contactless payment, Energy Star ratings for level-2 chargers, minimum number of ports and charging capacities, etc., and that the vendor has a qualified workforce and apprenticeship programs in place that could support local workforce development initiatives. A common charging network throughout the County will create a more user-friendly experience, reduce operations and maintenance contract costs, and ensure components are stocked for rapid response time when repairs are needed. Bayfield County's project leadership will also ensure that appropriate safety protocols are in place and will include oversight by the Bayfield County Highway Commissioner with support from the Wisconsin Department of Transportation.

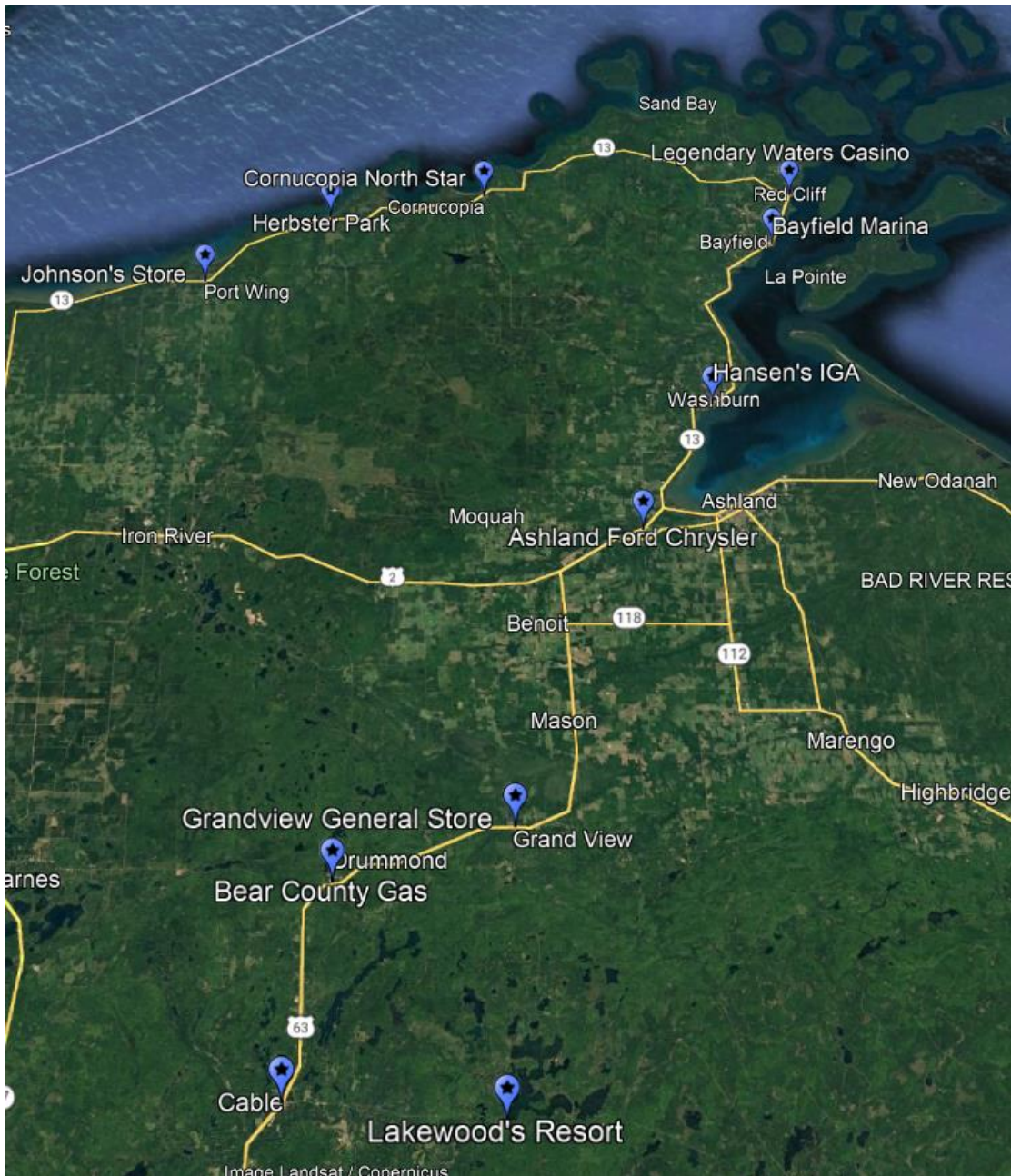


Figure 3. Blue teardrops mark the 11 proposed charging sites

III. Budget Components Breakdown

Bayfield County has worked closely with its local utility, Xcel Energy, and with the project stakeholders where the charging stations will be located, including the Red Cliff Band and the Town governments included in this project. Nonprofits such as Cheq Bay Renewables (CBR), the University of Wisconsin Extension, and many community residents have all come together in support of the County to develop this opportunity. Community input was received through

multiple public County committee meetings, Town meetings, City Council meetings, Red Cliff community outreach, UW-Extension outreach programs, surveys, planning sessions, and regional outreach initiatives facilitated by Cheq Bay Renewables. Grant preparation costs associated with the actions noted above are not included in the grant application. Costs included in the grant application include Xcel Energy’s Distribution work for final design and engineering, Electric Vehicle Supply Infrastructure (EVS), Electric Vehicle Supply Equipment (EVSE), installation costs, 5-year O&M Contract, safety equipment such as lighting and signage, ADA compliance costs, and administrative costs. The following table summarizes the project budget.

Expense Category	Amount	Percentage of Project	Eligible Expense (80%)	Cost Share (20%) Entity/Program
Xcel Engineering and Distribution Work	\$155,250	5.1%	Yes	Xcel Energy/EVC-1
EVS	\$823,900	27.0%	Yes	Xcel Energy/EVC-1
EVSE	\$1,48,152	48.6%	Yes	Xcel Energy/EVC-1
5-year O&M Contract	\$193,468	6.3%	Yes	Xcel Energy/EVC-1
BOS: Safety - Lighting, Signage, Site Prep, ADA	\$71,460	2.3%	Yes	Site Owner/Bayfield County
Administrative Oversight	\$44,000	1.4%	Yes	Bayfield County
Contingency (10%)	\$277,034	9.1%	Yes	Xcel Energy/EVC-1
Total	\$3,047,369	100%		

Table 1

A Request for Qualifications and Cost Estimate (RFQ) was released by Bayfield County in April 2023 to solicit qualified vendors and EVSE that meet the NEVI Standards and Requirements. Included in the RFQ were requirements that the equipment must include a 5-year product warranty, 5-year technical support, 5-year cellular or other internet service plan, and a 5-year software license. In addition, a 5-year preventative maintenance service agreement was required that includes at a minimum an annual equipment inspection, cleaning/testing, local parts availability, and 24-hour in-field response time. The first 5-years of operations, maintenance, and associated fees are listed in Table 1. Table 2 summarizes the results from the RFQ and lists the qualified vendors and EVSE.

Description	ZEF Energy	Carbon Day (Charge Point)	Carbon Day Option 2
Level-3 Brand/Model	Kempower DCFC 150kW	Express Plus DCFC 150kW	CPE250 DCFC 62.5kW Paired (125kW)
Level-2 Brand/Model	ZEFNET Pro 15.4kW	CP6011 & CP6021	CP6021
Level-3 Cost, 150kW 13 Units	\$1,264,757	\$1,439,035	\$1,084,600 (22 units)

Level-2 Cost, 31 Units	\$327,825	\$155,524	\$102,685 (11-dual units)
Shipping	\$18,150	\$68,620	\$34,991
5-Year Maintenance Agreement, Cloud and Warranty Agreement, Commissioning	\$193,468	\$701,042	\$514,272
Total	\$1,804,200	\$2,364,221	\$1,736,548
Number of Ports	75	44	44
5-Year Product Warranty	Yes	Yes	Yes
5-Year Technical Support	Yes	Yes	Yes
5-Year Cellular/internet Plan	Yes	Yes	Yes
5-Year Software License	Yes	Yes	Yes
24-Hour Response Time	Yes	Yes	Yes
Touchless Contact (NFC/RFID)	Yes	Yes	Yes
Compliant with 23 CFR Part 680	Yes	Yes	Yes

Table 2 Summary of RFQ for EVSE Vendor

Both vendors have met the requirements to be considered pre-qualified for future selection. When construction is imminent, they will be allowed to refresh their proposals and the County will select a single vendor, proceed to order the EVSE equipment, and prepare to enter into the 5-year preventative maintenance service agreement once construction is complete.

The preferred vendor based on the outcomes of the RFQ is ZEF Energy because of lower overall cost, but especially important, a lower Maintenance Agreement cost which the site owners will bear starting in year 6. ZEF Energy’s price estimates have been used in the budgetary tables for this grant request. Discussion about how ZEF Energy’s equipment and company meets 23 CFR Part 680 is included in Appendix C - ZEF Energy’s Proposal and in Section d. Criterion #4 Workforce Development, Job Quality, and Wealth Creation.

Please Note: ZEF Energy’s RFQ included 31 Level-2 Dual-Port yielding a total of 62 L2 ports where 31 L2 ports were requested. Quantities, model capacity and dollar amounts were adjusted in the final budget to reduce the number of L2 ports, retaining a minimum of 4 ports at each site and 9 of the 11 sites staying below the 200kW threshold of total capacity. For this reason, the final budget EVSE is below ZEF Energy’s quote.

IV. Additional Project Narrative Information

The FHWA focus areas that apply to this project are 1) Rural Area Charging and Fueling Solutions and 2) Fleet Vehicles that Serve and Operate in Communities.

Rural Charging: Bayfield County, population 16,220, with 1478 square miles of land area has 11 people per square mile, but is visited by an estimated 1.5 million tourists annually. The remote setting adds to the challenges for residents and visitors alike as distances to get anywhere are vast, the cold climate reduces EV battery range, and conditions like lack of cell coverage in many areas add risk to the electric vehicle transition. This project addresses those risks by strategically placing charging stations along secondary routes traveled frequently to traverse the County or enjoy its scenic and recreational character. Equipment will be selected with Near Field Communication (NFC) and/or Radio Frequency Identification (RFID) so that smartphones will be able to make payments to the EVSE without the need for cell coverage. Where cell coverage is limited, the EVSE will be hard-wired through fiber optic providers, or wireless internet providers, so that NFC/RFID technology can be used. NFC/RFID technology will ensure that the contactless payment system is accessible to diverse populations.

Where Visits are Coming From by State

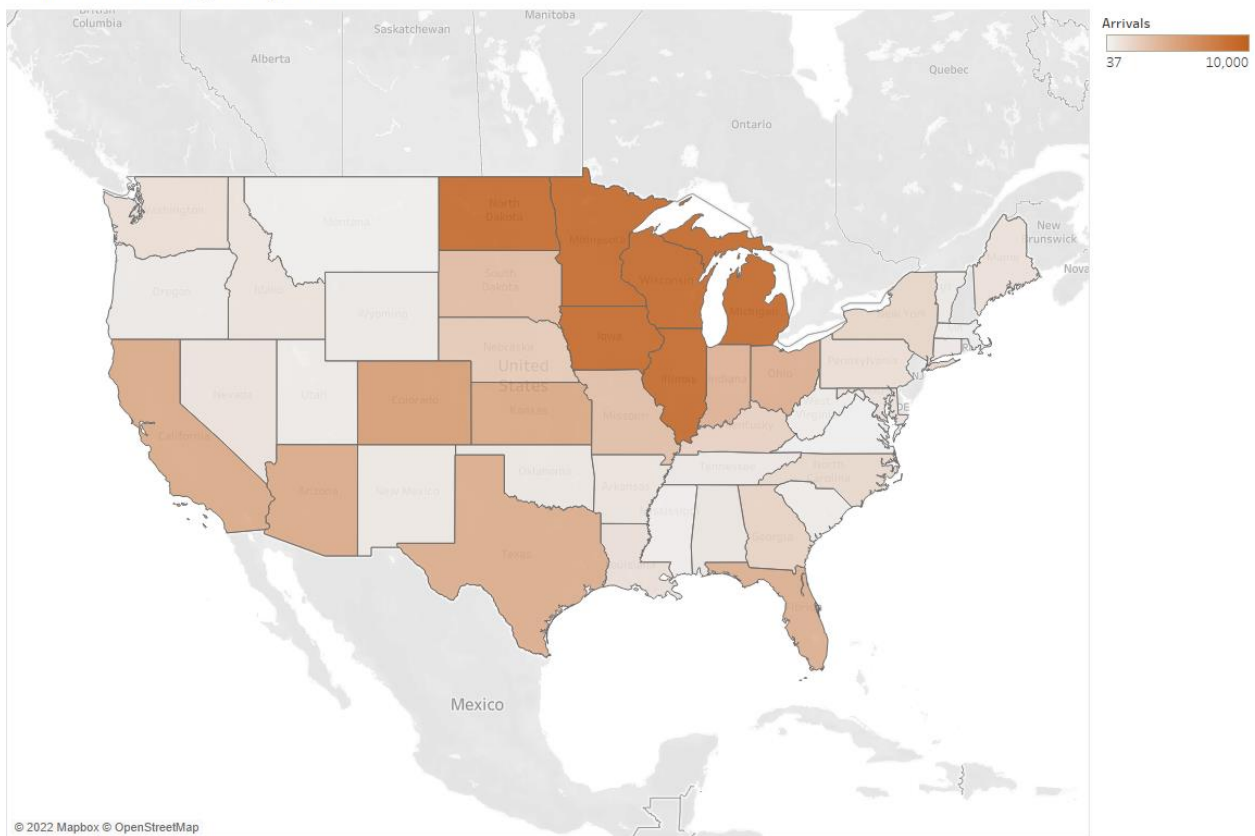


Figure 4 Visitors to Wisconsin from The Arrivalist

Each charging site will include at least one level-3 150kW DC fast charger so that a variety of electric vehicles can use the service. Each station will also have at least 2 level-2 chargers so that vehicle owners with longer travel times can safely and efficiently charge without undue strain on vehicle equipment.

Fleet Vehicles: County Highway 13 is also used by Bay Area Rural Transit (BART) and Red Cliff’s Miskwaabekaang Transit. BART and Miskwaabekaang Transit each have two electric buses on order and would directly benefit from this added infrastructure. This project will assist both bus fleets as routes expand and may be especially helpful in winter conditions when battery range is reduced. Norvado Cooperative, the regional fiber optic internet provider headquartered in southern Bayfield County, is developing its own EV fleet but requires charging infrastructure throughout the County to implement its strategy. Bayfield County is also developing an EV fleet program and has three Ford F150 Lightning pickup trucks on order for its Highway Department with the first arriving in summer 2023. Additional orders are anticipated in 2024. Charging stations dispersed throughout the County will ensure that adequate charging opportunities exist for county, tribal, and other local and regional commercial fleets. Bayfield County is also considering EV use in its squad and courthouse fleets. Increasing the prevalence of EV charging infrastructure dispersed throughout the County will allow for this strategy to be implemented.

This project serves the Red Cliff Band of Lake Superior Chippewa Indians, an indigenous and disadvantaged community as identified by census tract 9601. Bayfield County’s population is 10.4% Native American. Bayfield County’s per capita income, 2017-2021, is \$35,974, which is 2% below the state average, and has an overall poverty rate of 11.6% (U.S. Census). The project will benefit everyone that lives in Bayfield County by ensuring that Bayfield County is “open for business” in the new EV transportation transition. Additional information about how this project satisfies the Justice40 Executive Order is discussed in section D.2.iii/E.1.iv, Project Merit Criteria, c. Criterion #3 Equity, Community Engagement, and Justice40.

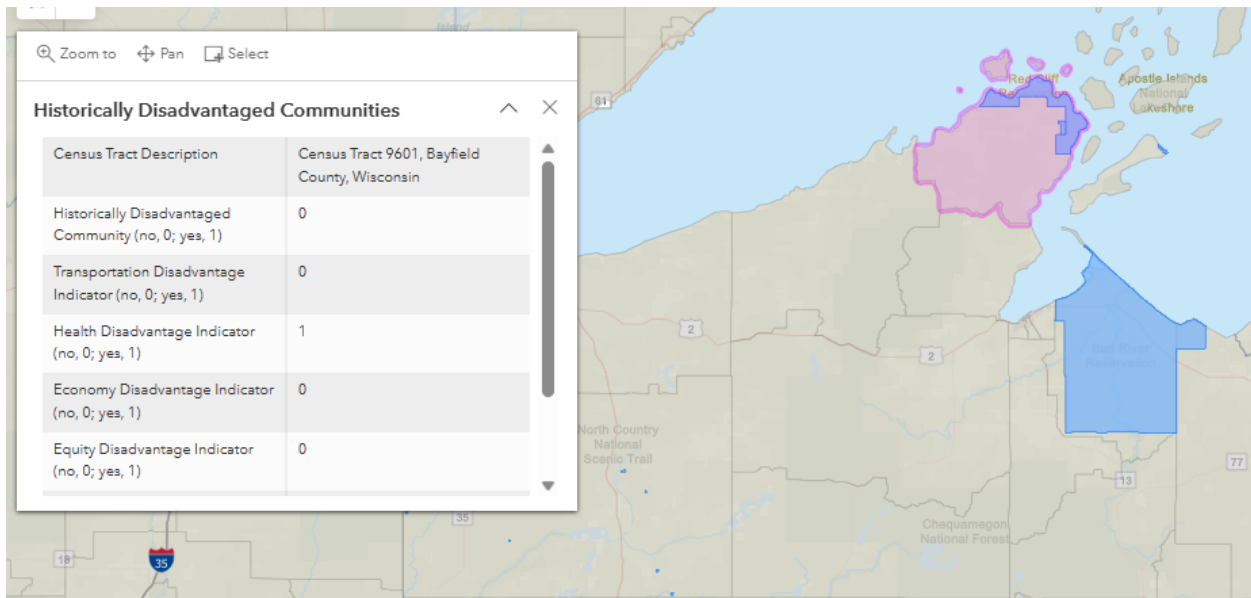


Figure 5

D.2.ii, Budget Information

The implementation budget is presented in the following table. Budgetary costs are provided by Xcel Energy for engineering and EVSI equipment and installation. Vendor quotes for EVSE and the first 5-years of operations and maintenance costs were determined through the County's RFQ process. EV charging site lighting estimate was provided by a local electrical company and is shown in Appendix E. Signage costs were provided by the Bayfield County Highway Commissioner, and County Administration costs were determined as a percentage of the total project cost and include in-kind cost sharing.

Site Description	Engineering & Distribution	EV Supply Infrastructure (EVSI)	EV Supply Equipment (EVSE)+O&M	Safety Equipment. ADA Compliance	County Administration	Contingency	Site Total
Ashland	\$26,500	\$74,900	\$224,121	\$7,860	\$4,000	\$34,868	\$383,544
Bayfield	\$18,500	\$74,900	\$136,387	\$5,860	\$4,000	\$25,141	\$276,553
Cable	\$19,000	\$74,900	\$136,387	\$5,860	\$4,000	\$25,191	\$277,103
Cornucopia	\$12,500	\$74,900	\$136,387	\$5,860	\$4,000	\$24,541	\$269,953
Drummond	\$14,500	\$74,900	\$136,387	\$6,360	\$4,000	\$24,791	\$272,703
Grandview	\$8,500	\$74,900	\$136,387	\$5,860	\$4,000	\$24,141	\$265,553
Herbster	\$2,000	\$74,900	\$136,387	\$5,860	\$4,000	\$23,491	\$258,403
Lakewood	\$13,750	\$74,900	\$136,387	\$5,860	\$4,000	\$24,666	\$271,328
Red Cliff	\$5,000	\$74,900	\$136,387	\$7,860	\$4,000	\$23,991	\$263,903
Washburn	\$9,500	\$74,900	\$224,121	\$7,860	\$4,000	\$33,168	\$364,844
Port Wing	\$25,500	\$74,900	\$136,387	\$6,360	\$4,000	\$25,891	\$284,803
Subtotal	\$155,250	\$823,900	\$1,675,725	\$71,460	\$44,000	\$277,034	\$3,047,369
% of Total	5.1%	27.0%	55.0%	2.3%	1.4%	9.1%	100%

Table 3a

Site Description	Total with Contingency	Grant Request 80%	20% Cost Share Requirement	Est. Xcel Program Credit	Excess Program Credit	Site Owner NET COST ESTIMATE
Ashland	\$371,119	(\$296,895)	(\$74,224)	(\$96,232)	(\$22,008)	\$0.00
Bayfield	\$263,612	(\$210,889)	(\$52,722)	(\$58,394)	(\$5,672)	\$0.00
Cable	\$264,162	(\$211,329)	(\$52,832)	(\$58,394)	(\$5,562)	\$0.00
Cornucopia	\$257,012	(\$205,609)	(\$51,402)	(\$58,394)	(\$6,992)	\$0.00
Drummond	\$259,762	(\$207,809)	(\$51,952)	(\$58,394)	(\$6,442)	\$0.00
Grandview	\$252,612	(\$202,089)	(\$50,522)	(\$58,394)	(\$7,872)	\$0.00
Herbster	\$245,462	(\$196,369)	(\$49,092)	(\$58,394)	(\$9,302)	\$0.00
Lakewood	\$258,387	(\$206,709)	(\$51,677)	(\$58,394)	(\$6,717)	\$0.00
Red Cliff	\$250,962	(\$200,769)	(\$50,192)	(\$58,394)	(\$8,202)	\$0.00
Washburn	\$352,419	(\$281,935)	(\$70,484)	(\$96,232)	(\$25,748)	\$0.00
Port Wing	\$271,862	(\$217,489)	(\$54,372)	(\$58,394)	(\$4,022)	\$0.00

Total	\$3,047,369	(\$2,437,895)	(\$609,474)	(\$718,014)	(\$108,540)	\$0.00
--------------	-------------	---------------	-------------	-------------	-------------	---------------

Table 3b

In addition to project implementation estimates and ongoing operation and maintenance costs, electricity costs from Xcel Energy to the site owner were analyzed and presented here. Two time periods were analyzed, years 1-5, and years 6 and following. The goal and strategy is for revenue from EV customers to adequately cover all expenses during each of the two time periods analyzed.

In the first 5-years, it is anticipated that usage in this rural and remote area will be relatively modest as EVs become more widespread. That is why the RFQ released by Bayfield County required the EVSE vendor to include operations and maintenance expenses as well as cellular plan fees in their five-year proposals. During this time frame, the only expense to the site owner will be the monthly electric bill from Xcel Energy. Xcel Energy’s rate tariffs for EV charging include on-peak demand charges, and distribution demand charges, and contains capacity thresholds in kW that determine which tariff applies, and has a “100-hour rule” or demand limiter embedded in each tariff to reduce demand charges during low volume charging.

To help the site owner determine what rate should be charged to cover Xcel’s electric bill, an EV Charging Rate Analysis Tool was developed by CBR. The tool allows the user to input a few variables, namely EVSE charging capacity for each port, and the estimated amount of time in a month that the chargers are utilized, with the automatically-populated results showing the rate necessary to charge the EV customer per kWh to cover the bill. The Tool takes the variables of Xcel’s rate structure into consideration and offers the “break-even” rate. As the EVSE gets more use, the break-even rate goes down. Limiting the billable demand to below 200kW was also found to be a significant factor in determining the charging rates. The Tool has been posted on CBR’s website and can be seen [here](#).

Xcel Energy has shown how the demand limiter in their existing tariffs will help EVSE site owners manage their electric bills and charging rates. In a current rate case before the Wisconsin Public Service Commission, adjustments have been proposed to increase the demand limiter to further assist EVSE site owners, lowering electric rates per kWh for low-volume use. Appendix B shows an example of how electric rates could be reduced by increasing the demand limiter from 100 hours to 150 hours.

Starting year-6, and assuming continuing increases to EV charging, the rates charged to the EV customer will cover operations and maintenance expenses as well as cell plan and credit card fees. Using the Tool, the site owner can see what utilization rate will be required to cover these additional expenses.

Each site owner will track revenue generated from EV charging and any expenses incurred. In years 4-5 as EV adoption increases, an escrow account, or “float” could be established to create

a smooth transition to year 6 and beyond when O&M expenses are first incurred by the owners. Documenting and reporting revenue and expenses in the first 5-years are required by the NEVI Standards and Requirements and it will be contractually required by each site owner to report this information to Bayfield County, who will file a summary in the quarterly reports to the DOT.

Bayfield County Administration Costs include reporting costs to fulfill grant requirements for quarterly progress reports and Federal Financial Reports. In addition, evaluation of the Project will be used to generate meaningful documentation to ensure that goals and objectives as stated are being met. These documents are viewed as critical and will establish a knowledge base for educational outreach to the community as well as finding any gaps in strategic planning that would be addressed going forward. Red Cliff will be encouraged to participate in all aspects of reporting and evaluation to ensure that Justice40 initiatives are being met.

D.2.iii, & E.1.iv, Project Merit Criteria

a. Criterion #1 Safety

Bayfield County has taken steps to ensure the Project will:

- 1) Provide positive safety benefits for all users by:
 - Installing EVSE installations in lower-speed traffic areas with existing safe ingress and egress.
 - Siting EVSE installations where amenities are readily available and within easy walking access.
 - Including signage to easily locate charging stations, providing advance notice for safe site access.
- 2) Not negatively impact the overall safety of the public by:
 - Direct involvement of the Bayfield County Highway Commissioner and project site owners in overseeing the planning of the sites, including location, lighting, signage, and other recommendations.
 - Requesting input from the WisDOT.
 - Involving public input through Bayfield County Municipal Planning and Harbor Commissions, and municipal boards as required.
 - Incorporating Red Cliff's Commercial Corridor examination, planning process, and community input.
- 3) Promote safety through design by:
 - Including adequate lighting for all EVSE installations.
 - Locating EVSE installations in non-congested areas.
 - Ensuring that installation work is completed by the local utility using certified workers, and that all work will be compliant with the National Electric Code and applicable State and local permits.

b. Criterion #2 Climate Change, Resilience, and Sustainability

1) The Project will significantly reduce greenhouse gas emissions in the transportation sector. Bayfield County completed a [Fleet Fuel Analysis in 2022](#) and found that emissions would be reduced by 66% when comparing unleaded gasoline consumption versus electricity from the utility. These calculations were based on emission data from the [EPA Greenhouse Gas Equivalencies Calculator](#). This data can be extrapolated to public EV charging where greenhouse gas emissions will be reduced in similar percentages.

Table 4, copied from the AFLEET Tool estimates emission savings from the charging stations assuming moderate use.

Annual CFI Tool - Emissions Reductions

	GHGs (short tons)	CO (lb)	NOx (lb)	PM 10 (lb)	PM2. 5 (lb)	VOC (lb)	SOx (lb)	Fuel Dispensed (fuel unit)	Fuel Unit
AFV Fueling Infrastructure									
Level 2 EVSE	120.7	1,663.1	46.1	4.0	3.5	145.2	0.6	186,000	kWh
DCFC EVSE	236.2	3,254.6	90.2	7.8	6.9	284.1	1.2	364,000	kWh
Fueling Infrastructure Total	356.9	4,917.7	136.3	11.8	10.4	429.3	1.9		

Table 4

2) Bayfield County experienced severe flooding in 2016 and again in 2018. The 2016 500-year flood washed out sections in all major highways in Bayfield County including US Highway 2, 13, and 63, as well as numerous smaller county and town roads. The 2018 flood caused \$1.1M in damages to state and county roads. Subsequent mitigation efforts included replacing and increasing culvert sizes under Highways 13 and 63 and replacing the South Fish Creek bridge on Highway 2 (\$428,000) to accommodate more intense rains and higher water levels.

All EVSE sites in Bayfield County are clear of floodplains as presented in the Wisconsin Department of Natural Resources [Floodplain Mapping Application](#) and all sites are placed on roads that now have expanded climate resilience because of mitigations performed over the last decade in response to extreme weather events.

3) Once EV charging infrastructure is adequately dispersed throughout the County, EV adoption will be eminent. This adoption will reduce regional carbon emissions and become a component of larger national carbon reduction efforts. In 2023, Xcel Energy will complete a three-year \$30 million Second Circuit Transmission Line project which adds resilience to the local electric grid, now designed to withstand 200 mph winds. This design, based on climate resilience measures, will be capable of supplying reliable and adequate power to the northern tier of Bayfield County including the Cities of Washburn and Bayfield, and the Red Cliff Reservation. Additional work by

Xcel Energy is underway to complete the Bayfield Peninsula Loop which will upgrade power lines feeding Port Wing, Herbster, and Cornucopia. The design of this grid upgrade considered the effects of climate change with resilience as a priority, including improvements at Red Cliff, a disadvantaged community.

4) The Project will not adversely impact air or water quality. Transitioning to electric vehicles will improve air quality with reduced emissions and will ultimately improve water quality with reduced gasoline and oil leakage on roadways and subsequent drainage into groundwaters, area creeks and streams, and Lake Superior. All sites where EV charging equipment will be located are in pre-disturbed areas, (i.e., parking lots), where endangered species are not present. The Project will have an equally positive effect on Red Cliff and Bayfield County as a whole. Bayfield County is a low-risk environment for wildfires because of its cooler northern temperatures and adequate rainfall, but is addressing other natural disaster potential from increased storm severity and flooding with planned culvert and bridge replacements, as well as a hardening of the electric grid to protect against excessive winds and winter snow and ice.

c. Criterion #3 Equity, Community Engagement, and Justice⁴⁰

1) Equity Analysis. Bayfield County wants equitable investments in transportation electrification and will ensure benefits are applied to all communities, not just early adopters. Therefore, the Project's first planning stage was to identify well-dispersed geographical EVSE locations throughout the County. After technical feasibility was determined by visiting each site with Xcel Energy to guarantee adequate power requirements, each community was engaged. ACEEE's "Siting EVSE with Equity" by Peter Huether, Table 5 "Abbreviated spectrum of community engagement to ownership" was used as an equity analysis guide. The table is copied below for reference:

Table 5. Abbreviated spectrum of community engagement to ownership

Stance toward community	Scale	Impact	Community engagement goals	Message to community	Activities
Ignore	0	Marginalization	Deny access to decision-making process	Your voice, needs, and interests do not matter	Closed door meeting, misinformation
Inform	1	Placation	Provide the community with relevant information	We will keep you informed	Fact sheets, open houses, presentations, billboards, videos
Consult	2	Tokenization	Gather input from the community	We care what you think	Public comment, focus groups, community forums, surveys
Involve	3	Voice	Ensure community needs and assets are integrated into process and inform planning	You are making us think (and therefore act) differently about the issue	Community organizing and advocacy, house meetings, interactive workshops, polling, community forums
Collaborate	4	Delegate Power	Ensure community capacity to play a leadership role in implementation of decisions	Your leadership and expertise are critical to how we address the issue	MOUs with community-based organizations, community organizing, citizen advisory communities, open planning forums with citizen polling
Defer to	5	Community Ownership	Foster democratic participation and equity through community drive decision-making; Bridge divide between community and governance	It is time to unlock collective power and capacity for transformative solutions	Community-driven planning, consensus building, participatory action research, participatory budgeting, cooperatives

Source: Gonzalez 2019

Table 5

A listing of the 11 sites chosen and level of community engagement is represented in Table 6.

Site	Level of Engagement	Description of Engagement.
Port Wing-Johnson Store	5	Town of Port Wing engaged, public discussion at Town meeting and approved site, Site owner chose location.
Herbster – Herbster Park	5	Town of Clover engaged, public discussion at Town meeting, Town chose and approved site.

Cornucopia – North Star	5	Town of Bell, Harbor Commission, & Planning Commission engaged and discussed at public meetings, Town of Bell approved site.
Red Cliff – Legendary Waters Resort & Casino	5	Red Cliff led their own community engagement through multiple outreach efforts and chose their EVSE location.
City of Bayfield - Marina	5	Discussed at Public Works Committee, May 11 and Bayfield City Council May 17. Received public input. City Council approved site and ownership structure.
City of Washburn, Hansen’s IGA	5	Public comment at May 8 City Council meeting. June 12, 2023 City Council agenda for public discussion. Site owner chose site. City issued Letter of Support
Ashland – Ford/Chrysler Dealership	5	UW-Ext/CBR Ashland Charge Forward participant. 2-county community engagement. Site owner chose site.
Grandview General Store	5	Town of Grandview engaged, Bayfield County engaged for alternate site, Town discussed at Town meeting.
Drummond - Bear Crossing Store	5	Town of Drummond engaged, discussed with public input and approved site. Site owner chose location.
Cable	3	Town of Cable engaged, multiple potential site owners solicited.
Namakagon Resort	5	Namakagon Resort is in the Town of Namakagon. Town Board discussed at Town meeting and public input sought. Site owner chose site.

Table 6

The Climate & Economic Justice Screening Tool (CEJST) was used to identify disadvantaged communities within Bayfield County and assess Justice40 requirements. Tract Number 550079690100, population 3,033 was identified and shown in Table 7.

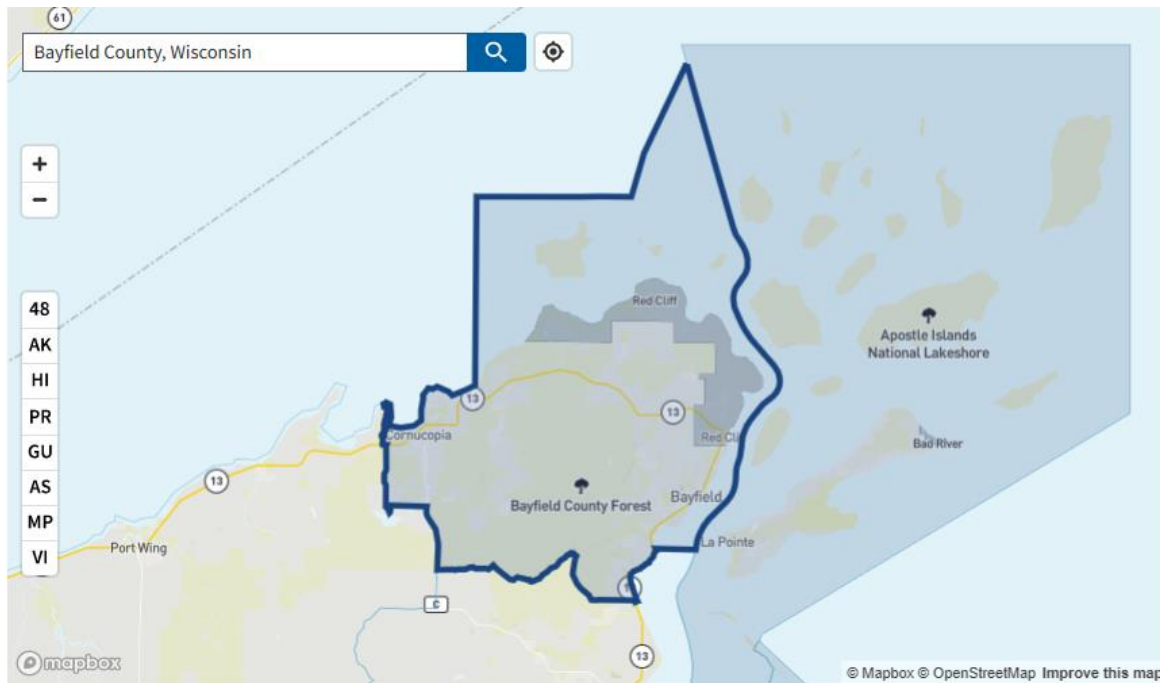


Figure 6 CEJST Tract 550079690100

Three of the charging sites are located within this census tract – Cornucopia, Red Cliff, and Bayfield. The population of the tract comprises 20% of the population of Bayfield County and is 40% Native American. Financially, 25% of the grant investment goes directly to this disadvantaged community with charging stations installed within their boundaries. The economic impact of placing charging stations within a disadvantaged community is proportionally greater than in a more affluent community, increasing the benefit to that community. This alone could increase the cumulative benefit to 40%. However, charging stations outside the census tract boundary are located within tribal ceded territory where usufructuary rights (hunting, fishing, and gathering) have been retained by the Treaties of 1837 and 1842. Reducing carbon emissions by electrifying the transportation sector sustains the tribe’s stewardship of their lands and therefore additional benefits of the Project are directly available to the Red Cliff community. The Project also benefit’s this tract by safely allowing EV travelers to reach their home destinations with reduced range anxiety.

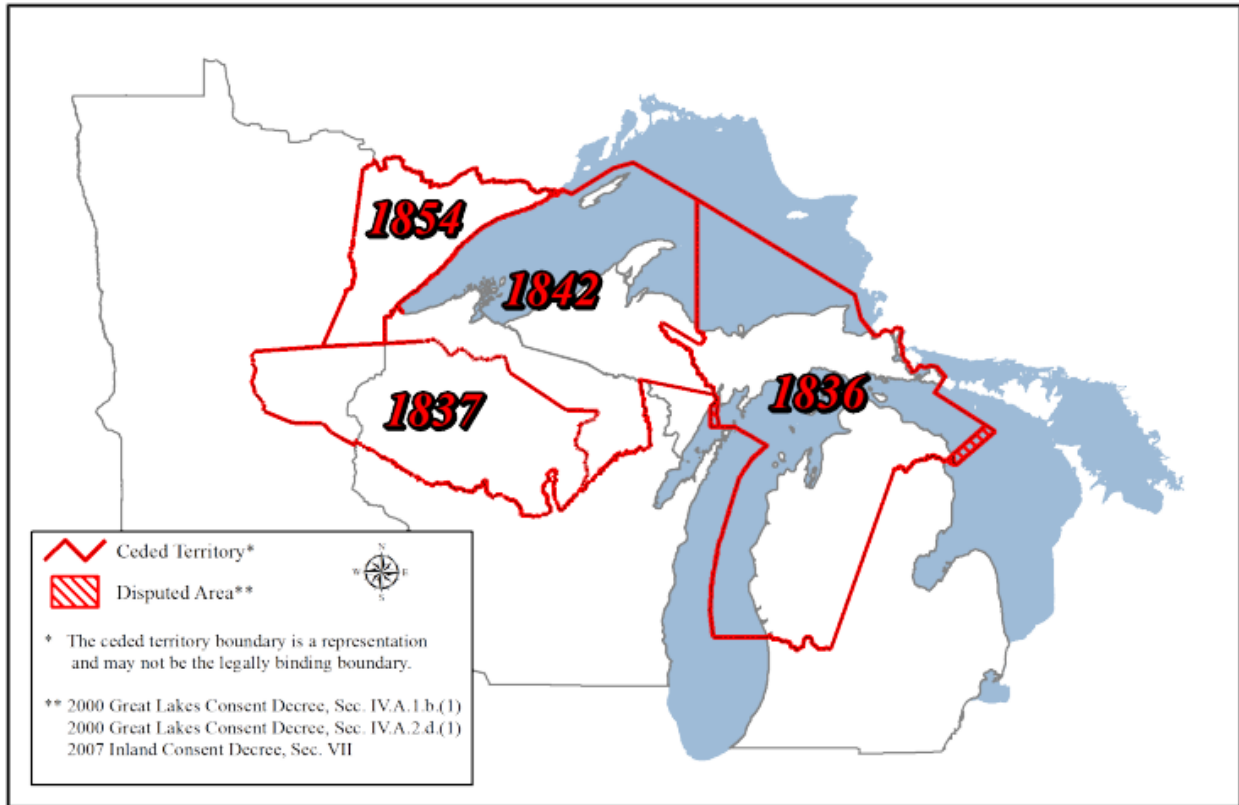


Figure 7 Ceded Territory courtesy Great Lakes Indian Fish & Wildlife Commission

To quantify the economic impact within the disadvantaged census tract further, the JOBS EVSE tool by Argonne National Laboratory was looked at and found it was not orientated toward such a small community. The smallest level of analysis was the State of Wisconsin. Therefore, other methods were used. A pilot study was referenced in the “Charging Forward” Rural EV Toolkit by the U.S. Department of Transportation that claimed level-2 charging customers spent on average 50 minutes more than non-charging customers at area stores and spent on average \$1 per minute in the stores (2012 dollars). Using this information, one level-2 station, being used for only one-hour per day, would generate \$21,900 of additional annual revenue for the site owner or nearby businesses. With 9 level-2 chargers in the disadvantaged census tract, this would mean just under \$200K per year. If the stations each averaged two hours per day, it would mean \$400K of additional revenue, 3 hours, \$600K, etc.

The cumulative economic, environmental, safety, and psychological benefits, directly or indirectly benefiting the disadvantaged communities, meet or exceed the Justice40 initiative.

2) Public Engagement throughout the project’s life cycle: Each Town, City, and Tribe was involved in the site selection process and the initial framework has been established to achieve ongoing public input. The Project is also supported by Bayfield County’s current 2023 revision of their Comprehensive Plan which is scheduled for completion in the summer/fall of 2023.

The University of Wisconsin Extension - Ashland County, in coordination with Bayfield County local nonprofit Cheq Bay Renewables, has initiated a community outreach program to advance the EV transition called “Ashland County Charges Ahead”. Ashland County is adjacent to Bayfield County and shares common demographics, so a regional approach to the Project has been forged. The diverse group of 34 individuals representing local government, Federal agencies, area nonprofits, educational institutions, tribal government, private businesses including two car dealerships and Kwik Trip, and concerned citizens make up the workgroup and will meet for 10 consecutive months to discuss EV infrastructure implementation strategies. The first workgroup session was in April 2023. Among the objectives are to seek public input to map proposed EVSE sites and capacities; to develop associated EV technical vocabulary; to explore financial strategies and ownership models; and to engage directly with local utilities, learn their language and both utility and state policies regarding EV charging. This level of community engagement will ensure a wide population representation, ongoing discussions, and also brings in the second Ojibwe tribe into the conversation, the Bad River Band of Lake Superior Chippewa Indians. Both Bad River and Red Cliff currently work with Cheq Bay Renewables on renewable energy projects as well as EV charging infrastructure and are represented in this project.

3) Increase opportunities, safety, and jobs: It was documented in the 2022 Bayfield County Fleet Fuel Analysis that significant economic savings could be realized from the electrification of the transportation sector. With electric vehicles approaching prices comparable to internal combustion vehicles, savings will be realized by the EV driver through reduced fueling and maintenance costs, thus increasing affordable transportation options. Carbon fiber construction, a component of most electric vehicles, offers advantages in high rigidity and enhanced safety. Electric cars on average are safer to drive than gasoline-powered cars as reported in the National Highway Traffic Safety Administration, which identified high collision safety test scores, better torque vectoring, less maintenance requirements, and less flammability as principal determinants. [Are Electric Cars Safer Than Gas Cars? - MyCarVoice](#). Each charging site will include a 5-year maintenance contract with a EVSE vendor who will have a certified workforce, enabling good-paying jobs. Xcel Energy’s professional staff will design and construct the facilities ensuring good union jobs.

4) Multimodal considerations: The various charging capacities at each charging site will provide a variety of charging options to support multimodal transportation. The appropriate capacity can be selected based not only on time allotted, but also vehicle owner preferences. As more vehicle types come to market, lower charging rates might be more appropriate for electric motorcycles or even electric boats that will someday cruise the shores of Lake Superior and regional inland lakes. EV charging sites will also be available for the area bus fleets, including the Bay Area Rural Transit (BART) and Red Cliff Miskwaabekaang Transit’s future electric buses, as well as electrified County fleet and local business fleet vehicles.

5) Challenges: Bayfield County’s rural setting is uniquely challenged to make the EV transition because of its large size (second largest county in WI) and low population density (11 people per square mile). Range anxiety, especially when winter conditions reduce battery range, can

only be addressed by providing adequate EVSE infrastructure density. Isolation because of a low EV battery on a rural winter road could be life-threatening and is exacerbated by poor cell coverage in a large portion of the County. Bayfield County's solution: an EVSE in every community.

EVSE will also provide economic development opportunities for area businesses and bring in much needed tax dollars for the County. Because of the natural beauty in its National Parks, National, State, & County Forests, Lake Superior and interior lakes, Bayfield County is a premier tourist destination, but the current gap in EV charging infrastructure reduces the economic development potential of the communities that support the tourist industry, and reduces County tax income. Second homeowners who regularly visit and stay for extended periods will also be able to utilize their electric vehicles more confidently in their travels to Bayfield County.

6) Advanced planning: This Project blends federal dollars with private investment to initiate economic development in each local community. When vehicle charging takes place, each site will have a captive audience to shop in the area, eat at local restaurants, attend cultural events, visit the local beach, or walk a local trail in a natural setting. Because of the large expanse of the County, many visitors will spend the night in area accommodations if adequate and safe EV access to the County is offered. By offering adequate charging facilities, downtown centers will be revitalized while offering pleasant rural settings and a variety of unique recreational and cultural activities to enjoy.

d. Criterion #4 Workforce Development, Job Quality, and Wealth Creation

1) The final design, engineering, and construction of the charging stations will be completed by Xcel Energy, a private company. Xcel will design the systems in-house with certified engineers. The construction will take place with union labor and will create 4-6 union positions throughout the construction season. Commissioning of the EVSE will be performed by Xcel Energy and the pre-qualified EVSE vendor using certified technicians. After commissioning, the EVSE will be operated and maintained by the same EVSE vendor who meets the requirements of the NEVI Standards and Requirements and has been chosen by Bayfield County through their Request for Qualifications process. The selected vendor will provide a certified workforce guaranteeing good-paying jobs and qualified workmanship. A criterion for selecting the successful vendor will be the inclusion of local workforce development partnerships that could include local electricians or other qualified individuals to troubleshoot simple issues and guarantee a short in-field response time. Further discussion about ZEF Energy's workforce, the preferred EVSE vendor, can be found in Appendix C – ZEF Energy's Proposal. It includes having employees living nearby to sites they service and trained through a "robust Service Pro training program".

One of the EVSE site hosts is the Ashland Ford/Chrysler dealership. Having adequately trained EV service technicians are critical for a smooth EV transition. Ford Motor Company has several certification programs required by its dealers including High Voltage Battery Repair, High Voltage Systems, and Electronic Systems certifications. Under each of the certifications there are a multitude of courses, including Hybrid Vehicle Components and Operation, Battery

Electric Vehicle Components and Operation, and even 2012 Focus Electric Components and Operation. The Ashland Ford/Chrysler shop foreman has completed all Ford training offered to date.

Chrysler has 4 levels of certification, level 4 being the highest. The Ashland Ford/Chrysler shop foreman has completed all levels, which includes courses such as, High Voltage Battery Service Considerations, Hybrid Operation and Diagnosis, Applied Electrical Diagnosis, 4xe Operation and Diagnosis, and many more. The car manufacturers are making a strong push for all dealers to be certified as quickly as possible and will not pay warranty claims unless a certified technician performs the repair.

The Red Cliff General Assistance and FoodShare Employment and Training programs will offer opportunities for partnerships with this project to train tribal members. ZEF Energy may work directly with the Program Directors to coordinate participation in training programs. This partnership could include increasing employment skills for up to 25 tribal members. Legendary Waters Resort and Casino maintenance staff will also receive training and skill building through ZEF Energy programs, including up to four tribal members.

Miskwaabekong Transit has two electric buses that are part of their door-to-door services throughout Red Cliff and the surrounding area. The transit provides access to employment, health care and education that is used by more than 15,000 riders annually. When waiting for a rider to schedule, they remain parked near the Legendary Waters, a central location within the reservation. The EV stations at Legendary Waters will provide drivers the opportunity to charge while waiting to be dispatched and not needing to return to their bus facility that is not centrally located.

Bayfield County will have a project manager to oversee all aspects of the project and develop a tracking and reporting strategy/system. Table 7 lists the jobs created or sustained by this project.

Entity	Job Description	Number of Jobs
Xcel Energy	Engineer/Design	2
	Project Manager	1
	Construction Crew	4-6
	Administration	.5
EVSE Vendor	Project Manager	1
	Manufacturing jobs	3-4
	EVSE Technician	1
Bayfield County	Project Manager/Reporting	.75
Red Cliff	Casino Maintenance/Reporting/EVSE Training	4
Other Site Owners	Maintenance/Reporting	.25 *10
Total Jobs Created or Sustained		20-24

Table 7

2) Xcel Energy has done great work developing and attracting a diverse talent pipeline and providing a supportive atmosphere. In addition to offering employees opportunities to develop their skills and talents, they make it a priority to recognize employee achievements and foster a culture where people are respected and valued. **Xcel Energy was recently recognized by Forbes Magazine as a Best Employer in the World and Best Employer in the U.S.**

Xcel Energy has an in-house apprenticeship program which is regulated and certified by the State of Wisconsin. The programs offer four years of training and are geared toward the different skills required in each department within the company. Most of the workforce is union, although it is not mandatory. Each employee has a free and fair choice to join a union and union dues are optional for in-house employees, although almost all participate. Subcontractors must have union employees.

Even through the pandemic, Xcel continued to build a robust, diverse talent pipeline in 2021 by employing 185 college seniors, graduate students, and law clerks as interns. Among these interns, 34% were women and 27% were ethnically or racially diverse. Through established partnership programs, they also hired a diverse group of high school interns.

Northwoods Technical College is part of the “Ashland County Charges Ahead” community initiative mentioned in Criterion 3 (2). They have an Electrician Construction program in place which includes a state-certified apprenticeship training program. Completion of the program achieves journey-level status and offers on-the-job training combined with classroom instruction. When selecting the EVSE vendor and their 5-year maintenance program, priority will be given to a contractor that includes an apprenticeship program. A partnership between the selected vendor and Northwoods Technical College will be encouraged.

3) Xcel Energy has long recognized the importance of having a diverse workforce that reflects the communities they serve. Chairman, President and CEO Ben Fowke signed the CEO Action for Diversity and Inclusion, a pledge that declares their commitment to improving diversity and inclusion at Xcel Energy.

Xcel has also been named a top corporation for lesbian, gay, bisexual, transgender and queer/questioning (LGBTQ) equality by earning a perfect score on the Human Rights Campaign’s 2018 Corporate Equality Index (CEI). Xcel Energy received the honor by acquiring the full 100 points on the CEI, their second consecutive year with a perfect score, which also earns them the distinction of “Best Places to Work for LGBTQ Equality.” The company has been rated on the CEI for 15 years. The Human Rights Campaign named Xcel Energy one of the Best Places to Work for LGBTQ Equality in early 2022, with a perfect score on its Corporate Equality Index for the sixth consecutive year.

A diverse and inclusive workplace has significant impacts on the retention and productivity of employees. According to the Human Rights Campaign Foundation in their study – The Cost of the Closet and the Rewards of Inclusion opens in a new window – a striking 51% of LGBTQ

workers still hide their identity from co-workers, and employee engagement and productivity suffer in an unwelcoming environment. Conversely, LGBTQ employee retention is strengthened in an accepting and inclusive environment. Xcel Energy has demonstrated its commitment and core values by maintaining their perfect score.

As a result of Xcel's commitment to diversity, female representation increased 6% and diverse representation increased 5% over the past three years among their senior leadership, including all vice presidents and above. An incentive-based metric was added to the corporate scorecard in 2021, tying a portion of incentive pay to diversity, equity and inclusion. Xcel achieved all metric targets set for the year, which focused on the use of diverse interview panels in the hiring process, implementation of executive sponsorships, and employee feedback on inclusion in the workplace.

ZEF Energy is an affirmative action, equal opportunity employer. Their website posts job openings that clearly states they are looking for a diverse array of people and welcome applications from all walks of life and types of professional experience. ZEF Energy's Affirmative Action Certification is included in Appendix C.

ZEF Energy is owned by employees and over 30 Electric Cooperatives. There is no greater ownership model that promotes democracy, diversity, and inclusion. The company is literally owned by tens of thousands of people and has a democratic process in place through the cooperative system for democratic input.

4) Xcel Energy promotes local inclusive economic development through their inclusive hiring practices, intern and apprenticeship programs, and utilizing union labor for both in-house and when hiring subcontractors. ZEF Energy promotes local inclusive economic development through its affirmative action plan, hiring local Service Pro technicians, manufacturing its own product line locally in Wisconsin and through its unique ownership model which allows employees and cooperative members with direct democratic input. Some of the relevant guiding principles of a cooperative are economic participation, open and voluntary membership, democracy, and concern for community.

e. Criterion #5 CFI Program Vision

The Project will equitably expand EV charging infrastructure throughout the County in a variety of site-ownership types giving opportunity to small rural Towns, Cities and Tribal communities. The sites were selected through community engagement and represent a diverse set of locations including a Tribal business, privately-owned businesses like a car dealership, grocery store, a resort, and convenience stores, and small Town and City government sites near the lakeshore of Lake Superior. The sites offer users the opportunity to explore small-town Northern Wisconsin, go for a walk on the beach, shop for groceries, attend cultural events, visit museums or libraries, or enjoy local cuisine in a safe and non-threatening environment.

In addition, the Project supports the focus area in Section D.2.i (3) & (4) by supporting multi-purpose EV charging use in a rural community for a variety of vehicle types and uses that include local residential vehicles, business fleets, tourist vehicles, rural public transit, and future County highway, squad, and courthouse fleets. BART and Miskwaabekaang Transit each have two electric buses on order. Bayfield County has three F150-Lightning pickup trucks on order and is considering more vehicles for its squad and courthouse fleets once EV charging infrastructure is put into place. Norvado Cooperative is developing its fleet strategy.

D.2 iv, Project Readiness and Environmental Risk:

Bayfield County has worked extensively with Xcel Energy and the County's Towns, Cities, Tribes, community members and nonprofits, and all proposed site owners to ensure project readiness.

Xcel Energy has completed preliminary site analysis, site maps, and preliminary design including cost estimates for the 11 sites. Xcel's in-house engineering team will complete final design and engineering once the project is awarded, guaranteeing a safe and professionally designed project. Xcel Energy will also be responsible for turnkey installation upon hand-off to the selected EVSE pre-qualified company once construction is complete. Included with the EVSE is 5-years of fee-free service for operations and preventative maintenance. Having Xcel Energy provide professional design, engineering, and installation services guarantees adequate power supply and the highest safety standards.

Of the eleven sites, eight are privately owned, two are owned by local units of government, and one is owned by the Red Cliff Band of Lake Superior Chippewa. No ROW acquisition is necessary. The project sites were selected based on power availability, safety considerations, and space requirements. Many of the rural locations had limited options to satisfy these requirements. Once tentative sites were selected, local units of government were engaged to seek input through public meetings. Planning and harbor commissions were involved in decision making with final decisions by Town Boards and the Red Cliff Band. Public agendas and minutes are available for public viewing. Red Cliff's process included planning administration and approval through its Tribal Council. Local nonprofits, like Cheq Bay Renewables, attended many public meetings and solicited support from stakeholders and private businesses. The project's goals are consistent with Bayfield County's Comprehensive Plan which is currently under revision and will be finalized in the summer/fall of 2023.

The project has been discussed and public input sought by:

- Bayfield County Executive Committee, May 11, 2023
- Bayfield County Board of Supervisors, May 30, 2023
- Town of Bell, May 9, 2023
- Town of Clover, April 25, 2023
- Town of Port Wing, April 28, 2023 and June 5, 2023
- Town of Grandview, May 10, 2023
- Town of Drummond, May 9, 2023
- Town of Namakagon, June 13, 2023

- City of Bayfield, May 11 Public Works, May 17 City Council
- City of Washburn, May 8, and June 12, 2023 City Council
- Red Cliff Planning administration, various dates and initiatives listed below

Project risks include inflationary pressures when planning system costs a year in advance. A 10% contingency fund is included in the budget to mitigate these pressures.

Community engagement was extensive and is ongoing. Firm commitments from the site owners will not be required until the grant is awarded and final design commences. Ongoing public engagement continues through the UW-Extension and Cheq Bay Renewables' "Ashland Charges Forward" initiative, which has an established workgroup of 43 entities including local units of government, businesses, utilities, State resource groups, and interested citizens who have joined to meet monthly for 10 months. Each month has a guest speaker and focuses on an aspect of the EV transition. Two of the 10 meetings have been completed to date.

In 2019, Red Cliff was awarded Economic Development Administration funding through the U.S. Department of Commerce to complete master planning of their commercial corridor (Hwy. 13) and shovel-ready business park site, including and adjacent to the Legendary Waters Resort & Casino and the Buffalo Bay Convenience Store and Gas Station. This included several community engagement activities in 2021 with over 100 individual community members providing input through 1) focus groups with youth, elders, business owners, tribal leaders; 2) online surveys; 3) an online social pinpoint interactive mapping tool; 4) open house for public input; and 5) administrative evaluation of existing community input data. Some of the key priorities supporting the electric vehicle services expansion were improving traffic safety, including sidewalks and accessibility, and preserving and respecting the natural beauty of Lake Superior and Red Cliff lands. Other tribal plans recently completed that included tribal input and data collection are the 2023 Red Cliff Comprehensive Plan, 2021 Economic Diversification Strategy, 2020 Treaty-Natural Resources Comprehensive Plan, and 2019 Tourism Plan; all of these plans support further economic development of their commercial corridor and protecting natural resources by reducing the Tribe's carbon footprint.

The project is equitable in that it is dispersed throughout the County and offers services to all residents and visitors. Each EV charging station will have contactless payment methods included and special attention is being paid to areas with limited cell coverage. Solutions have been established to provide NFC/RFID technology for paying customers, and hardwired or wireless internet for the EVSE will be utilized where needed.

Once awarded, final site selection will be confirmed through contractual obligation between Bayfield County and the proposed site owners. Final design and engineering will take place in the winter/spring of 2023-2024 with installation in the summer of 2024. Installation should be complete by the fall of 2024 and the 5-year service agreements will begin.

Bayfield County issued a Request for Qualification and Cost Estimate on April 25, 2023 to solicit qualified EVSE and companies that could operate and maintain them. Proposals were received

on May 10, 2023 and 2 companies were accepted as qualified along with their proposed EVSE. All EVSE met 23 CFR Part 680 requirements. Priority will be given to one of these 2 companies once construction is eminent, likely in the spring of 2024. ZEF Energy is the preferred vendor at this point.

It is anticipated that NEPA approval will not be required for this project because the site work will be completed by Xcel Energy, a private company. State, County, Town, City, and Tribal permits may be required depending on the site locations, and will be applied for upon grant award.

Site maps are included in Appendix D

Xcel Energy achieved a high score, 90 of 100, on the Disability:IN survey, a comprehensive non-profit benchmarking tool for disability inclusion in the workplace. Xcel's workforce as well as the Project's EV charging equipment is available and accessible to the disabled and impaired.

List of Appendixes

Appendix A Road Map of Bayfield County

Appendix B Example of Xcel Energy's Demand Limiter on Utility Rates

Appendix C ZEF Energy Proposal and Affirmative Action Certification

Appendix D Xcel Energy Site Maps

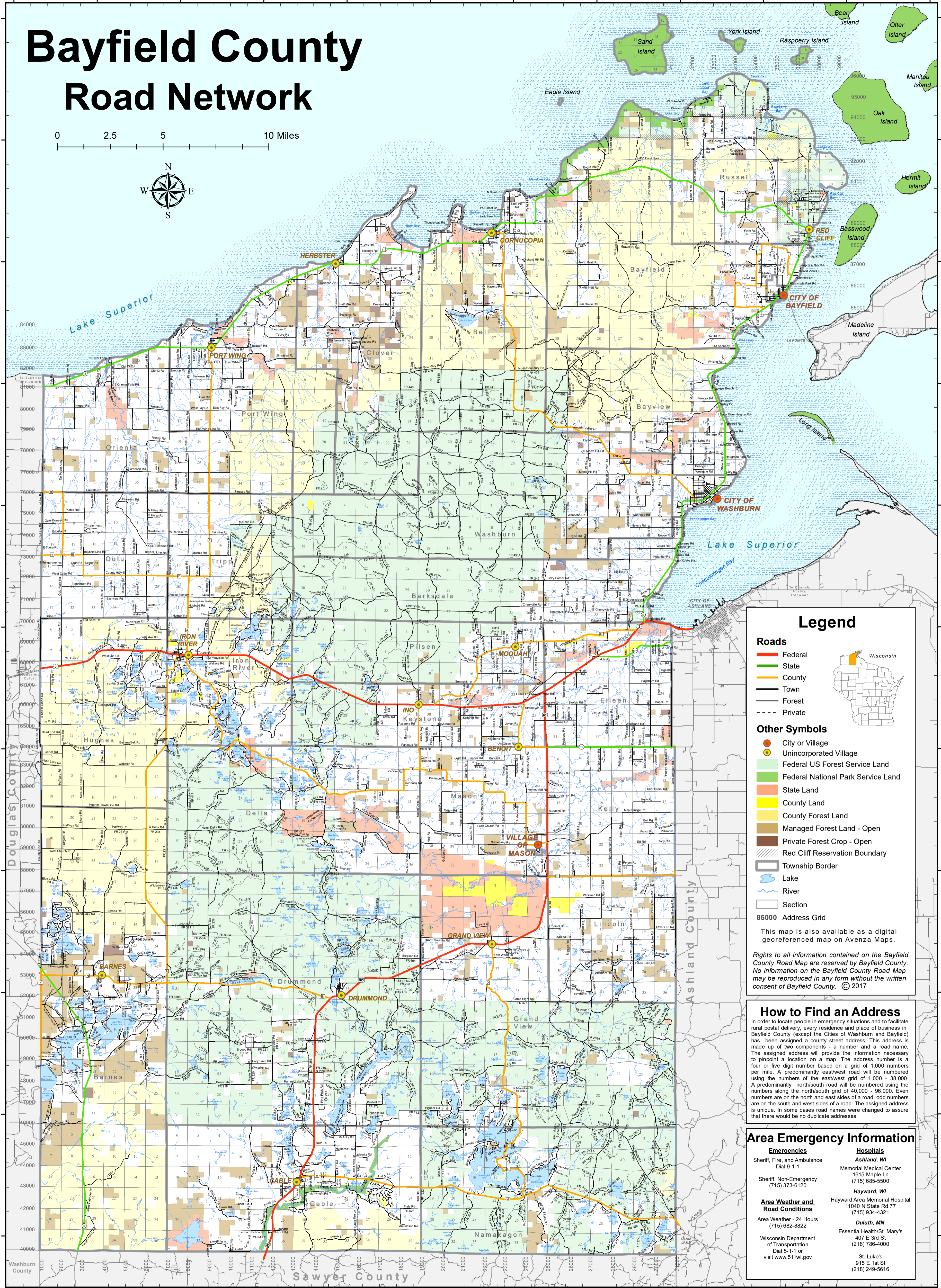
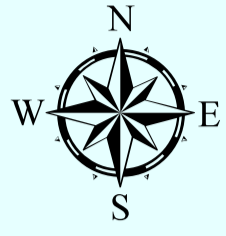
Appendix E Jolma Electric Lighting Estimate

Appendix F Letters of Intent/Support/Resolutions

- 1) Bayfield County Resolution
- 2) City of Washburn Letter of Support
- 3) Xcel Energy Letter of Support
- 4) Red Cliff Band of Lake Superior Chippewa
- 5) Legendary Waters Casino and Resort
- 6) Ashland Ford-Chrysler Letter of Support
- 7) City of Bayfield Letter of Support
- 8) Town of Bell, Wisconsin
- 9) Town of Clover, Wisconsin
- 10) Town of Port Wing, Wisconsin
- 11) North Star, Inc. Letter of Intent

Bayfield County Road Network

0 2.5 5 10 Miles



Legend

Roads

- Federal
- State
- County
- Town
- Forest
- - - Private

Other Symbols

- City or Village
- Unincorporated Village
- Federal US Forest Service Land
- Federal National Park Service Land
- State Land
- County Land
- County Forest Land
- Managed Forest Land - Open
- Private Forest Crop - Open
- Red Cliff Reservation Boundary
- Township Border
- ~ Lake
- ~ River
- Section
- 85000 Address Grid



This map is also available as a digital georeferenced map on Avenza Maps.

Rights to all information contained on the Bayfield County Road Map are reserved by Bayfield County. No information on the Bayfield County Road Map may be reproduced in any form without the written consent of Bayfield County. © 2017

How to Find an Address

In order to locate people in emergency situations and to facilitate rural postal delivery, every residence and place of business in Bayfield County (except the Cities of Washburn and Bayfield) has been assigned a county street address. This address is made up of two components - a number and a road name. The assigned address will provide the information necessary to pinpoint a location on a map. The address number is a four or five digit number based on a grid of 1,000 numbers per mile. A predominantly east-west road will be numbered using the numbers of the east-west grid of 1,000 - 38,000. A predominantly north-south road will be numbered using the numbers along the north/south grid of 40,000 - 96,000. Even numbers are on the north and east sides of a road; odd numbers are on the south and west sides of a road. The assigned address is unique. In some cases road names were changed to assure that there would be no duplicate addresses.

Area Emergency Information

Emergencies		Hospitals	
Sheriff, Fire, and Ambulance	Dial 9-1-1	Ashtand, WI	Memorial Medical Center
Sheriff, Non-Emergency	(715) 373-6120		1615 Maple Ln (715) 685-5500
		Hayward, WI	Hayward Area Memorial Hospital
			11040 N State Rd 77 (715) 934-4321
		Duluth, MN	Essentia Health/St. Mary's
			407 E 3rd St (218) 786-4000
			St. Luke's
			915 E 1st St (218) 249-5616

Area Weather and Road Conditions
 Area Weather - 24 Hours
 (715) 682-8822
 Wisconsin Department of Transportation
 Dial 5-1-1 or visit www.511wi.gov

Appendix B - Effect of Demand Limiter on Demand Chargers with Xcel Energy Cg-9 Tariff

Cg-9 Secondary Rates (2023 Effective)											
Customer Charge	\$180.00	per month	Blend Seasonal								
On-Peak Demand Summer	\$13.00	per kW	\$11.67								
On-Peak Demand Winter	\$11.00	per kW									
Customer Demand	\$3.50	per kW									
			Blend Seasonal								
On-Peak Summer	0.0885	per kWh	\$0.083								
Off-Peak Summer	0.0538	per kWh	\$0.054								
On-Peak Winter	0.0800	per kWh									
Off-Peak Winter	0.0538	per kWh									
<i>Excluding ECAC</i>											
Charging Equipment											
Charging Capacity	200	kW								Average \$/kWh	
									Hypothetical		Hypothetical
				80%	20%	100 Hours Use	150 Hours Use	100 HU	150 HU	100 HU	150 HU
Hours Use	Load Factor	kW	kWh	On Peak kWh	Off Peak kWh	Limited kW	Limited kW	Bill	Bill	Bill	Bill
18	2.50%	200	3,650	2,920	730	37	24	\$1,015	\$830	0.28	0.23
37	5.00%	200	7,300	5,840	1,460	73	49	\$1,849	\$1,480	0.25	0.20
55	7.50%	200	10,950	8,760	2,190	110	73	\$2,684	\$2,131	0.25	0.19
73	10.00%	200	14,600	11,680	2,920	146	97	\$3,519	\$2,781	0.24	0.19
91	12.50%	200	18,250	14,600	3,650	183	122	\$4,354	\$3,431	0.24	0.19
110	15.00%	200	21,900	17,520	4,380	200	146	\$4,900	\$4,081	0.22	0.19
128	17.50%	200	25,550	20,440	5,110	200	170	\$5,181	\$4,731	0.20	0.19
146	20.00%	200	29,200	23,360	5,840	200	195	\$5,463	\$5,382	0.19	0.18
164	22.50%	200	32,850	26,280	6,570	200	200	\$5,744	\$5,744	0.17	0.17
183	25.00%	200	36,500	29,200	7,300	200	200	\$6,025	\$6,025	0.17	0.17
201	27.50%	200	40,150	32,120	8,030	200	200	\$6,306	\$6,306	0.16	0.16
219	30.00%	200	43,800	35,040	8,760	200	200	\$6,587	\$6,587	0.15	0.15
237	32.50%	200	47,450	37,960	9,490	200	200	\$6,868	\$6,868	0.14	0.14
256	35.00%	200	51,100	40,880	10,220	200	200	\$7,149	\$7,149	0.14	0.14
274	37.50%	200	54,750	43,800	10,950	200	200	\$7,431	\$7,431	0.14	0.14
292	40.00%	200	58,400	46,720	11,680	200	200	\$7,712	\$7,712	0.13	0.13
310	42.50%	200	62,050	49,640	12,410	200	200	\$7,993	\$7,993	0.13	0.13
329	45.00%	200	65,700	52,560	13,140	200	200	\$8,274	\$8,274	0.13	0.13
347	47.50%	200	69,350	55,480	13,870	200	200	\$8,555	\$8,555	0.12	0.12
365	50.00%	200	73,000	58,400	14,600	200	200	\$8,836	\$8,836	0.12	0.12



Developing Higher Value Electric Fueling Solutions.



BAYFIELD COUNTY, WI REQUEST FOR QUALIFICATION and COST ESTIMATE FOR Electric Vehicle Supply Equipment (EVSE) For Bayfield County Electric Vehicle Charging Infrastructure Bayfield County, WI

Submitted by ZEF Energy
May 10, 2023

Applicant Information

ZEF Energy Inc.

Corporate Headquarters
323 North Washington Avenue
Minneapolis, MN 55401
612.688.4596
www.zefenergy.com

FEIN Number: 46-5332056

Please contact Chris Grunseth, Director of Sales, regarding any proposal related questions. For contract negotiations, please contact Chris Grunseth or Megan Hoye, Chief Development Officer.

Primary Contact

Chris Grunseth | Director of Sales
chris.grunseth@zefenergy.com
612.213.1504

Secondary Contact

Mark Kurilla | Senior Project Manager
Mark.kurilla@zefenergy.com
612.517.3532

Authorized Representative

**Megan Hoye | Chief
Development Officer**
megan.hoye@zefenergy.com
612.205.0922

SECTION 1 | Transmittal Letter

See attachment: “Letter of Transmittal_Bayfield CFI_May 2023”

SECTION 2 | EQUIPMENT SPECIFICATIONS

EQUIPMENT, CONNECTIVITY & WARRANTY

All EVSEs and DCFCs are in compliance with the National Vehicle Infrastructure Standards and Requirements (23 CFR Part 680) as summarized in Section 4 and Appendix B in the RFQ.

Level 2 Charging Equipment

Below is a table summarizing ZEF Energy’s commercial Level 2 charging hardware options that fits Bayfield County’s requirements for 15-19kW. Both product series outlined are made in the U.S. and are Buy America compliant by default or as a product option. ZEF’s Level 2 charging options are smart, 2-way communicating hardware with firmware and communications engineered for the most reliable connectivity, granular metering, and reliable data collection on the market. This hardware, as well as our DC fast charging options are connected through ZEF Energy’s own network and load management backend software, ZEFNET.

All ZEF Level 2 charging equipment offer 4 different communications paths: cellular, wifi, ethernet, and bluetooth. We rely first and foremost on our cellular connectivity as a first communications pathway. Via cellular ZEF is connected across five (5) cellular networks: Verizon, ATT, T-mobile, Sprint and US Cellular. ZEF has first tier contracts with each of these carriers and manages cellular connectivity on behalf of our customers to give them the best user experience and strongest uptime. Additionally, our chargers are programmed with autofailover features so that each charger can move between cellular networks if connectivity is inconsistent or weak. For data resilience purposes, we also supply store and forward capabilities so that data can be held locally for over 110 days if/when connectivity is lost. This ensures that billing, submetering, and data collection can occur without interruption.

ZEFNET Level 2 Charging Options

Model Series	Power & Current	Install Options	Unique Features	Applicability
ZEFNET Standard Series	15.4kW (80A) or 19.2kW (100A)	Wall or pedestal mounted	5-Year parts warranty, rugged plug design, brandable	(all commercial interior or exterior applications)
ZEFNET PRO Series	15.4kW (80A) per	Dual plug	Credit Card + RFID	(all commercial interior)

	plug	pedestal only	reader + HMI/Screen option, integrated cable management, brandable	or exterior applications)
--	------	---------------	--	---------------------------

**See attached cut sheets for more detailed information.*

>> ZEFNET Standard Series

The ZEFNET Standard Series is our base Level 2 product line. This hardware is available for wall mount or can be mounted to ZEF pedestals as single or double plug pedestal chargers. The enclosure is made from high durability polycarbonate, with overmolded rubber plugs (versus plastic) plugs for resistance to cracking or breaking from impact and pressure. This product comes 23' cords (standard) with wrap cord management allowing cords and plugs to be kept off the ground. Each charger is available for white labeling with complete customizable branding and artwork.



If a project/site requires driver authorization ahead of use, such as via payment or other acknowledgement, drivers are able to do so via the ZEFNET Charge app or one of the other networks and apps that ZEF has roaming agreements with (OCPI). The driver can authorize through a PIN or through requested access via email. Other public users can pay for charge via the app as well and the station or portfolio owners have the ability to change authorizations and cost of charge at any time.

>> ZEFNET PRO Series

Made in Wausau, WI, the ZEFNET PRO is our flagship hardware for public charging. This line offers a number of unique features compared to competing chargers on the market. The exterior enclosure is hot-dipped galvanized steel (also available in stainless steel) and has an integrated cable management system to keep plugs off the ground. The cords are 21' long and come with the same durable, overmolded rubber plugs as is available in the Standard Series. It also offers redundant communication capabilities between the two chargers, so there are built in equipment and communication redundancies. Each unit comes pre-assembled for quick installation and lower on-site labor costs.

The unit is 6'-10" tall with LED halo indicators for each of the plugs so that drivers can see from a distance if the charger is in use or available (as well as other statuses). Each unit can be ordered with or without the Human Machine Interface (HMI), which includes a full-color touch screen, four buttons, a credit card reader and RFID reader with integrated NFC payment capabilities (i.e. Apple



Pay and Google Pay). The screen offers configurable messaging and can support messaging in multiple languages. Full product white labeling is an option with a completely customizable look both front and back (13 SF of branding area in total).

>> ZEFNET Power Series

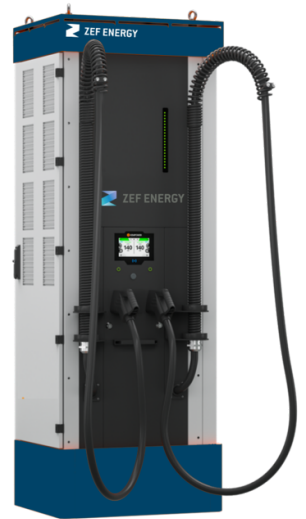
ZEFNET has integrations with three (3) different DC fast charger OEMs and has the flexibility to provide over 100 different DCFC hardware products. ZEF offers three primary categories of DCFC hardware options:

- All-in-one charging units
- Cabinet + Satellite(s)

All of our DCFC product offerings are Build America, Buy America compliant. Some options meet the full-scope of these BABA requirements today (under the NEVI waiver) while others will meet them by Q1 2024 ahead of the end of the waiver period.

All-In-One DCFC Products

- These units offer a variety of footprint options, from small to moderate in size. Due to the compactness of having only one piece of equipment, these often offer a cost-effective price point.
- We offer DCFC products that allow for service entry from the bottom, side, or back for flexible installation in existing conditions.
- All of our commercial hardware comes with a 5-year standard warranty, with the option to purchase a 5-year to 10-year warranty up front.
- ZEF's all-in-one products include modular and non-modular options, where an additional 25kW, 50kW or up to 350kW of additional power can be added after installation.
- We have high voltage (up to 1,000V) options as well as 'adaptive voltage' options, which means the equipment can offer 400V or up to 1,000V simultaneously, at plugs side-by-side.



Warranty

ZEF Energy's standard warranty offering is the best available in the market today. We offer a 5-year parts and labor warranty as standard with all of its commercial products, both DC fast charging and Level 2 equipment. Per the terms of that warranty, replacement parts will be provided under this agreement at no additional cost. For

our Level 2 hardware, a warranty of up to 10 years can be purchased up front. For our DCFC equipment, options of 7 or 10 years warranty are available for most products.

ZEF Energy is committed to offering a high-value solution. ZEF Energy's **5-Year Advantages™** bundles all standard services costs within the upfront price. The **5-Year Advantage™** includes a 5-year parts and labor warranty, along with 5-years of cellular connectivity, 5-years of network operations, and 5-years of technical support for drivers and station owners.

5 | YEAR ADVANTAGE™

Spot Network & Evie Car Share ZEFNET Capabilities Demonstrated

ZEF Energy partnered with the Cities of Saint Paul, Minneapolis, HOURCAR (car-share company), and Xcel Energy to deploy a 296-plug charging hub network across the two cities. This project had a number of unique requirements, which ZEF Energy has supported, from new customization options around parking fee set-up and special events, integration with municipal parking systems, as well as messaging for drivers on charger screens, and receipts for drivers paying via the app.



The ZEFNET Connect module within the ZEFNET back-end system allows for this complex network of partners to share data within their organizations while also selecting nuanced ways in which some data can be shared with other partners. This pertains to billing reports, network and field performance information, support tickets, and more.

PART 3 | EXPECTED AVAILABILITY and LEAD TIMES

Availability

The products recommended and quoted for this RFP are regularly available products from ZEF Energy and can be ordered at any point throughout the year.

Lead Times

Lead times for these products vary by product type. Current lead times are as follows:

- Standard Series Level 2 3 weeks
- Pro Series Level 2 4 weeks
- All-in-One DCFCs 16 weeks
- Cabinet + Satellite DCFCs 2-16 weeks

Lead times can fluctuate over the year but generally they stay around the above timeframes.

PART 4 | WORKFORCE, SERVICE, COMMISSIONING & UPTIME

Workforce

ZEF is an affirmative action, equal opportunity employer and we welcome applications from all walks of life and types of professional experience.

ZEF Energy is a Minneapolis, MN based company owned by employees and over 30 Electric Cooperatives in Minnesota and Wisconsin. Most of ZEF Energy's employees are located in Minnesota and have a manufacturing partner that produces 100% of ZEF's product line, the ZEFNET PRO, in Wausau, WI.

All ZEF Energy Service Pros are certified electricians or journeymen when required and local to sites to minimize mobilization and response times. These Service Pros are trained by ZEF Energy and certified to work on ZEF Energy and ZEF Energy partner DCFCs through a robust Service Pro training program.

All charging stations, level 2 and DCFC, have passed tests at the nationally recognized Intertek Lab and are UL certified charging stations. All connectors are compatible with NEVI requirements using CCS Type 1 for DCFC and J1772 for level 2. Each charging station meets ADA compliance standards.

Service Level Agreement Offerings

In addition to our standard warranty offering of 5-years, as part of our *5-Year Advantage*, ZEF Energy offers a number of Service Level Agreements through their Service Plus program. These service level agreements include annual preventative maintenance along with site-visit coverage for equipment failures that are covered under warranty (i.e. this does not include vandalism or the effects of extreme weather).

Proactive Equipment Monitoring & Support

ZEF actively monitors all chargers in the field, tracking a number of metrics to identify potential charger issues ahead of failure. Data is collected and monitored automatically by the ZEFNET backend, on a daily and monthly basis, to flag possible issues. As an issue is flagged, it is assigned a level of urgency (Low, Moderate or Critical) and it is turned over to the ZEF Support Team for further diagnosis. The following data is collected and automatically generated in ZEFNET for all DC fast chargers in the field.

Actively Monitored Data Points:

- Error code generation
- Cellular connectivity status – current status and time since last connection
- Network (Cloud) Connectivity – current status and time since last connection
- Main Switch active – powered-up status
- Cellular signal strength and variation – can monitor when cellular network changes might be needed or antennas added
- Power derating per expected power output (power profiles)
- Internal enclosure temperature readings
- Zero length (short duration) sessions
- Number of remote restarts requested over time
- Comments from drivers on Plug Share for all sites
- In-app driver reporting monitoring (in development; to launch Q2/Q3 2023)
- Entered data or metadata (from site & equipment inspection visits):
 - Charger exterior cleanliness
 - Power module cleanliness & date of last swap out
 - Filter cleanliness & date of last swap out
 - Plug & latch condition
 - Screen condition rating
 - Credit card reader usability rating

Issue Identification & Dispatch

With a ZEF Service Level Agreement, all relevant equipment is tagged with a Service Level Agreement ID number. This ID number identifies key factors about the quality of service to be delivered to this site, including in-field response time, the proximity of the ZEF Service Pro Partner, and proximity of spare parts to the identified service partner (i.e. on-site, local, regional). Performance metrics are then tracked per each unique SLA ID number regarding in-field response time and uptime. There are multiple scenarios that can occur where corrective actions are needed. A summary of the process and timeframe to notify/dispatch for corrective actions as issues arise is included below. Note, this list is not all-inclusive.

Scenario 1: When equipment is failing to deliver a charge.

a. When a DCFC is failing to deliver a charge, and it is determined that this is due to the failure of a part that is still under warranty, the ZEF Support Team will escalate the issue and complete the process of dispatching a work order to a locally designated ZEF Service Pro Network Partner within 24-48 hours. If this equipment has an SLA, the promised in-field response time (24-hours for a Tier 4 SLA) will be honored and communicated to the Service Pro Network Partner per every work order. This site visit will be covered by the SLA and the cost of the replacement part will be covered per the terms of the warranty. *Response time is measured from the time the work is confirmed as delivered to the Service Pro Partner to the time that they arrive on site.

b. When a DCFC is failing to deliver a charge, but the issue cannot be tied to a failing part that is still under resolution (e.g. because of vandalism), a work order will be dispatched to the local ZEF Service Pro Partner. If this equipment has an SLA, the promised in-field response time (24-hours for a Tier 4 SLA) will be honored and communicated to the Service Pro Partner per every work order. However, the labor cost

(per a negotiated rate between ZEF and the Service Pro Partner) and the cost of any parts not covered under warranty will be incurred by the station owner.

The greatest barrier to successfully fixing failing equipment promptly is lack of access to spare parts. Under the Tier 4 SLA, spare parts will be held locally - in most cases held by the Service Pro Partner directly. This is a unique aspect of ZEF's service offerings. With this, most station issues will be fixed within the promised response time. This approach allows ZEF to ensure high uptime and the intended uptime associated with the Tier 4 Service Level Agreement.

Scenario 2: When error messages or issues are flagged, but equipment is still delivering a charge.

When a DCFC is still delivering a charge successfully but is showing an error message or a driver comment regarding challenges with the DCFC equipment, a ticket will be generated automatically (same day) and the ZEF Support team will evaluate the issue. A resolution to the issue will be provided per this ticket within 24-72 hours (minus holidays) of the ticket being created. Ticketing history is visible to the station owner via the ZEFNET backend portal.

PART 5 | Cost Breakout Estimate

Description	Quantity	Unit Price	Total Amount
Level 3 150kW DCFC	13	\$97,289	\$1,264,757
Level 2: ZEFNET Pro, 15.4kW, with Credit Card Reader	31	\$10,575	\$327,825
*Level 2 Alternate: 19.2kW Dual Head Pedestal, Standard Series (no credit card reader)	31	\$9,198	\$285,138
Shipping DCFC	13	\$800	\$10,400
Shipping L2	31	\$250	\$7,750
5-Year Service Agreement (DCFC)	11 (per site)	\$14,588	\$160,468
5-Year Service Agreement (L2)	11 (per site)	\$3,000	\$33,000
Other: 5 years of network operations, connectivity, product warranty, 24/7/365	42	Included	Included

<i>US-based driver and owner support, and software are all included in the product pricing listed above.</i>			
Total			\$1,804,200

Notes: 1.) Alternate option not included in Total. This option is used to illustrate the availability of a 19.2kW dual head level 2 charger and its pricing. 2.) Taxes will be applied at the time of purchase based on state laws and exemption status of the purchasing entity.

PART 6 | REFERENCES

Project Name: MPCA VW Corridor Charging Project Phase 1 & Phase 2	Project Location: Across Minnesota (out-state areas)
ZEF Role: Prime Developer/Supplier/Operator (the owner for some sites)	Phase 1: 22 DCFC + 44 L2s Phase 2: 33 DCFC + 33 L2s
Partners: AID Electric & Community Electrification	Start Date: 2018 (Phase 1), 2021(Phase 2)
<p>Project Description 55 DCFC charging hubs installed outside of the 7-county metro, to be owned (in some cases) and operated by ZEF ongoing. Consisting of future-proofed sites that can accommodate future upgrades to higher power and unit counts. All equipment chosen for cold climate based on previous experience based on many years of operating assets.</p> <p>ZEF gained site control, negotiated rates with utilities (to ameliorate demand charges), gained approvals from city councils and planning departments in areas with low EV adoption. Full turnkey.</p> <p>Construction occurred during Minnesota winters, but with the bulk occurring in normal construction periods. Majority of projects constructed in public space owned by Cities, working closely with IOU, municipal, and cooperative utilities.</p> <p>Reference Contact Name: Rebecca Place Phone: (651) 757-2807 Email: Rebecca.place@state.mn.us</p>	

<p>Project Name: EV Spot Network & EVie Car Share project</p>	<p>Project Location: Saint Paul & Minneapolis (MN)</p>
<p>ZEF Role: Prime Installer/Supplier/Operator</p>	<p>Project Size: 140 dual port L2s + 13 DCFCs + additional L2s</p>
<p>Partners: S3 Inc and Aid Electric, City of Saint Paul, City of Minneapolis, Xcel Energy, HOURCAR</p>	<p>Start Date: 5/1/2018</p>
<p>Project Description Install, operate, and provide smart load control for 3000+ charging ports across two cities that will be utilized 50% by a share-share service (at night predominantly) and the rest of the time for public charging purposes to support those that have barriers to charging at their place of residency.</p> <p>ZEF Energy works closely with both cities and Xcel Energy to coordinate the provision of power and other site preparation requirements. ZEF will also work to manage charging costs over time (using TOU rates and seasonal demand charges) to provide the lowest charging cost to drivers and the lowest overhead for the cities. ZEF Energy is also to provide each City with equipment, software, and service/maintenance training to build in house capacity at each site (over a 5-10 year contract period).</p> <p>Reference Contact Name: Erin Kayser & Russ Stark Phone: 651-266-8989 Email: Erin.Kayser@ci.stpaul.mn.us russ.stark@ci.stpaul.mn.us</p>	

Project Name: Southern Minnesota Municipal Power Agency Charging Network	Project Location: 16 MN Cities
ZEF Role: Supplier/Consultant/O&M Providers	
Partners: AID Electric/S3	Start Date: 3/2020

<p>Project Description Hardware/Software Supply, site design, rate schedule consultation, ongoing O&M. 16 DCFC and 80 L2's across 16 municipalities in Southern Minnesota (+ Grand Marais). 16 Municipalities to own.</p> <p>The same cold weather considerations are put into hardware selection as the MPCA program. Installation occurring during summer. Some Municipal utilities use AID Electric for installation, all using ZEF/S3 for ongoing O&M.</p> <p>Reference Contact Name: Chris Schoenherr Phone: 507.251.6028 Email: cp.schoenherr@smmpa.org</p>

PART 7 | NETWORK, RELIABILITY, and RATING

Network Software Functionality

ZEF operates its own backend software platform. This network/platform is called ZEFNET and is OCPP 1.6 and OpenADR compliant. The network and cell connectivity has a greater than 99.5% uptime. ZEFNET hosts over 5,500 charging stations and provides station owners ongoing access to charging station session data, pricing controls, performance data, and permissions setting, as well as many other features. Fundamentally, the ZEFNET software was designed for utility users, to offer the most detailed pricing/billing creation tools, reporting tools,

metering integrations, and load management tools. Because of ZEF's mission to support beneficial EV load growth, all ZEF customers have ownership of their charging session data from day one (in perpetuity). This is provided at no extra cost and is part of ZEF's standard offering, as we wish to help utilities learn from their projects and programs.

ZEF operates chargers it sells and services on its own network. However, as an OCPP 1.6 compliant software, Bayfield County would have the option in the future to switch to another OCPP compliant network if that suited their needs better. This would be available to them after the end of the 5th year.

Below is a short overview of the functionalities of the ZEFNET networking software:

- Dashboard with visualized data around charging and load profile trends visualizations Set driver pricing (including taxes and fees)
- Permissions settings and partner data sharing (controlled by station owner/admin)
- Settings around dynamic power sharing across plugs
- Load management and load balancing *typically not relevant for DC fast charging
- Connectivity performance
- Charger ticketing, maintenance history, and uptime performance

Continuous Operations Supported

From a continuous operations standpoint, ZEFNET has extremely high network connectivity metrics. As a default, ZEF sets-up all chargers to fail-over into "free vend" mode (unless asked not to do so). This allows drivers to get a charge, even if an equipment issue is not yet resolved. Separately, the ZEFNET Charge App (one option for payment) has a "wallet" system. This requires that \$5 be loaded on the phone ahead of starting a charge to ensure that a driver doesn't walk away without starting a charging session. Further, if cell coverage is lost during a charging session, a driver can finish their transaction after the charging session has ended once they have regained connectivity.

ZEFNET Network Roaming

From a roaming and best practices perspective, ZEFNET has roaming across over 15 other networks and this will continue to expand. Currently ZEF chargers appear on the apps and maps of these other networks. In spring of 2023, ZEF will also be making the chargers from other network operators visible on the

ZEFNET Charge App. Key networks that ZEF chargers have "roaming" with include: ChargePoint, Shell Recharge, SemaConnect, Mercedes, Electric Circuit, and others.

It is important to note that the roaming efforts within the industry continues to be plagued by certain challenges, which requires two sides/operators to agree to terms of what OCPI modules they want to implement together, and then a one-time, significant effort needs to take place, to implement the roaming agreement.

It is ZEFNET's intention to accelerate additional roaming agreements as quickly as possible, but there is no way to know how long additional agreements will take to implement, and the willingness of others to want to roam on the ZEFNET network.

Outline of Certifications & Integrations

Requirement	How Compliant
OCPP Compliant Network	ZEFNET is an OCPP 1.6 compliant allowing Bayfield County to have the option of a different network operator in the future, if needed
OpenADR Compliant (not required)	Exceed Requirements: ZEFNET is OpenADR compliant, designed using this open protocol to allow for the most flexibility and integration with other software platforms.
Continuous Operations (even when no network connectivity)	<p>ZEFNET has extremely high network connectivity metrics (>99.5%). Additionally, ZEF Energy sets-up all chargers in “free vend” mode unless asked not to. This allows drivers to get a charge while at the charger. For charger connectivity this would be rare.</p> <p>Separately, the ZEFNET Charge App (one option for payment) has a “wallet” system. This requires that \$5 be loaded on the phone ahead of starting a charge to ensure that a driver doesn’t walk away without starting a charging session. Further, if cell coverage is lost during a charging session, a driver can finish their transaction after the charging session has ended once they have regained connectivity.</p>
Network Roaming	ZEFNET has roaming across over 12 other networks and this will continue to expand. Currently ZEF chargers appear on the apps and maps of these other networks. In spring of 2023, ZEF Energy will also be making these chargers (from other network operators) visible on the ZEFNET Charge App as well. Key networks included in our “roaming” network are: ChargeHub, ChargePoint, Mercedes, and others.
98% Uptime	ZEF Energy’s <i>Service Plus Tier 4 SLA</i> ensures that 98% uptime is measured and delivered. Response times requested by the end customer (MLGW) will be matched with a local ZEF <i>Service Pro</i> that is contracted to get on-site within 24-hours of the field request. Further, unique to ZEF, for sites that have our <i>Tier 4 SLA</i> , we stock parts with our <i>Service Pro</i> Partners so that they can make a ‘fix on the first visit’.

<p>Proactive Charger/Network Health Monitoring</p>	<p>ZEFNET tracks multiple charger-health stats in real-time to monitor abnormal charger behavior to inform proactive remote restarts or on-site visits ahead of failure. These data points also allow us to have the best view into when a charger is down ahead of a driver pulling up. Measurements include:</p> <ul style="list-style-type: none"> • Network (Cloud) Connectivity – time since last connection • Cellular Connectivity – time since last connection • Credit Card Reader Connectivity – time since last connection • Main Switch active – powered-up status • Plug Status – all plugs in active status • Internal cabinet or unit temperature – operating within a healthy temperature range (i.e. filters are clean) • Metadata with photographic validation of all historic on-site visits and scheduled maintenance
---	--

ZEFNET Software

Our operational software, ZEFNET, is a one-stop shop for both DCFC and L2 chargers as it pertains to:

- a.) Data acquisition and reporting
- b.) EV driver support ticketing and dispatch
- c.) Remote diagnosis of faults, remote restarting, and firmware updates
- d.) Load management and data feed integration (solar PV, battery storage, anything with an energy monitor upon it)
- e.) Driver access, price setting, and point-of-sale authorization (e.g. take credit card payments)
- f.) Controls configurable messaging to drivers via the ZEFNET Charge mobile app & supports integration with other charging mapping aggregators
- g.) Supports billing integration across multiple meter data management systems

All of the chargers will be viewed, controlled, and supported within a single dashboard and a system which can provide summary and individual charger data and operations. In total, ZEFNET contains eight (8) primary modules to allow for extensive control and data collection. Using the features of any module in combination with another module allows for sophisticated layering of capabilities. For example, load controls and schedules can be activated in combination to have scheduled load management. More detail around the capabilities of ZEFNET are outlined below.

Driver Payment Experience

Drivers have the ability to pay via more than six (6) methods.

- **Multiple Methods at the Charger:** Credit card via a credit card reader on each DCFC satellite where there is (1) credit card reader per (1) or (2) plugs. This reader also takes payment via NFC (e.g. Apple Pay or Google Pay) and from a ZEFNET provided RFID card.
- **Multiple App Options:** ZEFNET CHARGE App or other apps that belong to the networks or map aggregators that ZEF Energy has roaming agreements with. This includes ChargeHub,

ChargePoint, SemaConnect, Mercedes and others. This list continues to grow every 6 months as part of our expanding OCPI efforts.

Compensation / Remittance Process

For charging stations that will take payment to operate (e.g. Level 2 and DCFC public stations) ZEF will remit (pay forward) revenues received from drivers to the station owner or payee of the electric bill. The amount remitted will be the total amount of the payments taken from drivers minus a 10% transaction fee (a standard transaction fee) to cover credit card transaction fees. This arrangement (per the terms of the Compensation Agreement attached) will be initiated once a station has completed commissioning. Before payments can be remitted, the station owner will have to set-up an account in Bill.com, the platform we use for remittance. Remittance will occur on a monthly basis by default unless the station owner prefers a frequency of every other month or quarterly.

During the onboarding process, ZEF will work with the station owner (client) to set-up to enable monthly payments to happen immediately and easily upon the station “going live.”

PART 8 | Connectivity

Weak or Unreliable Service for Chargers

Every ZEF Energy Charger has the ability to connect to the cloud via cell, wifi, or ethernet. The charging stations can access a public wifi network as long as that network is in reach of the charging station or if a network is installed by an installer or other third party at the site. The DCFCs have access to three major wireless networks, T-MOBILE, ATT, and US Cellular. The Level 2 Chargers have access to four major networks, T-MOBILE, ATT, US Cellular, and Verizon.

Weak Cell Signal for Drivers

In the event a driver does not have a cell signal, they may access the charger through NFC, (Apple Pay or Google Pay) which accesses their phone wallet, or via the credit card reader (swipe, dip, or tap) on the chargers themselves.

AFFIRMATIVE ACTION/EQUAL EMPLOYMENT OPPORTUNITY (AA/EEO) POLICY STATEMENT

This statement is to affirm ZEF Energy policy on providing Equal Employment Opportunity (EEO) to all employees and applicants for employment in accordance with all applicable Affirmative Action Equal Employment Opportunity laws, directives and regulations of Federal, State and local governing bodies or agencies, including Section 183.04 of the Saint Paul Legislative Code (Human Rights Ordinance) and the Rules Governing Affirmative Requirements in Employment.

ZEF Energy will not discriminate against any employee or applicant for employment because of age, ancestry, color, creed, disability, familial status, genetic information (genetic testing, family medical history, and/or genetic services), marital status, national origin, public assistance status, race, religion, retaliation, retaliation by association, retaliation by opposition, sex, pregnancy, sexual or affection orientation.

ZEF Energy will maintain zero tolerance for harassment of or by any employee or applicant for employment because age, ancestry, color, creed, disability, familial status, genetic information (genetic testing, family medical history, and/or genetic services), marital status, national origin, public assistance status, race, religion, retaliation, retaliation by association, retaliation by opposition, sex, pregnancy, sexual or affection orientation. We will maintain an internal complaint procedure for complaints of such harassment, and will provide employees with contact information for federal, state and local enforcement agencies.

ZEF Energy will take Affirmative Action (AA) to ensure that all employment practices are free of such discrimination and harassment. Such employment practices include, but are not limited to, the following: hiring, upgrading, demotion, transfer, recruitment or recruitment advertising, selection, layoff, disciplinary action, termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship.

ZEF Energy fully supports incorporation of non-discrimination and affirmative action rules and regulations into contracts with subcontractors for goods and services.

ZEF Energy will commit the necessary time and resources, both financial and human, to achieve the goals of Affirmative Action and Equal Employment Opportunity.

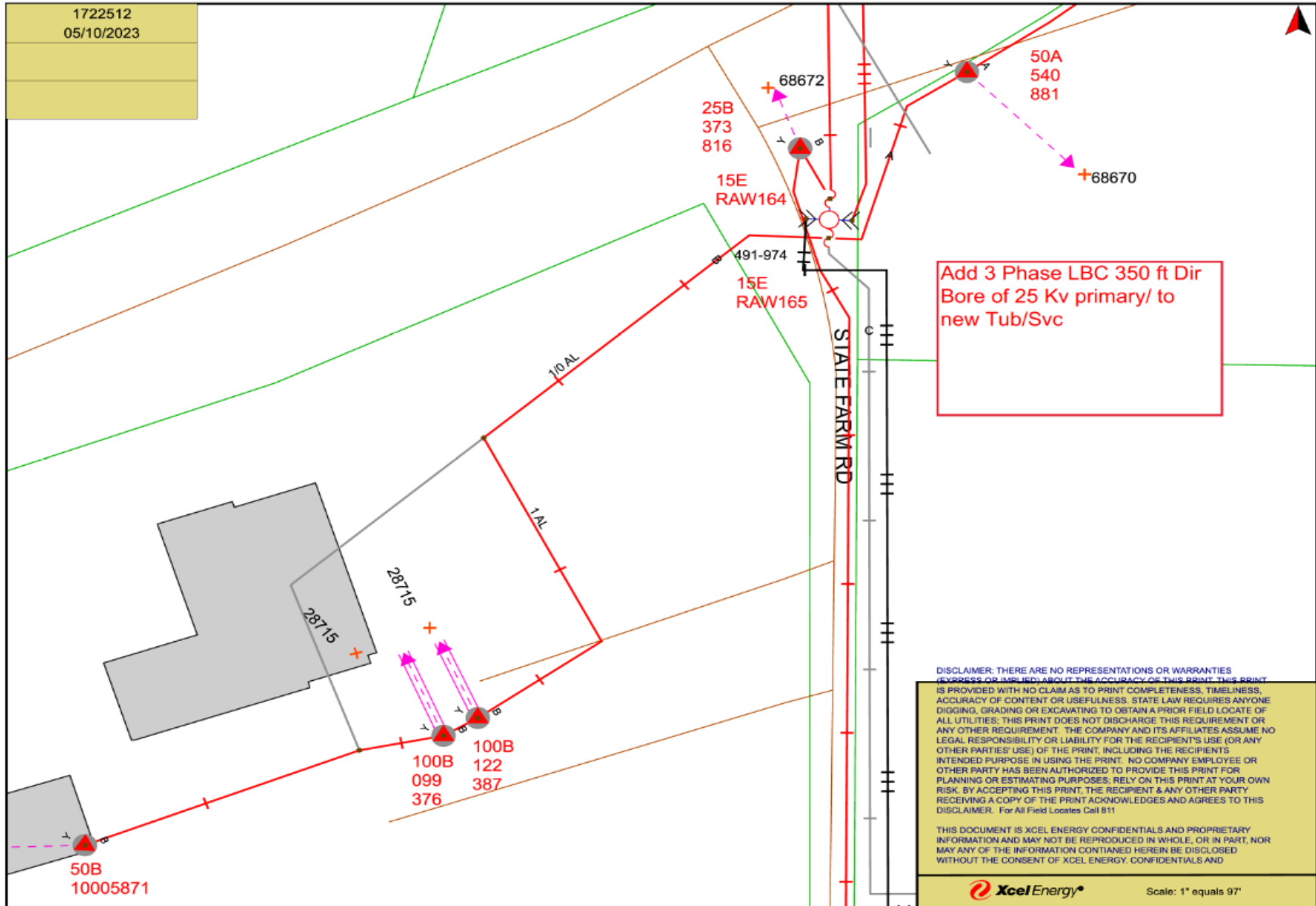
ZEF Energy will evaluate the performance of its management and supervisory personnel on the basis of their involvement in achieving these Affirmative Action and Equal Employment Opportunity objectives as well as other established criteria.

ZEF Energy has appointed Matthew Blackler as AA/EEO Manager to manage the Equal Employment Opportunity Program. His/Her responsibilities will include monitoring all Equal Employment Opportunity activities and reporting the effectiveness of this Affirmative Action Plan (AAP), as required by Federal, State and Local agencies. He/she will be given the necessary top management support and staffing to fulfill his/her job duties. The Chief Executive Officer of ZEF Energy will receive and review reports on the progress of plan. If any employee or applicant for employment believes he/she has been discriminated against, please contact Matthew Blackler at this address: 5325 West 74th Street, Suite 18 | Edina, MN 55439

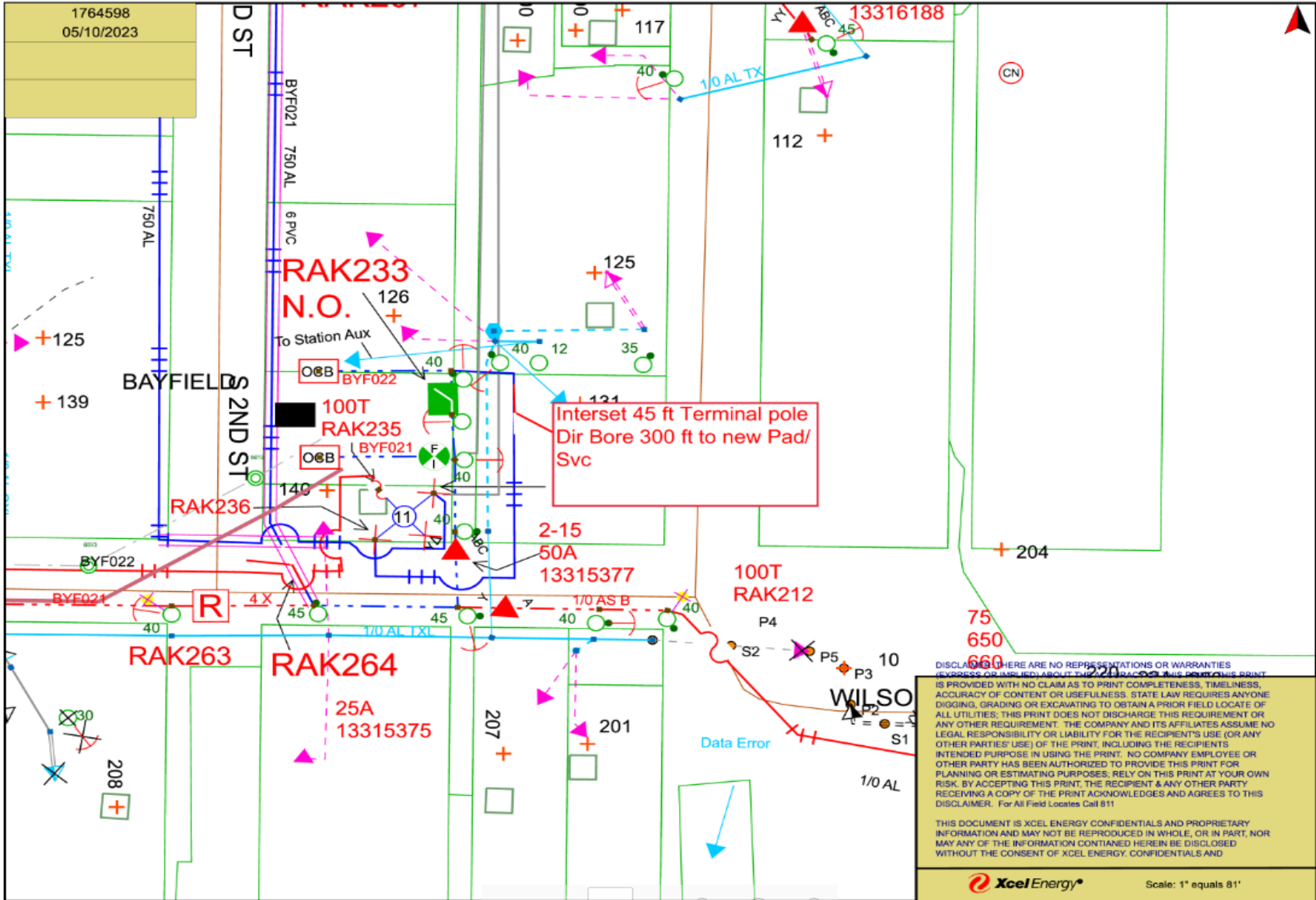
Matthew Blackler
Chief Executive Officer (Please Print)

Signature of Chief Executive Officer Date

Appendix D - Xcel Energy Site Maps



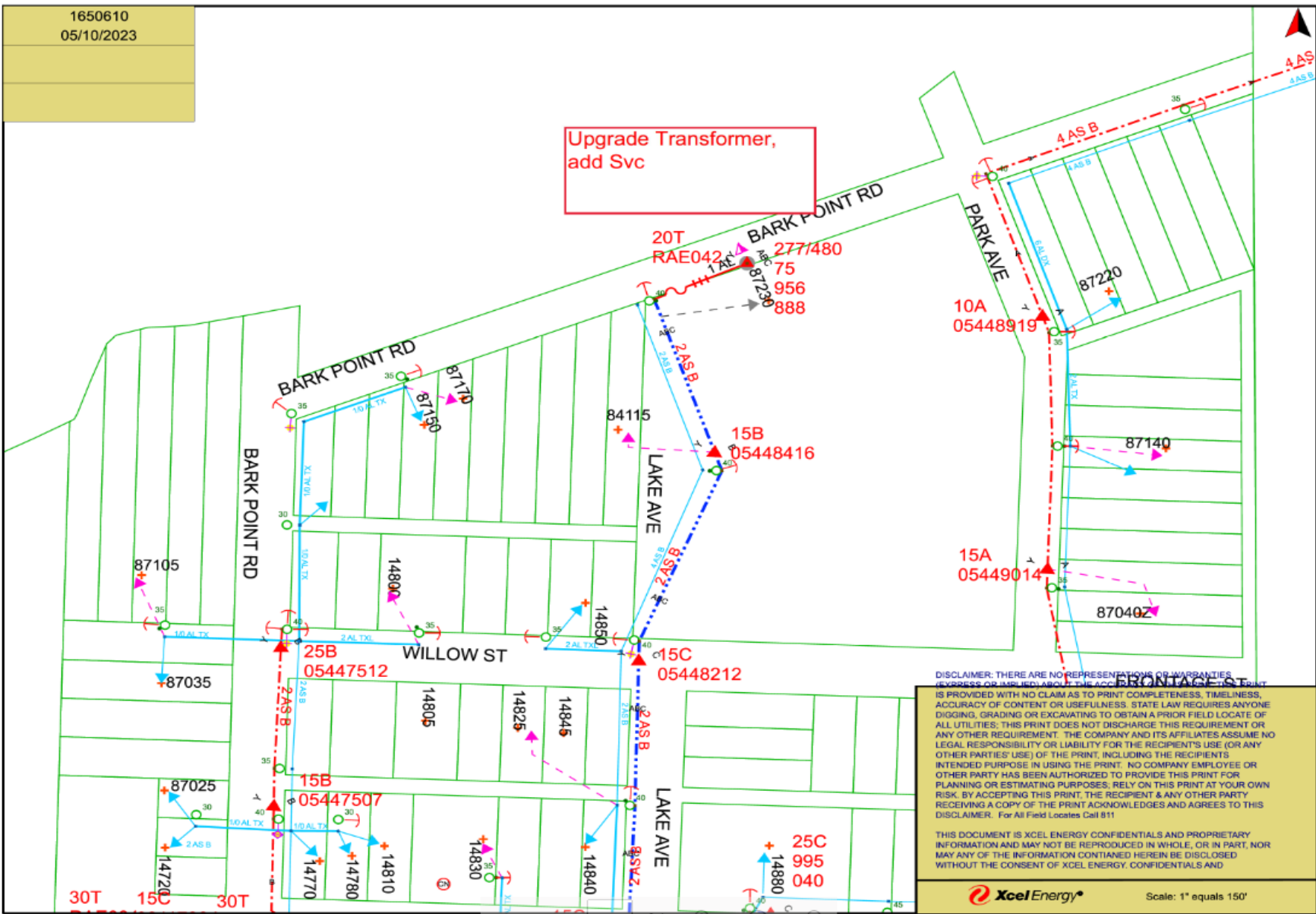
Ashland Ford/Chrysler



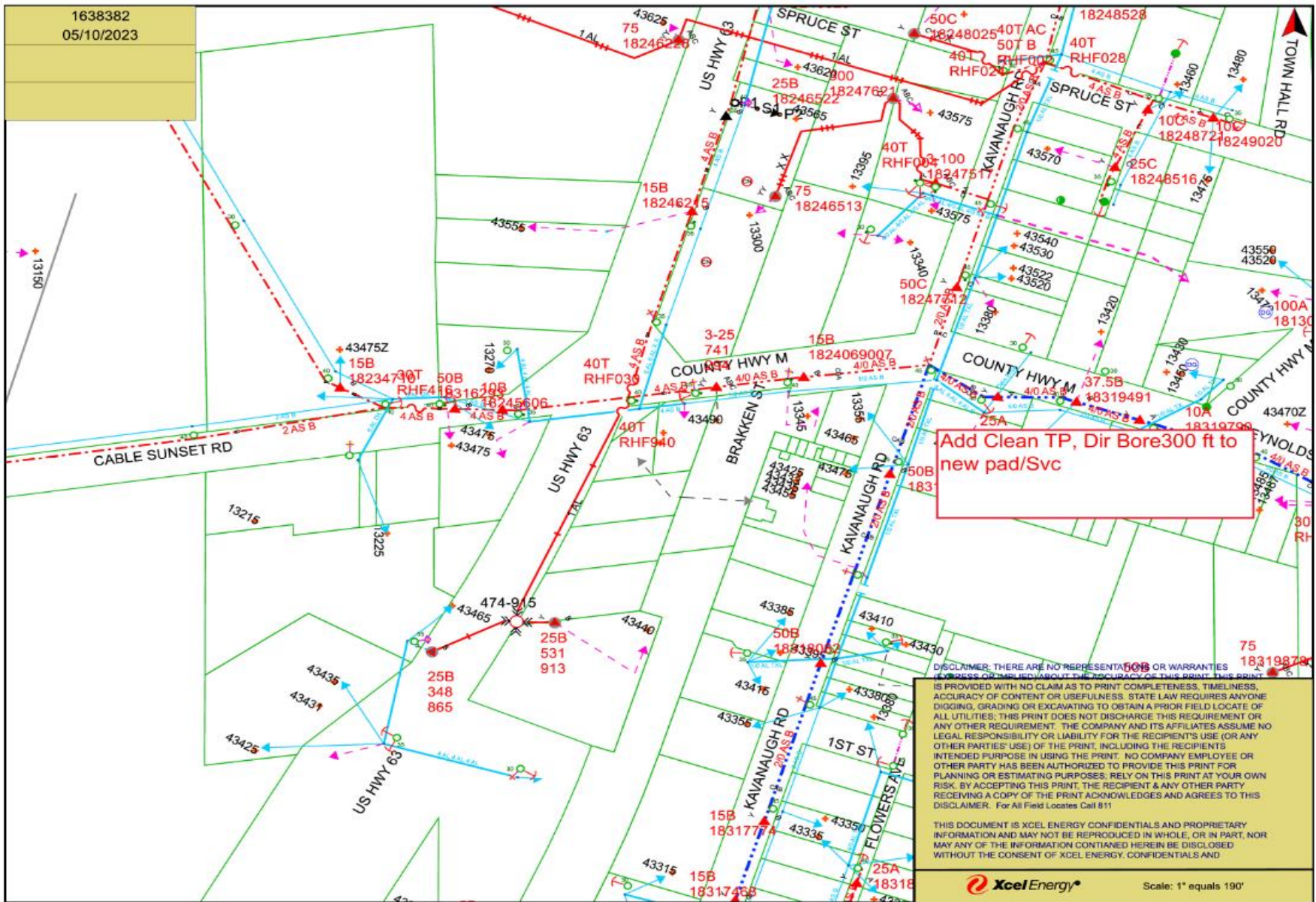
Bayfield Marina Park

1650610
05/10/2023

Upgrade Transformer,
add Svc

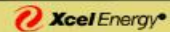


1638382
05/10/2023



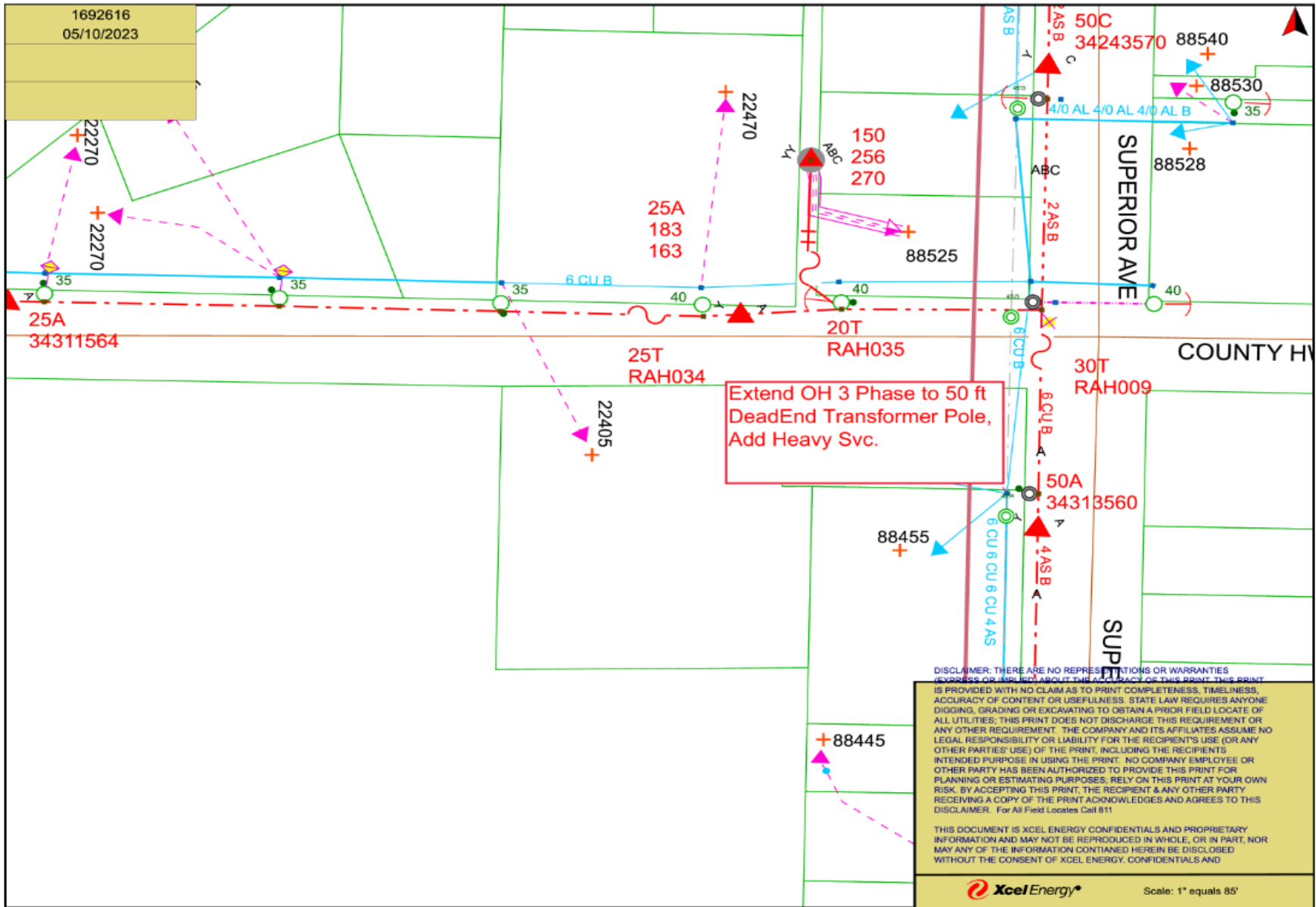
DISCLAIMER: THERE ARE NO REPRESENTATIONS OR WARRANTIES EXPRESSED OR IMPLIED AS TO THE ACCURACY OF THIS PRINT. THIS PRINT IS PROVIDED WITH NO CLAIM AS TO PRINT COMPLETENESS, TIMELINESS, ACCURACY OF CONTENT OR USEFULNESS. STATE LAW REQUIRES ANYONE DIGGING, GRADING OR EXCAVATING TO OBTAIN A PRIOR FIELD LOCATE OF ALL UTILITIES. THIS PRINT DOES NOT DISCHARGE THIS REQUIREMENT OR ANY OTHER REQUIREMENT. THE COMPANY AND ITS AFFILIATES ASSUME NO LEGAL RESPONSIBILITY OR LIABILITY FOR THE RECIPIENT'S USE (OR ANY OTHER PARTIES' USE) OF THE PRINT, INCLUDING THE RECIPIENT'S INTENDED PURPOSE IN USING THE PRINT. NO COMPANY EMPLOYEE OR OTHER PARTY HAS BEEN AUTHORIZED TO PROVIDE THIS PRINT FOR PLANNING OR ESTIMATING PURPOSES. RELY ON THIS PRINT AT YOUR OWN RISK. BY ACCEPTING THIS PRINT, THE RECIPIENT & ANY OTHER PARTY RECEIVING A COPY OF THE PRINT ACKNOWLEDGES AND AGREES TO THIS DISCLAIMER. For All Field Locates Call 811

THIS DOCUMENT IS XCEL ENERGY CONFIDENTIALS AND PROPRIETARY INFORMATION AND MAY NOT BE REPRODUCED IN WHOLE, OR IN PART, NOR MAY ANY OF THE INFORMATION CONTAINED HEREIN BE DISCLOSED WITHOUT THE CONSENT OF XCEL ENERGY, CONFIDENTIALS AND



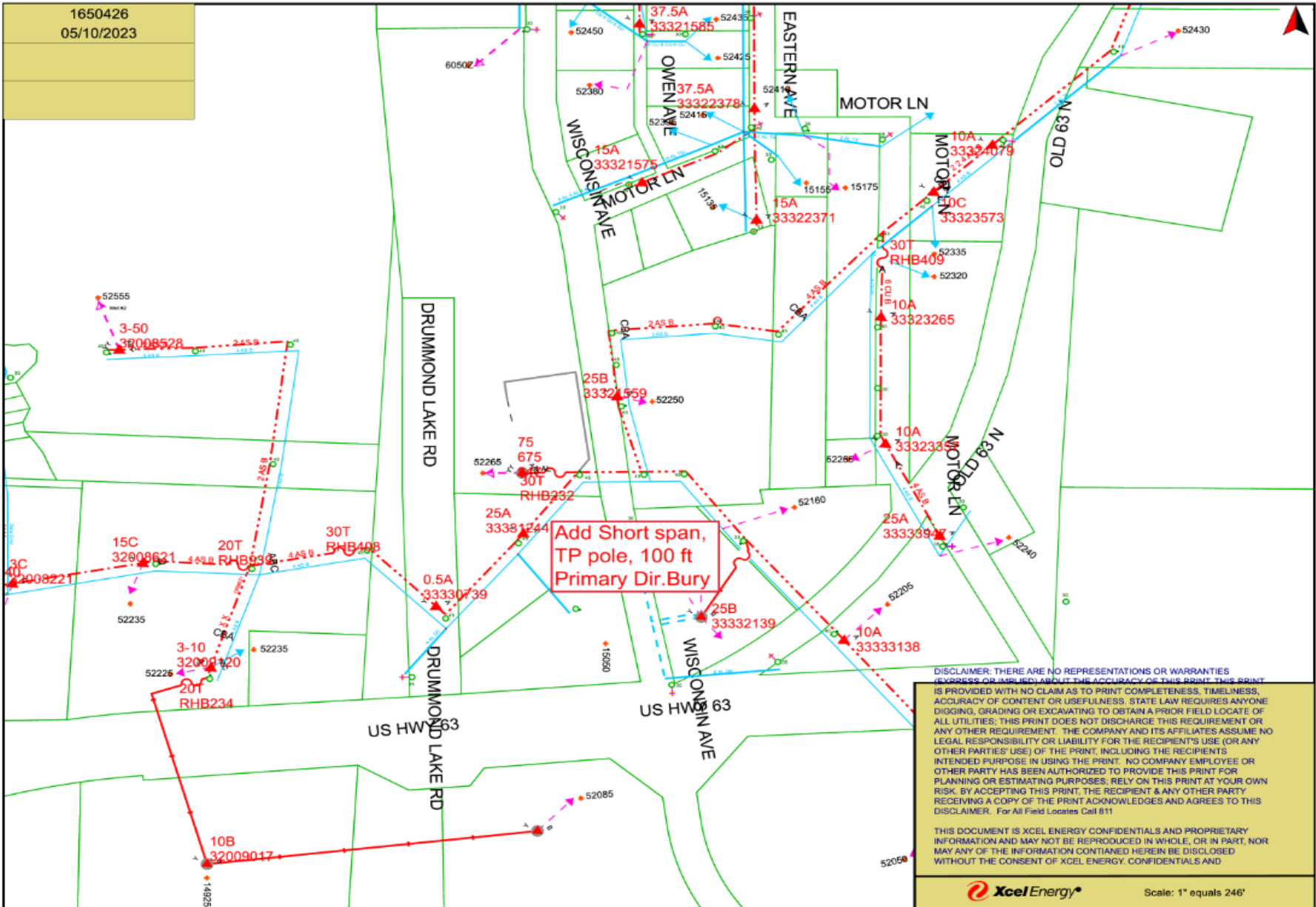
Scale: 1" equals 190'

The Portage - Cable



Cornucopia - Town of Bell

1650426
05/10/2023



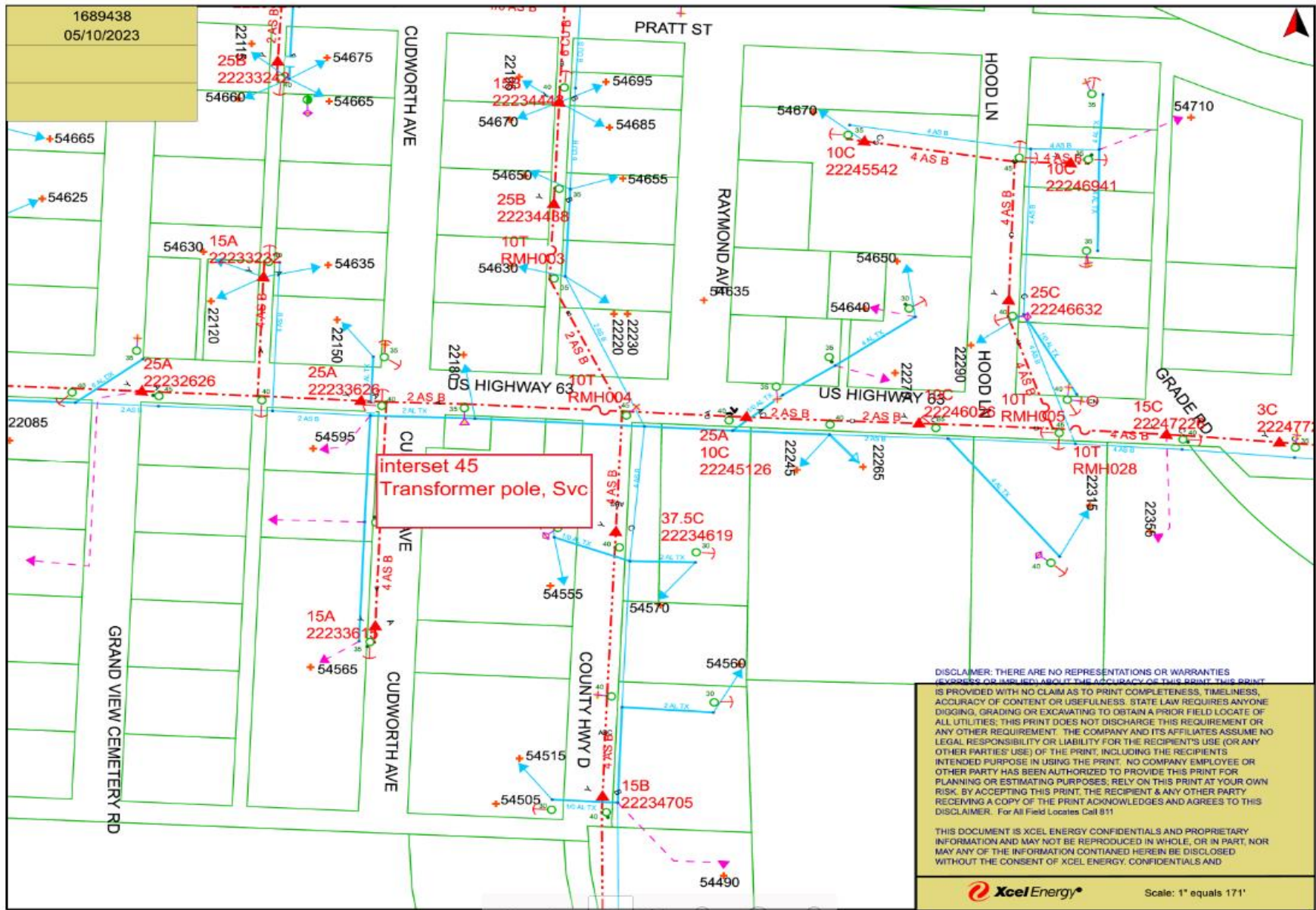
DISCLAIMER: THERE ARE NO REPRESENTATIONS OR WARRANTIES EXPRESSED OR IMPLIED ABOUT THE ACCURACY OF THIS PRINT. THIS PRINT IS PROVIDED WITH NO CLAIM AS TO PRINT COMPLETENESS, TIMELINESS, ACCURACY OF CONTENT OR USEFULNESS. STATE LAW REQUIRES ANYONE DIGGING, GRADING OR EXCAVATING TO OBTAIN A PRIOR FIELD LOCATE OF ALL UTILITIES; THIS PRINT DOES NOT DISCHARGE THIS REQUIREMENT OR ANY OTHER REQUIREMENT. THE COMPANY AND ITS AFFILIATES ASSUME NO LEGAL RESPONSIBILITY OR LIABILITY FOR THE RECIPIENT'S USE (OR ANY OTHER PARTIES' USE) OF THE PRINT, INCLUDING THE RECIPIENT'S INTENDED PURPOSE IN USING THE PRINT. NO COMPANY EMPLOYEE OR OTHER PARTY HAS BEEN AUTHORIZED TO PROVIDE THIS PRINT FOR PLANNING OR ESTIMATING PURPOSES. RELY ON THIS PRINT AT YOUR OWN RISK. BY ACCEPTING THIS PRINT, THE RECIPIENT & ANY OTHER PARTY RECEIVING A COPY OF THE PRINT ACKNOWLEDGES AND AGREES TO THIS DISCLAIMER. For All Field Locates Call 811

THIS DOCUMENT IS XCEL ENERGY CONFIDENTIALS AND PROPRIETARY INFORMATION AND MAY NOT BE REPRODUCED IN WHOLE, OR IN PART, NOR MAY ANY OF THE INFORMATION CONTAINED HEREIN BE DISCLOSED WITHOUT THE CONSENT OF XCEL ENERGY. CONFIDENTIALS AND

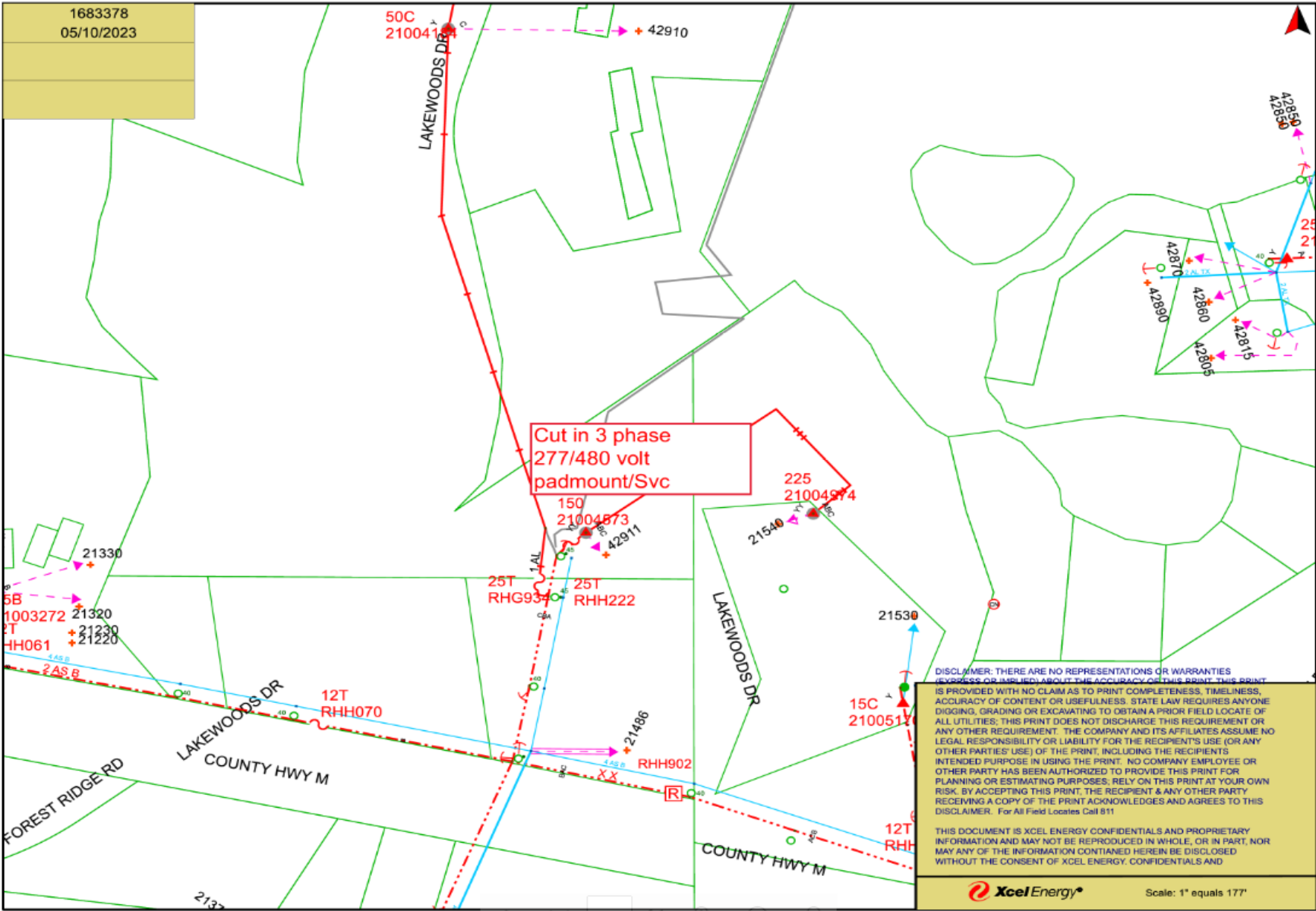


Scale: 1" equals 246'

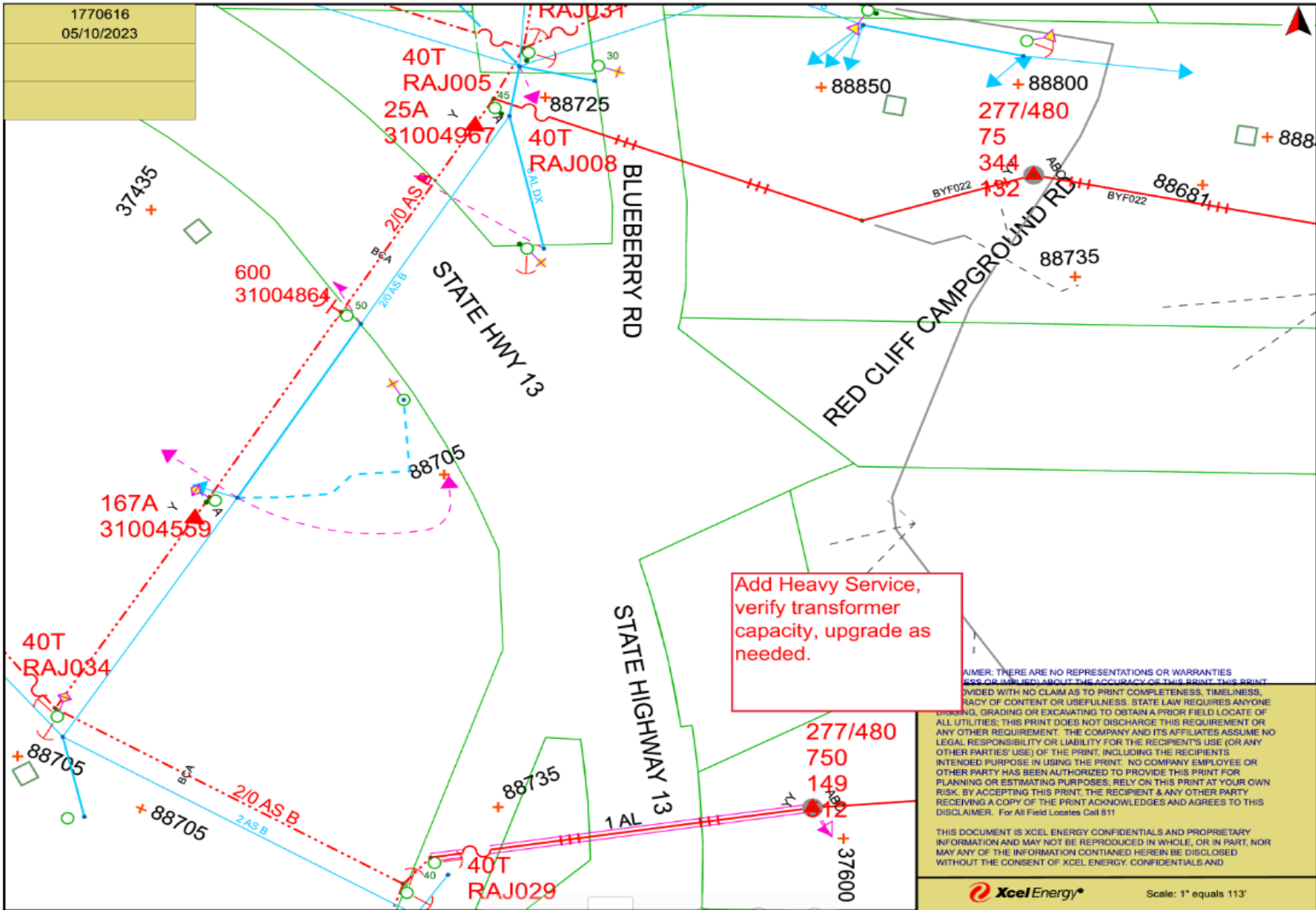
Drummond - Bear Country



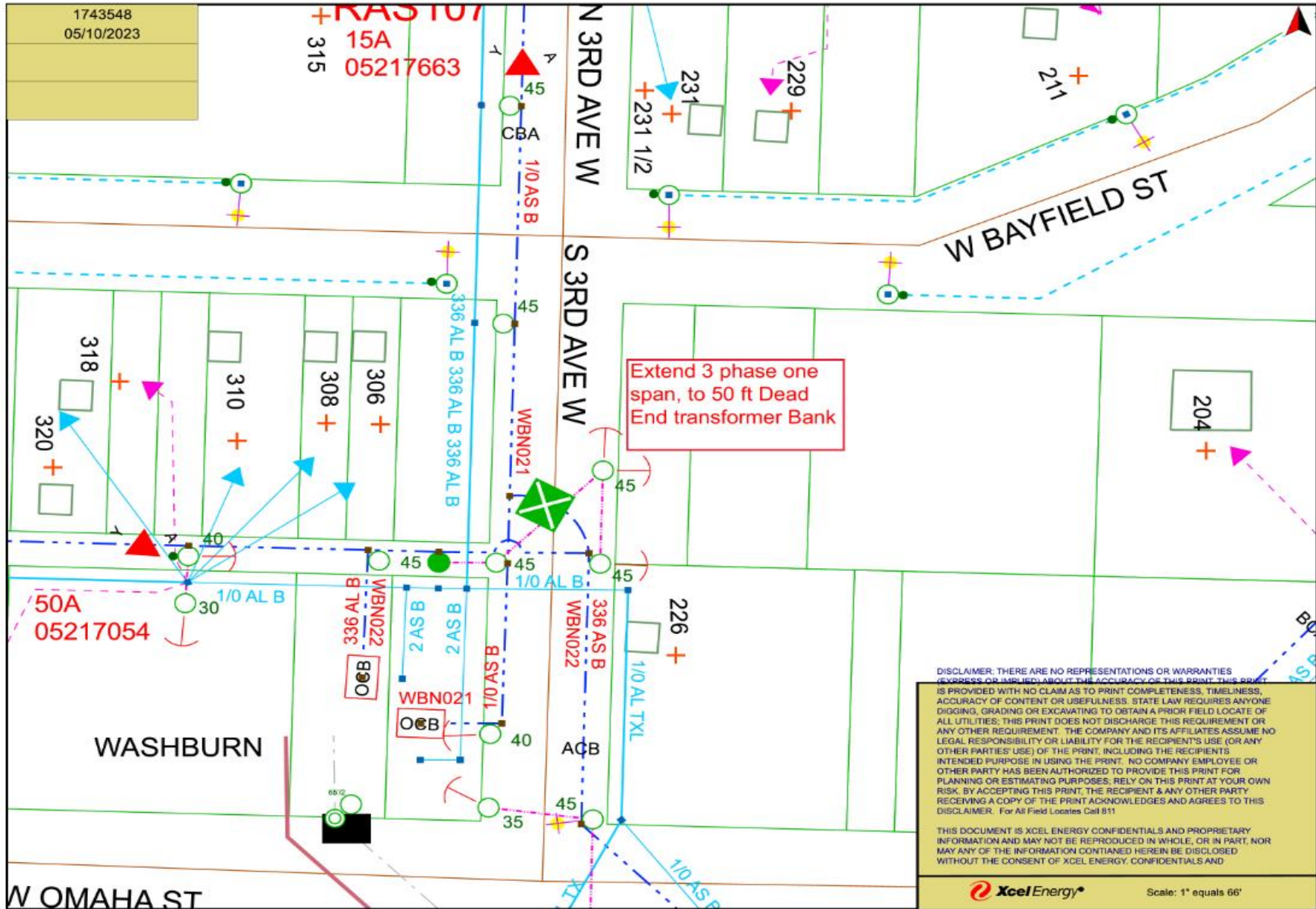
Grandview EV



Lakewoods EV



Red Cliff Legendary Waters



Washburn IGA

5/30/2023

Customer: Bayfield County

Job Contact: **Mark Abeles-Allison**

Project: Bayfield County EV Charger Site Lighting

ITEM	DESCRIPTION	QTY	UNIT PRICE	TOTAL
1	Supply and install 20' steel light pole on concrete foundation. Install RAB A17XFU 150 LED area light on pole.	1.00	\$ 4,160.00	\$ 4,160.00
2				\$ -
3				\$ -
4				\$ -
5				\$ -
6				\$ -
7				\$ -
8				\$ -
9				\$ -
10				\$ -
			TOTAL	\$ 4,160.00

Pay Terms: **Progress Billing**

Proposal is valid for 60 days. No bonding is included in this proposal unless stated otherwise. A service charge of 1.5% per month (18% per annum) will be applied to past due accounts. The customer is responsible for all legal costs associated with the collection / recovery of their past due account. This proposal is subject to Jolma Electric's Standard Terms and Conditions, which are incorporated herein by reference. Buyer expressly agrees to such Standard Terms and Conditions.

By signing below, I agree to pay for the above service(s) to be completed:

Name: _____ Signature: _____ Date: _____

Thank you for the opportunity,

Jeff Jolma

Jolma Electric LLC

JOLMA ELECTRIC - TERMS AND CONDITIONS

NOTICE OF LIEN RIGHTS

AS REQUIRED BY THE WISCONSIN CONSTRUCTION LIEN LAWS, CONTRACTOR HEREBY NOTIFIES OWNER THAT PERSONS OR COMPANIES FURNISHING LABOR OR MATERIALS FOR THE CONSTRUCTION ON OWNER'S LAND MAY HAVE LIEN RIGHTS ON OWNER'S LAND AND BUILDING IF NOT PAID. THOSE ENTITLED TO LIEN RIGHTS, IN ADDITION TO THE UNDERSIGNED CONTRACTOR, ARE THOSE WHO CONTRACT DIRECTLY WITH THE OWNER OR THOSE WHO GIVE THE OWNER NOTICE WITHIN SIXTY (60) DAYS AFTER THEY FIRST FURNISH LABOR OR MATERIALS FOR THE CONSTRUCTION. ACCORDINGLY, OWNER MAY RECEIVE NOTICES FROM THOSE WHO FURNISH LABOR OR MATERIALS FOR THE CONSTRUCTION, AND SHOULD GIVE A COPY TO EACH NOTICE RECEIVED TO THE MORTGAGE LENDER, IF ANY; CONTRACTOR AGREES TO COOPERATE WITH THE OWNER AND OWNER'S LENDER, IF ANY TO SEE THAT ALL POTENTIAL LIEN CLAIMS ARE DULY PAID.

ACCEPTANCE OF WORK

All labor and material is conclusively accepted as satisfactory unless objected to in writing within 7 (Seven) days of performance.

EXTRA WORK

All alterations or deviations from any of the terms of this contract shall be in writing and executed by the parties hereto. Any extra cost involved therein will be come and extra charge to be paid by Purchaser over and above the contract price.

MATERIAL ESCALATION CLAUSE

If, during the performance of the contract, the price of the material significantly increases, through no fault of the contractor, the price shall be equitably adjusted by an amount reasonably necessary to cover any such significant price increases. As used herein, a significant price increase shall mean any increase in price exceeding 15% experienced by contractor from the date of the contract signing. Such price increases shall be documented through quotes, invoices, or receipts. Where the delivery of material is delayed, through no fault of the contractor, as a result of the shortage or unavailability of copper, PVC, rough-in boxes, fixture housings, etc, contractor shall not be liable for any additional costs or damages associated with such delay(s).

PURCHASERS RESPONSIBILITIES

Purchaser acknowledges and understands that it shall be responsible for obtaining any permits which may be required in connection with performance of this proposal/contract. Where applicable, purchaser shall also be responsible for any settling of soil, smoothing out of soils, and final landscaping after day of initial installation.

GENERAL EXCLUSIONS

Plumbing and/or HVAC equipment startup, testing or operation beyond connection of power per manufacturers recommendations; Non-UL Listed light fixtures including, homemade and retrofit fixtures; temporary heating; repair or replacement of vapor barrier or insulation; wall, ceiling or siding patching or repairing, painting, priming and surface preparation; fire protection/suppression systems unless stated in contract items or clearly defined; surveying; layout of control lines; removal and stockpiling of excess soil; concrete work, including forming and rebar; wall and floor block outs; pitch pockets; the costs of performance or payment bonds; asbestos removal or disposal; lead removal or disposal; contaminated soil removal or disposal; major increases in copper prices; permits and fees including UDC; Wisconsin state electrical permit fees, unless clearly noted; erosion control; traffic control; tree removal; replacement of any trees due to root structure damage during underground installation; any customer directed work that is in direct conflict with NEC, State or local electrical codes.

GENERAL INCLUSIONS

General trash swept up only, others will haul it away. labor and specifications are to be as stated above and performed in accordance with the specifications associated with the above project and completed in substantial workmanlike manner.

INCLEMENT WEATHER

Inclement weather may alter the completion of the work to be furnished hereunder. Furthermore, special conditions should be given if work is to be performed before May 1 or after Oct 15 in light of less than desirable weather conditions which could potentially impair the quality of the work performed hereunder. We will clean up the excavation site as well as we can on day of installation, but purchaser will be responsible for final cleanup when weather conditions permit.

WARRANTY

All materials are guaranteed to be as specified all work is to be completed in workmanlike manner according to standard practices. All labor and materials will be guaranteed against defect for one (1) year from date of installation There are no expressed or implied warranties of merchantability, quality or of fitness for any particular purpose, which may extend beyond those specifically set out in this document. All Warranties are Void if payment is not made as stipulated.

DELINQUENCY CHARGE

Payment is due and payable upon completion of each stage of work. If Purchaser defaults on the payment required, Purchaser will be liable for all costs of collection, including reasonable attorney's fee and a 30% delinquency charge on the balance. If Purchaser is an organization as defined by Wis.Statutes, Section 421.30(28), the delinquency charge rate shall be covered by this agreement until full payment is received according to the above terms of sale. Purchaser consents in any action or legal proceeding relating to this contract commenced by the contractor to the personal jurisdiction of any court that is either a court record in the State of Wisconsin, or a court of the United States located in the State of Wisconsin. It is hereby agreed that no legal action with respect to this contract can be brought by either party later than one (1) year after the cause of action accrues and that the party asserting such legal action shall be barred from any remedy thereto.

INDIVIDUAL LIABILITY

The undersigned purchaser agrees to be individually liable for all terms of the agreement, regardless of whether he or she signs individually or as an agent for the owner of the property upon which work is being performed or any other individual, partnership or corporation.

BINDING EFFECT

This agreement shall be binding upon the parties hereto, their heirs, personal representatives, successors, and assigns.

ENTIRE AGREEMENT

The entire contract is embodied in this writing. This writing constitutes the final expression of the party's agreement and is complete and exclusive statement of that agreement. In the event that any term of this contract in unenforceable, the remaining terms of the contract shall still be in full force and effect.

This proposal may be withdrawn by us if not accepted within 30 days. We must receive a signed contract before work will start.

Your signature below indicates that you have read, understand, and agree with the Terms and Conditions.

Signature: _____ Date: _____



Color: Bronze

Weight: 13.2 lbs

Project:

Type:

Prepared By:

Date:

Driver Info

Type	Constant Current
120V	1.50A
208V	0.80A
240V	0.70A
277V	0.06A
Input Watts	69.8-151.22W

LED Info

Watts	150W
Color Temp	Field Adjustable
Color Accuracy	71-73 CRI
L70 Lifespan	100,000 Hours
Lumens	11168-21875.1 lm
Efficacy	134-165.9 lm/W

Technical Specifications

Field Adjustability

Field Adjustable:

Field Adjustable Light Output:
150W/100W/70W (factory default 150W)
Color temperature (selectable by 3000K, 4000K and 5000K)

Compliance

UL Listed:

Suitable for wet locations

IESNA LM-79 & LM-80 Testing:

RAB LED luminaires and LED components have been tested by an independent laboratory in accordance with IESNA LM-79 and LM-80.

IP Rating:

Ingress protection rating of IP65 for dust and water

DLC Listed:

This product is listed by Design Lights Consortium (DLC) as an ultra-efficient premium product that qualifies for the highest tier of rebates from DLC Member Utilities. Designed to meet DLC 5.1 requirements.

DLC Product Code: PADCS7LP

Electrical

Driver:

Constant Current, Class 2, 120-277V, 50/60Hz, 120V: 1.50A, 208V: 0.80A, 240V: 0.70A, 277V: 0.60A

Dimming Driver:

Driver includes dimming control wiring for 0-10V dimming systems. Requires separate 0-10V DC dimming circuit. Dims down to 10%.

Surge Protection:

10kV

7-Pin Receptacle:

ANSI C136.41 7-pin receptacle, compatible with wireless control systems

Performance

Lifespan:

100,000-Hour LED lifespan based on IES LM-80 results and TM-21 calculations

Construction

IES Classification:

The Type III distribution is ideal for roadway, general parking and other area lighting applications where a larger pool of lighting is required. It is intended to be located near the side of the area, allowing the light to project outward and fill the area.

Cold Weather Starting:

The minimum starting temperature is -40°C (-40°F)

Maximum Ambient Temperature:

Suitable for use in up to 40°C (104°F)

Lens:

Polycarbonate lens

Technical Specifications (continued)

Construction

Housing:

Die-cast aluminum housing, lens frame and mounting arm

Vibration Rating:

3G vibration rating per ANSI C136.31

EPA:

- 1 Fixture: 0.46
- 2 Fixtures at 90°: 0.60
- 2 Fixtures at 180°: 0.93
- 3 Fixtures at 90°: 0.93
- 4 Fixtures at 90°: 0.93

EPA with Slipfitter & Adjustable Arm Mounting Accessories (Sold Separately)

- 1 Fixture: 0.66
- 2 Fixtures at 90°: 0.80
- 2 Fixtures at 180°: 1.32
- 3 Fixtures at 90°: 1.32
- 4 Fixtures at 90°: 1.32

Mounting:

Universal mounting arm compatible for hole spacing patterns from 1" to 5 1/2" center to center. Round Pole Adaptor plate included as a standard. Easy slide and lock to mount fixture with ease. Round pole diameter must be >4" to mount fixtures at 90° orientation.

Finish:

Formulated for high durability and long-lasting color

Green Technology:

Mercury and UV free. RoHS-compliant components.

LED Characteristics

LEDs:

Long-life, high-efficiency, surface-mount LEDs

Color Uniformity:

RAB's range of Correlated Color Temperature follows the guidelines of the American National Standard for Specifications for the Chromaticity of Solid State Lighting (SSL) Products, ANSI C78.377-2017.

Other

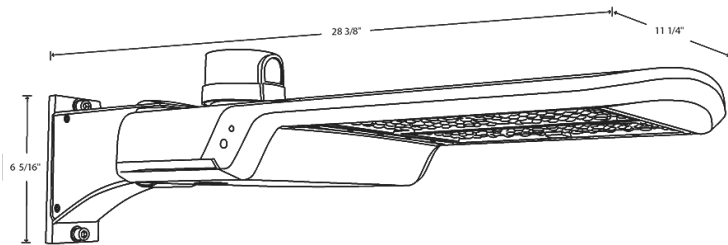
5 Yr Limited Warranty:

The RAB 5-year, limited warranty covers light output, driver performance and paint finish. RAB's warranty is subject to all terms and conditions found at rablighting.com/warranty.

Buy American Act Compliance:

RAB values USA manufacturing! Upon request, RAB may be able to manufacture this product to be compliant with the Buy American Act (BAA). Please contact customer service to request a quote for the product to be made BAA compliant.

Dimensions



Features

Color Adjustable: 5000K/4000K/3000K

Power Adjustable: 70W/100W/150W

3-pin twistlock and shorting cap included

Integrated NEMA 7-pin receptacle enables easy upgrade to smart controls

0-10V Dimming, standard

100,000-hour LED lifespan

5-Year, limited warranty

Ordering Matrix

Family	Wattage	Options
A17 XFU	150	

150 = 70/100/150W

Blank = No Option
/LC = Lightcloud® Controller

*A17 XFU comes standard with:
Adjustable Universal Pole Mount
7-Pin Receptacle
Twistlock Photocell
Shorting Cap*



Square steel poles drilled for 2 Area Lights at 180°. Designed for ground mounting. Poles are stocked nationwide for quick shipment. Protective packaging ensures poles arrive at the job site good as new.

Color: Bronze

Weight: 136.7 lbs

Project:	Type:
Prepared By:	Date:

Technical Specifications

Compliance

CSA Listed:

Suitable for wet locations

Construction

Shaft:

46,000 p.s.i. minimum yield.

Hand Holes:

Reinforced with grounding lug and removable cover

Base Plates:

Slotted base plates 36,000 p.s.i.

Shipping Protection:

All poles are shipped in individual corrugated cartons to prevent finish damage

Color:

Bronze powder coating

Height:

20 ft.

Weight:

137 lbs

Gauge:

11

Wall Thickness:

1/8"

Shaft Size:

4"

Hand Hole Dimensions:

3" x 5"

Bolt Circle:

8 1/2"

Base Dimension:

8"

Technical Specifications (continued)

Construction

Anchor Bolt:

Galvanized anchor bolts and galvanized hardware and anchor bolt template. All bolts have a 3" hook.

Anchor Bolt Templates:

WARNING Template must be printed on 11" x 17" sheet for actual size. CHECK SCALE BEFORE USING. Templates shipped with anchor bolts and available [online](#).

Pre-Shipped Anchor Bolts:

Bolts can be pre-shipped upon request for additional freight charge

Max EPA's/Max Weights:

70MPH 10.7 ft./360 lb.
 80MPH 7.0 ft./350 lb.
 90MPH 4.3 ft./350 lb.
 100MPH 2.5 ft./350 lb.
 110MPH 1.1 ft./350 lb.
 120MPH 0.1 ft./340lb

Other

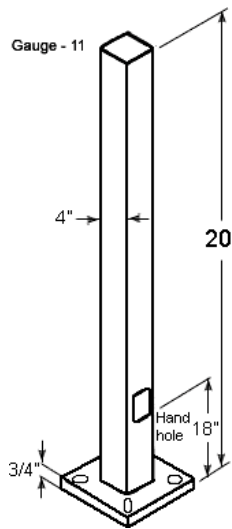
Terms of Sale:

Pole Terms of Sale is available [online](#).

Buy American Act Compliance:

RAB values USA manufacturing! Upon request, RAB may be able to manufacture this product to be compliant with the Buy American Act (BAA). Please contact customer service to request a quote for the product to be made BAA compliant.

Dimensions



Features

- Designed for ground mounting
- Heavy duty TGIC polyester coating
- Reinforced hand holes with grounding lug and removable cover for easy wiring access
- Pole caps, base covers & bolts are sold separately
- Custom manufactured for each application



Resolution

No. 2023-50

FHA Charging and Fueling Infrastructure Grant Application Authorization

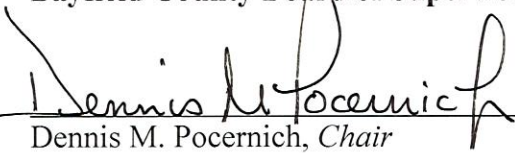
WHEREAS, the Federal Highway Administration has established the Charging and Fueling Infrastructure to assist local units of government with strategically, located publicly accessible fueling infrastructure; *and*,

WHEREAS, Bayfield County has stated its interest in emission reductions; *and*,

WHEREAS, there is substantial local interest in Electric / Alternate Vehicle Fueling; *and*

NOW, THEREFORE, **BE IT RESOLVED**, that the Bayfield County Board of Supervisors, assembled this 30th day of May, 2023, hereby authorizes Bayfield County to submit a CFI grant application for fueling infrastructure.

By Action of the:
Bayfield County Board of Supervisors


Dennis M. Pocernich, *Chair*

STATE OF WISCONSIN)
) ss.
COUNTY OF BAYFIELD)

I, Lynn M. Divine, *Bayfield County Clerk*, hereby certify that the foregoing is a true and correct copy of Resolution No. 2023-50, Volume 29, adopted by the Bayfield County Executive Committee at their meeting held on the 30th day of May 2023.


Lynn M. Divine
Lynn M. Divine, *Bayfield County Clerk*

CITY OF WASHBURN
119 Washington Avenue
P.O. Box 638
Washburn, WI 54891



715-373-6160
715-373-6161
FAX 715-373-6148

June 9, 2023

U.S. Department of Transportation
Federal Highway Administration

Re: Charging and Fueling Infrastructure Discretionary Grant Application
NOFO No. 693JJ323NF00004

To Whom it May Concern:

The City of Washburn is the county seat of Bayfield County where 1 in 5 jobs are supported by the tourism economy. It is the second largest county in the state by area with 800 miles of paved roads and not one traffic signal. It is a “drive to” destination, which is now becoming more and more of a challenge for travelers with electric vehicles to be able to reach our area.

The Wisconsin Lake Superior National Scenic Byway encompasses a 70-mile stretch of state highway 13, which traverses the City of Washburn. A large proportion of the 1.5 million annual visitors travel to and through Washburn, which is the nation’s first Eco municipality. Washburn is committed to using sustainable practices in our planning decisions and fully supports the electrification of our transportation system.

There is currently only one Level 3 EV charging station in the entire county. The addition of more Electric Vehicle Supply Equipment throughout the area would make it more feasible for area residents to purchase and own electric vehicles in addition to supporting the large number of visitors to the area.

I support the Electric Vehicle Charging Infrastructure Implementation Project and I strongly encourage you to award grant funds to this project. Please do not hesitate to contact me if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read 'Mary D. Motiff', with a long horizontal flourish extending to the right.

Mary D. Motiff
Mayor



1414 W. Hamilton Ave
P.O. Box 8
Eau Claire, WI 54702-0008

June 1, 2023

U.S. Department of Transportation
Federal Highway Administration
Charging and Fueling Infrastructure Discretionary Grant Opportunity
RE: NOFO Number 693JJ323NF00004

Xcel Energy is excited to support Bayfield County's application to the Federal Highway Administration's "Charging and Fueling Infrastructure" discretionary grant opportunity. Bayfield County's project would site EV charging infrastructure in strategically placed locations with a focus on equity and inclusion in rural and remote area, helping fill an important gap in the state of Wisconsin's EV infrastructure plan.

Xcel Energy has worked with Bayfield County on numerous projects including several renewable energy initiatives, microgrids for increased resiliency in county-owned facilities, and the area's only Level 3 DCFC – the first successful private-public partnership utilizing Xcel Energy's EV Commercial tariff (EVC-1). Under this grant, the Bayfield County would again use the EVC-1 tariff which provides credits to cover the required cost share. This tariff, approved by the Public Service Commission of Wisconsin, is coupled with an embedded "demand limiter" which ensures a level of certainty in costs for the customer.

Bayfield County was one of the first participants in Xcel Energy's Solar*Connect Community program that includes a 1 MW community solar array located in nearby Ashland. Bayfield County is also a large subscriber to Xcel Energy's Renewable*Connect program which helped it become the first county in Wisconsin to achieve 100% carbon-free electricity for its own facilities. Bayfield County was also the first county to utilize Xcel Energy's EMPOWER Resiliency tariff, creating an advanced microgrid with the county's courthouse and jail complex. This proposed EV project would continue the innovative energy work taking place in the County.

We look forward to partnering with the County in this exciting opportunity to advance the electrification of the transportation system in Wisconsin and the United States.

Sincerely,

Respectfully,

A handwritten signature in black ink that reads "Brian Elwood".

Brian Elwood
General Manager
Customer & Community Service



Red Cliff Band of Lake Superior Chippewa Indians

88455 Pike Road Bayfield, WI 54814

Phone: 715-779-3700 Fax: 715-779-3704

Email: redcliff@redcliff-nsn.gov

Red Cliff Tribal Administration

May 30, 2023

Mark Abeles-Allison
Bayfield County Administrator
117 East 6th Street, Washburn, WI 54891

RE: Letter of Support, Charging and Fueling Infrastructure Discretionary Grant Opportunity

The Red Cliff Band of Lake Superior Chippewa Indians understand the importance of the transition toward a clean energy future. To combat the environmental and economic effects of ongoing climate change, our efforts to improve grid resiliency and reduce greenhouse gas emissions through a variety of clean energy projects are well underway. Bayfield County and Red Cliff have a unique opportunity to partner and develop electric vehicle charging infrastructure, improving accessibility to clean energy technology. We look forward to being a host site for Electric Vehicle Supply Equipment and working with Bayfield County and the U.S. Department of Transportation to help close the existing gap in electric vehicle charging access. Red Cliff will take ownership of the EVSE after the expiration of the included 5-year operations and maintenance plan and will assume responsibility for the operations of the charging equipment and costs billed from our local electric utility provider.

As a rural disadvantaged community, Red Cliff appreciates the prioritization of efforts to deliver environmental justice in tribal communities as part of President Biden's Justice40 Initiative. This project ensures that these initiatives are embraced and met by implementing EVSE infrastructure at Red Cliff and throughout Bayfield County, where annual tourism is a major component of our local economies. We are excited to participate in this opportunity to advance the electrification of our transportation system.

Miigwech,

Christopher Boyd, Chairman

"The Hub of the Chippewa Nation"



U.S. Department of Transportation
Federal Highway Administration
Charging and Fueling Infrastructure Discretionary Grant Opportunity
RE: NOFO Number 693JJ323NF00004

Randy Soulier
General Manager
Legendary Waters Resort and Casino
37600 Onigaming Drive
Red Cliff, WI 54814

May 18, 2023

To Whom it May Concern,

As a business operator in rural Northern Wisconsin, our county leadership has reached out to us to initiate a county-wide EV charging station implementation plan. With strategically placed EV charging infrastructure, Bayfield County, WI seeks to establish itself as "open for business" in an area that currently is the second largest county in the state by area, but only has one DC fast charger installed in the entire county. We want to help eliminate this EV charging gap by partnering with our county and be a host site for Electric Vehicle Supply Equipment (EVSE).

We understand that as a host site we will take ownership of the EVSE and be fiscally responsible for operations and maintenance of the charging equipment, as well as electricity costs billed from our local electric utility. Legendary Waters has been in operation since 2012 and overall, the Red Cliff Band of Lake Superior Ojibwe has operated a gaming facility for decades prior to our facility. We anticipate our immediate surroundings to grow exponentially over the next several years and attract more visitors from our region. That is why we are interested in helping to accommodate the growing need for adequate resources EV owners are already seeking.

We look forward to participating in this exciting opportunity to advance the electrification of our transportation system.

Thank you for your consideration,

Randy Soulier, General Manager
Legendary Waters Resort and Casino



P.O. BOX 696
28715 U.S. Hwy.2
Ashland, WI 54806



(715) 682-8400 Sales
(715) 682-2400 Service
Fax (715) 682-0278

U.S. Department of Transportation
Federal Highway Administration
Charging and Fueling Infrastructure Discretionary Grant Opportunity
RE: NOFO Number 693JJ323NF00004

4/21/2023

Preston Mikula
Ashland Ford Chrysler
28715 US Hwy 2
Ashland, WI 54806

Letter of Intent

To Whom it May Concern,

As a small business owner in rural Northern Wisconsin our county leadership has reached out to us to initiate a county-wide EV charging station implementation plan. With strategically placed EV charging infrastructure Bayfield County, WI seeks to establish itself as "open for business" in an area that currently is the second largest county in the state by area, but only has one DC fast charger installed in the entire county. We want to help eliminate this EV charging gap by partnering with our county and be a host site for Electric Vehicle Supply Equipment (EVSE).

We understand that as a host site we will take ownership of the EVSE and be fiscally responsible for operations and maintenance of the charging equipment, as well as electricity costs billed from our local electric utility. Ashland Ford Chrysler has been at the same location in Bayfield County since 1987 and we are the only Dealership in Bayfield County. If by some unforeseen and unfortunate reason our company ceases to exist, we understand that the charging equipment will be taken over by the county and operated and maintained by them until a future site owner is established.

Ford and Chrysler are both committed to the transition to EV and so is Ashland Ford Chrysler.

We look forward to participating in this exciting opportunity to advance the electrification of our transportation system.

Thank you for your consideration,

Preston Mikula
General Manager/Owner

City of Bayfield

Office of the Clerk and Mayor

125 South First Street - P.O. Box 1170

Bayfield, Wisconsin 54814

Phone (715) 779-5712

cityclerk@cityofbayfield.com

May 17, 2023

U.S. Department of Transportation
Federal Highway Administration
Charging and Fueling Infrastructure Discretionary Grant Opportunity
RE: NOFO Number 693JJ323NF00004

To Whom it May Concern,

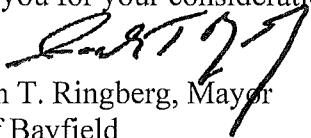
We are the smallest City in the State of Wisconsin and are located in rural Northern Wisconsin on the shore of Lake Superior. Our county leadership has reached out to us to initiate a county-wide EV charging station implementation plan. With strategically placed EV charging infrastructure Bayfield County, WI seeks to establish itself as “open for business” in an area that currently is the second largest county in the state by area, but only has one DC fast charger installed in the entire county. We want to help eliminate this EV charging gap by partnering with our county and be a host site for Electric Vehicle Supply Equipment (EVSE). By doing so, we achieve one of the City of Bayfield’s Comprehensive Goals and Objectives to provide reliable and efficient EV charging infrastructure which does not exist now.

We understand that as a host site we will take ownership of the EVSE and be fiscally responsible for operations and maintenance of the charging equipment, as well as electricity costs billed from our local electric utility.

The City of Bayfield has a strong commitment in engaging in activities and adopting policies that help to maintain a clean and healthy environment. “Above and Beyond” is Bayfield’s motto when it comes to protection of the “Greatest of all the Great Lakes, Lake Superior”. Further, research has shown emissions contribute to air pollution which effect ecosystems. The offer to partner with Bayfield County and install EV charging stations provides an alternative and opens doors to our residents and visitors.

We look forward to participating in this exciting opportunity to advance the electrification of our transportation system and being able to support the wellbeing of all residents and visitors.

Thank you for your consideration,



Gordon T. Ringberg, Mayor
City of Bayfield

Established in 1913.

The City of Bayfield is an Equal Opportunity Provider and Employer.

Complaints of discrimination should be sent to USDA, Director, Office of Civil Rights, Washington, D.C. 20250-9410

Town of Bell

U.S. Department of Transportation
Federal Highway Administration
Charging and Fueling Infrastructure Discretionary Grant Opportunity
RE: NOFO Number 693JJ323NF00004

6/3/2023

*Town of Bell Board
PO Box 280
Cornucopia WI 54827*

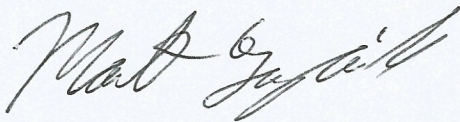
Letter of Intent

To Whom it May Concern,

The Town of Bell supports Bayfield County's DOT CFI application to fund electric vehicle charging stations on private property in our community. We have gone through an extensive process to identify the best site and have engaged the community in making this decision. Our Town Board has received input from our Planning Commission, Harbor Commission, Renewable Energy Committee, and the public that was involved in each of those commissions/committees.

The site chosen is on private land that will support a local and key business in our community. Electric vehicle owners who are charging will spend time in our community offering other area businesses support as well. We are a small rural and remote community on the shores of Lake Superior and this economic impact on our community could be significant.

Thank you for your consideration,

A handwritten signature in cursive script, appearing to read "Matt Lazorik".

Matt Lazorik
Chairman, Town of Bell Board

Town of Clover

P.O Box 94 Herbster, WI 54844 Phone: 715-774-3780 Fax: 715-774-3792

tnclover@cheqnet.net www.herbsterwisconsin.com

Charging and Fueling Infrastructure Discretionary Grant Opportunity

RE: NOFO Number 693JJ323NF00004

Letter of Intent

To Whom It May Concern,

We are a small Town Government in rural Northern Wisconsin, and recently, our county leadership has reached out to us to help initiate a county-wide EV charging station implementation plan. With strategically placed EV charging infrastructure, Bayfield County, WI seeks to establish itself as "open for business" in an area that currently is the second largest county in the state by area, but only has one DC fast charger installed in the entire county. We want to help eliminate this EV charging gap by partnering with our county and be a host site for Electric Vehicle Supply Equipment (EVSE).

We understand that as a host site we will take ownership of the EVSE and be fiscally responsible for operations and maintenance of the charging equipment, as well as electricity costs billed from our local electric utility. The Town of Clover is rich in natural beauty (being on the shores of Lake Superior) and attracts a multitude of tourism and business opportunities, but does not have any EV Charging infrastructure to offer today..

In the recently completed draft of the Town's 2023-2043 Comprehensive Land Use plan, there was a definite desire of the Town residents to promote, grow and offer renewable energy services and support.

We look forward to participating in this exciting opportunity to advance the electrification of our transportation system.

Thank you for your consideration,

Erik Felt

Supervisor, Town of
Clover, Wisconsin

**Town of Port Wing
83030 Grand Avenue
PO Box 146
Port Wing, WI 54865-0146**

U.S. Department of Transportation
Federal Highway Administration
Charging and Fueling Infrastructure Discretionary Grant Opportunity
RE: NOFO Number 693JJ323NF00004

June 8, 2023

*Pamela Lawrenz Holt
Town of Port Wing
PO Box 146
Port Wing, WI 54865*

Letter of Support

The Town of Port Wing supports Bayfield County's Federal Highway Administration's Charging and Fueling Infrastructure Grant application to fund electric vehicle charging stations in our community. We have discussed the project at our Town meetings to identify the best site and have engaged the community in making this decision.

The site chosen is on private land that will support a local and key business in our community. Electric vehicle owners who are charging will spend time in our community offering support for those businesses as well. We are a small rural and remote community on the shores of Lake Superior and this economic impact on our community could be significant.

We feel Bayfield County's approach to install charging stations in each Town along the scenic routes throughout the County will be especially important during winter driving conditions when battery range is reduced because of the cold weather. We also feel it will be beneficial during the busy summer tourist season when our Town population grows exponentially.

Our community is on a newly established scenic byway and currently does not have any charging stations. A charging station in Port Wing will fill a significant gap in the State's Electric Vehicle Infrastructure Plan as the designated corridor is 17 miles away.

We look forward to participating in this exciting opportunity to advance the electrification of our transportation system.

Thank you for your consideration,

Best regards,



Pamela Lawrenz Holt, Clerk

STAR NORTH

U.S. Department of Transportation
Federal Highway Administration
Charging and Fueling Infrastructure Discretionary Grant Opportunity
RE: NOFO Number 693JJ323NF00004

Date 5-19-2023

*Mark Bahr
Star North Inc.
22537 Cty Hwy C
Cornucopia, WI 54827*

Letter of Intent

To Whom it May Concern,

As a small business owner in rural Northern Wisconsin our county leadership has reached out to us to initiate a county-wide EV charging station implementation plan. With strategically placed EV charging infrastructure Bayfield County, WI seeks to establish itself as “open for business” in an area that currently is the second largest county in the state by area, but only has one DC fast charger installed in the entire county. We want to help eliminate this EV charging gap by partnering with our county and be a host site for Electric Vehicle Supply Equipment (EVSE).

We understand that as a host site we will take ownership of the EVSE and be fiscally responsible for operations and maintenance of the charging equipment, as well as electricity costs billed from our local electric utility. Star North is an integral and essential small business in the local community with no other opportunity for gas or a charging station for 20 miles. I own 2 successful businesses in Bayfield County and have committed myself into serving the community. If by some unforeseen and unfortunate reason our company ceases to exist, we understand that the charging equipment will be taken over by the county and operated and maintained by them until a future site owner is established.

Star North is the only year-round convenience store, gas station, laundry mat and liquor store in this small rural community for 20 miles. I have been exploring my EV options for the past year and several community members have asked if I plan on adding EV charging stations to my location. I believe this would be a logical, natural next step for me and Star North.

We look forward to participating in this exciting opportunity to advance the electrification of our transportation system.

Thank you for your consideration,

Mark Bahr

22537 County Hwy C. Cornucopia, WI 54827
715-742-3500 www.starnorthwi.com