

Contributors

Northeast Iowa Resource Conservation & Development (RC&D) worked in partnership with multiple organizations including Winneshiek Energy District, Luther College, Northeast Iowa Community College, local energy districts and utilities, and Upper Explorerland Regional Planning Commission to complete this Electric Vehicle Tourism Study for Northeast Iowa.

The RC&D completed this Northeast Iowa EV Tourism Study as part of the regional collaborative project Driving Electric in NE Iowa: An Analysis, Planning, Workforce, and Major Employer Partnership with funding provided by the Iowa Energy Center.

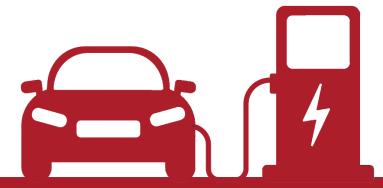


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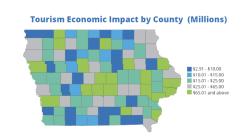
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Introduction

Tourism in Iowa

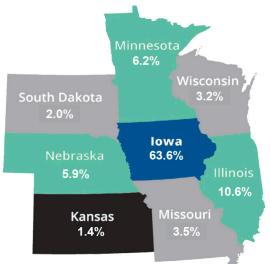
What is tourism? Tourism, according to the World Tourism Organization, "refers to the activity of visitors that travel to a main destination outside his/her usual environment, for less than a year, for any main purpose, including business, leisure, or other personal purpose outside of employment."

According to the Travel Federation of Iowa, "tourism is a proven economic driver for Iowa, generating nearly \$9 billion in revenue and more than 70,000 jobs." (34) In addition, visitors directly generated almost \$864 million in state and local taxes in 2021.



Tourism impacts all counties in Iowa and Northeast Iowa accounts for 1.8% of the share of tourism dollars accumulated in the State of Iowa according to the 2020 Economic Impact Report prepared by Tourism Economics. This accounted for a \$136,420,000 million impact for the Northeast Iowa economy in the 5 counties in Northeast Iowa (Allamakee, Clayton, Fayette, Howard, and Winneshiek). (34)





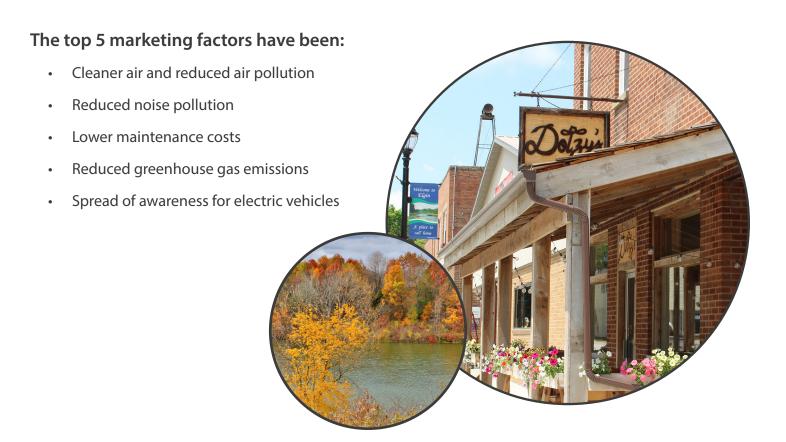
Source: Tourism Economics, Economic Impact of Tourism in Iowa in 2020 10-21-21

As Northeast Iowa aims to be a leader in the state it will be imperative that organizations, businesses, cities, and counties in Northeast Iowa monitor and plan for the changing travel landscape to learn, listen, and adapt with visitor interests and demands.

Sustainable Tourism

The recent trend and growth in the Eco-friendly Tourism industry will assist in the growth of electric vehicle adoption and provide added pressure for accessible EV Chargers in the region. According to a Booking. com's 2021 Sustainable Travel Report, "travelers' day-to-day sustainable commitments are consistent with their intentions for future trips with 84% wanting to reduce general waste, 83% wanting to reduce their energy consumption (e.g. by turning off air conditioning and lights when they are not in a room) and 79% wanting to use more environmentally friendly modes of transport such as walking, cycling or public transport over taxis or rental cars. Furthermore, 69% will go as far as avoiding popular destinations and attractions to ensure they aren't contributing to overcrowding challenges and helping do their part to disperse the positive benefits of travel to less frequently visited destinations and communities." (3)

Electric vehicles are currently being marketed by other destinations and manufacturers to have a positive impact for sustainable tourism. Areas of Italy are advertising that EV only communities are "enhancing the attractiveness of places in accordance with environmental conservation principles."



Transportation and Tourism

Transportation has always been at the heart of the tourism industry and is a crucial component to how visitors reach rural America and Iowa. The tourism transportation landscape in the past has been dominated by the internal combustion engine since it was adopted in the early 1900's.

Brief History of the Automobile and Filling Stations

The introduction of the automobile encouraged tourists to explore the remote and rural landscapes across the United States. Early roads across the US were rough and difficult to travel. Automobiles were also unreliable but over time both would improve as highways were developed and automobile technology and production improved. The continued increase in the number of travelers and vehicles hitting the pavement caused the need for filling stations.



"Automobile being towed by horse drawn wagon in Monument Valley," ca. 1916. Courtesy of the Utah State University - Merrill-Cazier Library via Mountain West Digital Library.



Mac's Gas Station in 1960's Decorah, IA Photo Credit Theresa McIntosh Odom

Filling Stations

Filling stations or gas stations began popping up in the early 1900's and were typically a small building with a gas pump with the supplies and equipment needed to repair automobiles. As automobiles became more reliable and mileage per gallon increased it caused a decrease in the number of gas stations in the united states over the last few decades.

A comparison was made between the growth, stabilization, and decline in the number of gas stations in comparison to the number of registered vehicles in the United States. See the chart below:

Year	Total Gas Stations in United States	Number of Vehicles	Ratio (Registered Vehicles per Gas Station)
1920	15,000 *	9,239,161***	616
1930	100,000 *	26,749,853 ***	267
1970	200,000 *	108,418,197 ***	542
1996	190,246 **	264,621,135 ***	1,391
2000	175,941 **	221,475,173 ***	1,259
2010	159,006 **	242,060,545 ***	1,522
2017	115,370 **	272,429,803 ***	2,361
2020	116,641**	275,924,442 ***	2,365

^{*}Digital Public Library of America

The US gas stations have had to adjust over the last decade from providing full service to self-serve, automotive supplies to convenience store, and so on. As with all businesses it has had to adapt to the

surroundings to survive and as the EV ecosystem changes across the country private businesses providing fuel to travelers will adapt. As 7-Eleven has already announced it will install 500 DC fast chargers at 250 locations in 2022. The 500 charging ports will join 7-Eleven's existing network of 22 charging stations, which are located in 14 stores across four states. (35)

Currently Northeast Iowa lacks the adequate EV chargers for expanded travel in relation to the estimated number of EVs predicted in 2030. With this increase lowa will need to accommodate these travelers.



Maurice Sampson Station & Garage in 1948 Decorah, IA Photo Credit Thelma Sampson

^{**}Alternative Fuels Center Department of Energy

^{***} Federal Highway Administration

Electric Vehicle Tourism in the US

Electric Vehicles in the United States

According to market forecast from Statista. The projected market share of electric vehicles in the United States is projected to raise from 32% in 2030 to 45% in 2035. (32) This is a tremendous increase from the current 2.4% in 2020. Currently a number of factors are influencing the growth in the EV market: A) increase in the environmentally conscious consumer, B) increase in fuel prices, C) reduced maintenance costs, D) reduced greenhouse gas emissions, and E) current government incentives. The increase in market share of EV's will lead to the demand of publicly accessible EV charging



via tourism. As a majority (90%) of EV owners will own a home charger that will be used for the day to day use but will become greatly important for tourism destinations as these EV owners travel away from home. The implementation of a charging network between all sectors (public and private) will assist with the



ease of range anxiety. Range anxiety has been a large barrier to the further adoption of electric vehicles. We will more than likely see a similar trend with EVs as seen with the early adoption of the automobile. As the batteries improve on EV and are able to travel further and further on a charge we will have less demand for EV charging ports. As we wait for these improvements regions will look to improve their perception with EV users by developing a robust network of EV chargers (level 2 and 3) at a number of locations that will include a mix of private business and public spaces (city and county).

Electric Vehicle Infrastructure findings across the Country

The lowa Energy Office provided several case studies published by charging station networks about their customers that provide some insight.

Leading Retailer Partners with ChargePoint to Attract and Retain Loyal Customers: A case study published by ChargePoint, which describes the effects of installing EV charging stations at a number of locations for a major retail chain in California. In the study, the retail stores found an average increased dwell time of 50 minutes (327%). The retail stores provided \$430 worth of electricity to its customers and the chain saw an increase in revenue of \$56,000 due to the installation and access of the EV charging stations. (7)

Easton Increases Shopper Dwell Time with Cutting-edge Fast Charging Technology: A case study published by ChargePoint, about charging stations at Easton, a retail center in Columbus, Ohio. ChargePoint reports that Easton has about 350 PEV drivers using the stations per month and that PEV drivers spend 40% more time at Easton than the average non-PEV driver. At the time of the case study, the site had five direct current fast chargers and two Level 2 EVSE. (8)

Evaluating Electric Vehicle Infrastructure: The State of New Hampshire completed in the study 2019. The study determined how the state can best support EV charging infrastructure through policies and investments. The study states, establishing a robust charging infrastructure

New Hampshire's tourism industry as EV drivers from surrounding states realize they can visit the natural resources found in New Hampshire. (22)

"Investments made now will offer greater benefits than investments made two years from now and assert New Hampshire as a state where the growing number of EV drivers will be supported with EV charging infrastructure. "

The New Hampshire study identified the need for a great density of chargers due to the rugged terrain and colder weather experienced in the Northeast. Both statements are true for Northeast Iowa and should be considered when identifying potential locations across the region. In addition to infrastructure the New Hampshire study highlights results from a survey completed by New England EV drivers.



Relevant findings from New Hampshire Infrastructure study:

- The most common duration of public charging was "15-40 minutes"
- 70% of drivers patronized local businesses while using a public level 2 charger
- The most commonly reported range of spending was between \$20-\$40 while using public level 2
 charging

Examples of EV Implementation around the United States

Statewide: Oregon Tourism | Plug & Pinot

The State of Oregon has been capitalizing on electric vehicle travel for the past 5+ years by promotion electric byways:

"Oregon is home to one of the largest and most robust networks of electric vehicle fast-charging stations in the U.S. And in between the many EV charging stations are scenic routes dotted with environmentally friendly businesses - hotels, spas, wineries, breweries and restaurants. So while you're busy practicing sustainable travel along the woodsy back roads of Oregon, stop by an charming landmark and charge your car. Driving an electric car through Oregon definitely has its perks."

An example of a successful project was implemented In 2014, a Plug & Pinot promotion was developed to promote electric vehicle travel in partnership with area wineries.

"We want people to get outdoors and see us," he said, "We want folks to visit wine country and see what's happening here and if they travel by electric vehicles all the better. EVs are clean transportation and it's a pleasure for us to offer our visitors the charging service." - Gerry Rasch, Brooks Winery

Regional Network: Plug-In NWC | North Central Washington

This non-profit committee works under the umbrella of the North Central Washington Economic Development District to encourage electric vehicle tourism. The organization advocates electrification of all forms of transportation, hosts educational events, and funds installation of Level 2 charging stations through north central Washington.



Mission of PINCW is "to encourage adoption of plug in vehicles throughout the region. We do this through a combination of outreach, education, projects and programs."

One of the recent programs revolves around PINCW as an entity to accept charitable donations towards the purchase of high amperage Level 2 (haL2) electric vehicle charging stations, provide planning support to help get them installed in strategically chosen locations in North Central Washington, and then providing the stations free of charge as a 3-year "lease" to businesses or organizations that would like to act as the caretakers of these stations.

Located in the small community of Folsom (pop. 716) the Giddy Up is a small cafe that serves coffee, tea, smoothies, pastries, sandwiches, and soup. The cafe is in the heart of Folsom and provides a 32 amp Clipper Creek charger is free to customers of the Giddy Up and customers are required to request the

key from staff.

Since the cafe's charging capacity is not as fast as the Level 1, "some people study or work and grab food or drink while they charge up," according to Mario Allen, a barista at the café. "We definitely get more out of town customers migrating here to use the service," Allen said.



Electric Vehicle Tourism related to Outdoor Recreation

EV Installations at National Parks

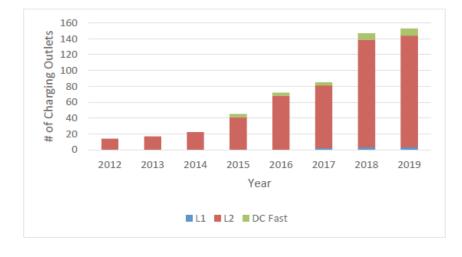
Since the adoption of the Green Parks Plan in 2012, the National Park
Service has installed electric vehicle (EV) charging stations at National
Parks around the country. "The NPS supports a variety of alternate
transportation options for NPS employees and visitors, such as walking,
biking, and public transportation. Nevertheless, for many national parks—
particularly those in remote locations—private vehicles are often the most
convenient form of travel. To encourage visitors to drive EVs to national
parks and reduce local air pollution and greenhouse gas emissions, the NPS
has installed EV charging stations at parks across the United States." (21)



Solar panel equipped charging station A solar powered EV charging station at New Mexico's Petroglyph National Monument.

Photo: Frank Burcham, Land of Enchantment Clean Cities.

EV Charging Outlets



The number of EV Charging opportunities has risen ever year in the National Park System from under 20 in 2012 to just under 160 outlets in 2019. With all levels of chargers being represented with level 2 being the most prevalent. (Graph from Chris Schwing, NREL)

Challenges to Rural Outdoor Locations

The National Park Service has identified four main challenges for the installation of EV chargers;

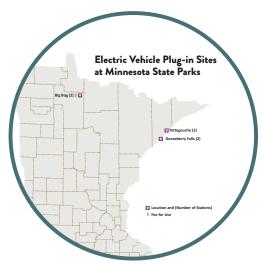
- 1) Lack of Access to Electricity
- 2) Historical Preservation
- 3) Fee Collection
- 4) Park Conditions

EV Installations at State Parks

Minnesota

Minnesota Department of Natural Resources currently provides EV charging stations at three parks. (16) Each park has two plugs and has an on-site campground. State Parks that offer EV level 2 are:

- Big Bog State Recreation Area in Waskisk, MN
- Tettegouche State Park in Sliver Bay, MN
- Gooseberry Falls State Park in Two Harbors, MN



Map of EV Chargers in Minnesota State Parks from Minnesota DNR

Michigan

In the summer of 2022 the State of Michigan will begin the installation of 30 level 2 electric vehicle charging stations in 12 state parks and fish hatchery. These first 30 EV charging stations will be phase 1 of a multi phase plan, with plans for the Upper Peninsula in phase 2.

"We know that Lake Michigan is a popular circle tour for folks who drive around the lakes and visit places like Ludington, Traverse City, Petoskey," said Scott Whitcomb, director of the Office of Public Lands in the DNR. "So we wanted to assure travelers and visitors that if they were making that trip with their EV, they would be able to find charging at our state parks, which are great places to visit anyway."



Petoskey State Park, Photo Credit Cody Scanlan/Holland Sentinel

In addition the introduction of EV chargers the State of Michigan has begun the development of new alternative fuel corridors. (26)

"The corridors will complement our ongoing efforts to fix our transportation infrastructure, install electric vehicle chargers, and create tens of thousands of good-paying auto jobs. We will keep getting things done to keep Michiganders safe on the road, rebuild our roads and bridges, and grow our economy." - Gov. Gretchen Whitmer

Electric Vehicle Tourism in Iowa

State of Iowa vs United States

As reported by the lowa DOT "as of April 2022 an estimated 9,400 electric vehicle's are registered in lowa and 270 public Level 2 and Level 3 fast charging stations are available." When the State of lowa is compared to the rest of the United States we rank 21st overall in a Bumper.com analysis for Best States for Electric Cars. (4) The 2020 study compares and ranks all the states based on EV financial incentives, EV infrastructure. EV charging station growth, EV registrations, EV registration as a percentage of total vehicle sales, and charging stations per 100k population. All rankings for lowa are below from the study:

Category	Iowa's Ranking
Overall	21
EV financial incentives	25
EV infrastructure	41
EV charging station growth	33
EV Registration vs nation	36
EV Registration as a % of total state vehicles	41
Charging stations per 100k population	32

EV Charging Infrastructure: The poor EV infrastructure ranking identified in the *Best States for Electric*Cars study will be a deterrent for tourists looking to travel to our state and region. Without the necessary infrastructure in place it will become difficult for lowa to overcome "range anxiety" with travelers.

Completed Planning: lowa has been working on the development and growth of electric vehicles since 2016 when they released the *lowa EV Market Study*, *lowa Energy Plan*, and the *Charging Forward: lowa's Opportunity for Electric Vehicle Infrastructure Support* in 2019. These previously completed plans and studies will allow lowa to lay the groundwork for future development and implementation of projects to support the growth of electric vehicles and the infrastructure required to utilize them.

Future Development

The Iowa Department of Transportation (DOT) is bringing together statewide partners to prepare an Iowa's Electric Vehicle Infrastructure Deployment plan for state highways and interstate system. The development of this plan will allow the lowa DOT to become eligible to receive federal funds to support the implementation of needed electric vehicle infrastructure.



Vision: A readily accessible electric vehicle ecosystem that promotes mobility, reliability, and sustainability for the overall economic and social wellbeing of lowa.

Goals

- 1) An electric vehicle fast-charging system that supports regional and interstate travel
- 2) A local electric vehicle system that promotes equitable access and mobility throughout Iowa's communities.
- 3) A charging network that helps provide the traveling public with a variety of transportation and energy options.
- 4) A sustainable transportation and energy system that can adapt to economic, technological, and environmental changes while providing a high level of system reliability.
- 5) A charging network that supports long-term electric vehicle station success which maximizes economic benefits for consumers
- 6) A growing network of chargers that fosters innovation and collaboration to expand economic opportunities

As major corridors cross the state, it's crucial for lowa to have sufficient charging infrastructure to meet demand from both short- and long-range travelers. This will help our state remain competitive, reduce potential future emissions, and could help spur economic growth. - Iowa DOT

Currently Available Public EV Chargers in Northeast Iowa and Online Reviews

A) Fairfield Inn & Suites in Decorah

- 7 kW AC. Dual head ChargePoint station in the hotel parking lot. Please see the front desk for access to the station. Free for registered users staying at hotel.
- 24 reviews on Plugshare since 2017

B) Decorah Bank and Trust

- Permission from Bank required for use
- 7 reviews on Plugshare since 2019

C) Luther College in Decorah

- 7kW AC Two ChargePoint Level 2 chargers located in the Nustad Parking lot, behind Olin Hall.
- 26 reviews on Plugshare since 2016
- "Stopped by with my ICE. With this station in place I can finally complete my trips from lowa City to Southern MN in my LEAF!" dfishbau, Nissan LEAF
 - "Walked down to Pulpit Rock on a wonderful afternoon" Subarubadrew, Tesla

D) Featherlite Trailers West of Cresco

- Ask guard shack before charging. Unsure if EV Charging is permitted.
- 2 reviews on Plugshare since 2021

E) MiEnergy Cooperative in Cresco

- WiFi, Restrooms, EV Parking, Dining, Shopping
- 7 reviews on Plugshare since 2021

F) RW Pladsen in Waukon

- 1 review on Plughshare since 2019
- "Powered Off" Jesse Chevrolet Bolt

G) REC Allamakee-Clayton Electric

-1 review on Plughshare since 2021

H) Fayette Co. Courthouse

- 7 kW AC. Northwest corner of courthouse. Cross street is E. Main St. Plenty of restaurants nearby.
- -28 reviews on Plugshare since 2014
 - "Charged successfully. Location on beautiful town square with lots of cafes." Robert, Nissan LEAF
 - "Euphoria coffee is great, if you're killing time here." Subarubadrew, Tesla
 - "Got a full charge and a good night's sleep. Great location between DC Fast Chargers." Joe C, Chevrolet

I) Marquette City Park

- 8 reviews on Plugshare since 2021
 - "Great stop. Got 45mph charge rate. Good breakfast at nearby bar and cafe." Michael, Tesla

J) McGregor

- -1 review on Plugshare since 2021
 - "Picked up 44 miles over lunch at Old Man River!" Stang3, Ford Mustang

K) Guttenberg

- 4 reviews on Plugshare since 2021
 - "It's easy walking distance of many shops, bars, and restaurants. Zap!, Chevrolet Bolt

L) Elkader (all 5 plugs)

- 7 reviews on Plugshare since 2019
 - -"Worked great, less than a mile to downtown. I appreciate this charger a lot and am planning to come

back to explore Elkader and all it has to offer in the future. Thank you." - DB Nissan LEAF

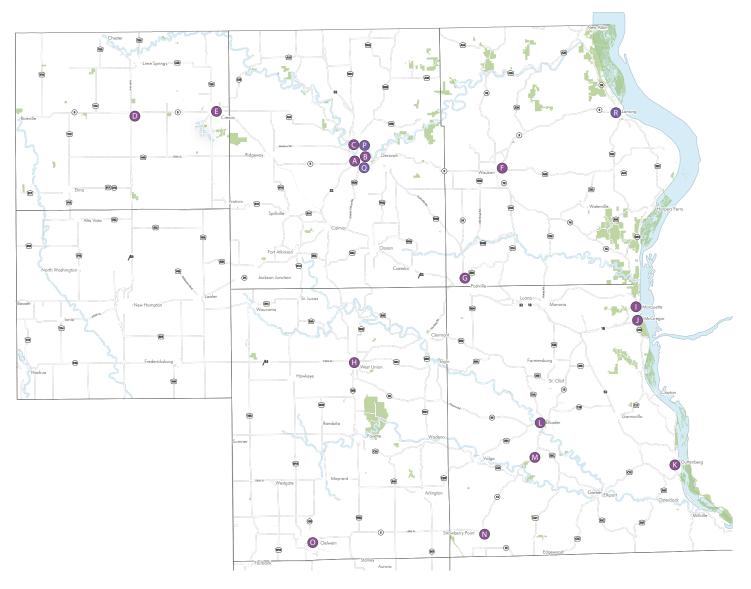
M) Barn on Bluff B&B * No reviews

N) Strawberry Point Downtown

- -1 review on Plugshare since 2021
 - "Easy access to everything downtown." Zap!, Chevrolet Bolt

O) Oelwein Public Library * No reviews

Currently Public EV Charing Station Map (June 2022)



Current Operational Public EV Chargers

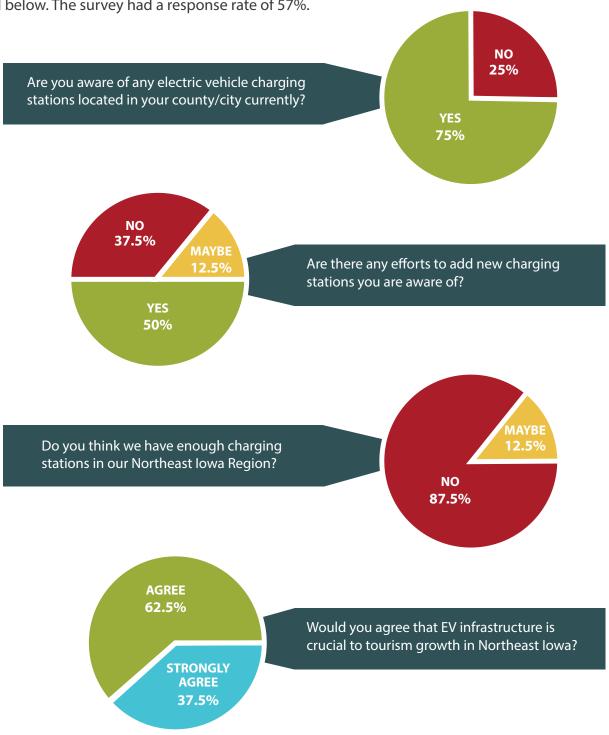
- A Fairfield Inn & Suites in Decorah
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- C Luther College
- Featherlite Trailers
- MiEnergy Cooperative in Cresco
- RW Pladsen in Waukon
- G REC Allamakee-Clayton Electric

- H Fayette Co. Courthouse
- Marquette City Park
- Downtown McGregor
- **K** Downtown Guttenberg
- Downtown Elkader
- M Barn on Bluff B&B
- N Downtown Strawberry Point

- Oelwein Public Library
- P Downtown Decorah (Spring St) *Future Development
- O Downtown Decorah (State St & Main) *Future Development
- R Lansing Clear Creek Park *Future Development

Local Perceptions and Projected Benefits

Northeast Iowa economic development, tourism, and chamber of commerce leaders were asked about their current perceptions and estimated benefits of expanded electric vehicle infrastructure in the region. The survey Electric Vehicle Tourism Impact Survey is included as Attachment C and a summary of the results can be found below. The survey had a response rate of 57%.



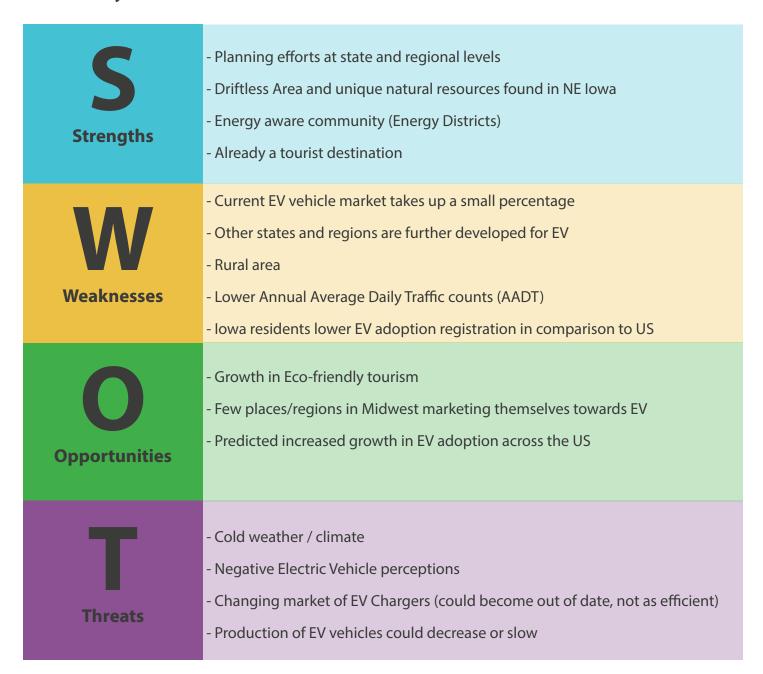
Electric Vehicle Tourism SWOT Analysis



Summary of SWOT

A SWOT analysis "is the framework for identifying and analyzing an organizations (regions) strengths, weaknesses, opportunities, and threats. The primary goals of a SWOT analysis is to increase awareness of the factors that go into making a decision or establishing a strategy." (36)

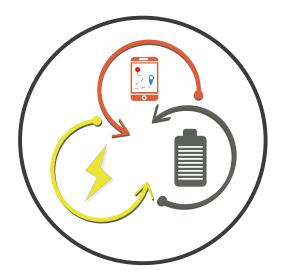
SWOT Analysis



Recommendations

Education

The first step to improving and expanding EV tourism activities starts with education. After reviewing the survey completed by tourism professionals from Northeast Iowa, results indicate that EV infrastructure is crucial to tourism grown in the region. However, a number of tourism professionals are not fully aware of current availability or assistance available. Tourism professionals are often the first point of contact for an individual or family traveling to the area. Having some background knowledge related to EV travel would be a step towards branding Northeast Iowa as a EV friendly destination.

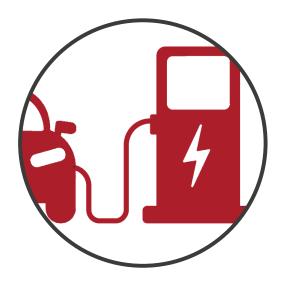


Electric Vehicle 101

- How Electric Vehicle's work
- How often they need to "fuel" the vehicle

Infrastructure

- Background knowledge on EV Chargers (Level, 1, 2, 3)
- Where they are located in their community
- What sites/destinations have an EV charger



Network Capacity

- Work with businesses to answer or connect them with the right folks to get an EV Charger.
- Encourage businesses to keep up to date information on their EV Chargers
- Provide training and resources to county and community tourism leaders on marketing EV for travel.
- Continue existing work group collaborations to keep stakeholders up-to-date on EV infrastructure, current trends, and innovative marketing campaigns

Education Examples

Trainings

The Winneshiek Energy District has been a national, statewide, and regional leader when it comes to providing trainings and educational materials to the area. In the past year they have hosted a presentation by Upper Explorerland regarding EV planing. Events like these will be critical for the expansion and adoption of EV culture for increased EV tourism.



One-page Informational Handouts

The Iowa Department of Transportation (DOT) has released 4 pages of information that covers: A) lowa's background related to EV's, B) Vehicle Types (Hybrid & Electric), C) Charging Stations Level 1, 2, 3 and D) Fast Charger infrastructure. This information provided at the State of Iowa level is much needed and would be benficial at a City, County, or Regional level. These documents are included as Attachment D.



Events and Networking

All the Energy Districts in Iowa aim to provide an opportunity for the community to come out and learn about energy conservation, EV's included. Continuing these events in the future with the continued inclusion of Chambers, Main Streets, and Economic Development Directors will assist with the expansion of EV infrastructure.



Market Northeast Iowa as a EV Friendly Destination

Marketing EV travel is important in the short and long-term to build consumer trust and enthusiasm. The following page details specific actions and recommendations to expand EV tourism in Northeast lowa.



Market EV Travel Suggestions

- Create EV itineraries (Example in Attachment A)
- Explore partnerships with scenic byways and other organizations
- Co-Market with existing EV companies
- Collaborate with ChargePoint, Blink, and other EV Charging companies
- Explore partnerships with local car dealerships
- Establish branded EV way-finding signage within the region
- Research and conduct outreach to car rental companies
- Consider unique partnership opportunities (Electric Summer Social Tour)

Marketing Examples

Electric Byway

Oregon

"Oregon is home to one of the largest and most robust networks of electric vehicle fast-charging stations in the U.S. And in between the many EV charging stations are scenic routes dotted with environmentally friendly businesses — hotels, spas, wineries, breweries and restaurants. So while you're busy practicing sustainable travel along the woodsy back roads of Oregon, stop by an charming landmark and charge your car" - Travel Oregon, Author



Free EV Charging

Richmond, Virginia

Electric vehicle charging is free in Richmond due to a partnership with Volta Charging to provide the stations at no cost to the tax payers. Each Volta station offers advertising while providing free charging for drivers. "I am exited to see the EV chargers because customers and tourists who frequent downtown Richmond as well as residents have access to resource that is common in other commercial districts" - Wesley Alexander, CEO of CoBiz (30)



Drive Electric VT: It's Time to Plug In

Vermont

In 2015, Vermont released a video series encouraging residents to drive electric. Fast forward to 2022 Vermont leads the nation in EV Charger Installations and recently announced the installation of 11 more fast charging stations near highways and ski areas. Once installed all residents and tourists "should be within an easy 30-mile drive from a fast charging station." (22)



Electric Summer Social Tour

New Brunswick, Canada

Now in its second campaign, the Electric Summer Social Tour is traveling to 104 municipalities across New Brunswick "to experience" local at its best and sunniest." In the first campaign they traveled over 12,00 miles, featured 376 businesses, across 87 communities and all while traveling in an electric vehicle. (20)



EV Infrastructure

EV charging stations will need to be expanded. The map on page 17 gives clear picture of the current availability and there are noticeable gaps. A expansive network of public charging stations will need to be developed to overcome range anxiety for out of town travelers.

Expand Charging Station Locations

- Install charging stations in downtown locations
- Work with local city councils and counties to expand station locations
- Install charging stations at natural areas/parks
- Explore partnerships with Iowa DNR for State Park locations
- Work with county conservation boards on locations in campgrounds
- Assist private campgrounds with development of EV infrastructure
- Install charging stations at interested private businesses
- Explore opportunities with wineries, breweries, and pumpkin patches
- Collaborate with hotels, motels, and Airbnbs to install charging stations at lodging facilities

EV Infrastructure Program Example

New Jersey Electric Vehicle Tourism Program

New Jersey

The New Jersey EV Tourism Program offers "incentives promote electric vehicle adoption and tourism through investment in EV chargers at key New Jersey tourism sites, landmarks, and other area of interest." The program offers \$2,000 - 5,000 per Level 2 charger and up to \$75,000 per DC fast charger. The program has a scoring criteria that could be adapted to be utilized in lowa.



Factors to Consider when Installing EV Infrastructure

Lighting: EV chargers have been placed in a dark underutilized space in a parking lot or backside of a building. Providing light at these locations will allow users to feel safe when they are charging their vehicles at night.

Restrooms/Shade: EVs need time to charge by providing the opportunity for travelers to utilize multiple services in stop. These amenities would provide a positive experience for EV users and would encourage them to revisit the site again.

Food and Beverage/Retail shopping nearby: EV users will typically need to utilize the charger for a period of time (15-40 min) that will allow them the ability to go shopping. In a study completed in New Hampshire (22) it was identified that EV users are most likely to spend between \$20 and \$40 while they are stopped for charging on a road trip.

Recreation: Especially at natural areas, it's attractive for a traveler to want to get out and "stretch your legs" on a drive and providing the ability to charge your EV would again provide multiple resources in one stop.

Shelter/Covered Parking: When its raining and snowing it can cause users to not want to return from a bad experience.

24/7 access: As compared to a 24 hour gas station if its not open, no one would have access

Best Practices to follow when installing an EV Charger:

- Safety (lighting, visible location)
- Protection from the elements (Snow/Rain)
- Proper Signage marking it as an EV charger space

The next few pages will have potential suggested locations for EV Level 2 chargers. Consideration was made for the selection of each charger location based upon a number of considerations and recommendations from other studies. Each site proposed in this plan is being seen through a tourism and public access point of view. Other facts such as necessary infrastructure, property owner approval, and other factors were not included in this study at this time. This was done to assist with the beginning of a discussion for potential locations and potential number of EV Chargers needed to build out a comprehensive network in NE Iowa.

Counties, Cities, Non-profits

Public access chargers

The largest communities in Northeast Iowa are Decorah (Population: 7,587) Winneshiek County and Oelwein (Population: 5,920) in Fayette County. These and the surrounding communities are small, quaint communities with historic downtowns. Downtown areas are perfect locations for electric vehicle charging stations. These locations would allow the traveler to spend time at local restaurants and shops while waiting for their vehicle to charge, boosting the tourism economy in these small towns.



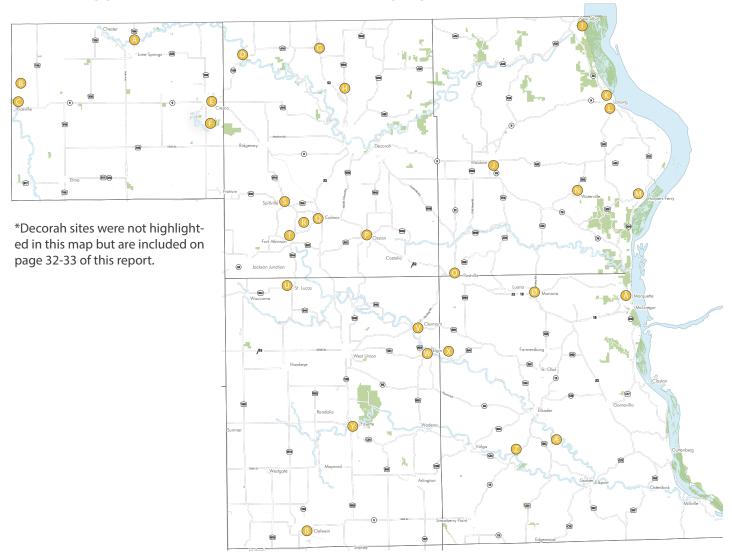
Proposed locations

Each location suggested in the map on page 27 are either owned by a non-profit, City, or County. These locations were recommended due to their:

- Proximity to amenities
- Close to Highways
- Being a destination site
- Overnight charging capability
- Non-profits mission
- Downtown and access to retail opportunities
- Outdoor Recreation
- Location in a gap of EV chargers, making a complete charging network across the region



Map of Suggested Potential EV Level 2 Charging Locations



Legend

- Lidtke Mill Campground
- Lake Hendricks Campground
- Wapsi-Great Line Trail Head
- Kendalville Park & Campground
- Cresco Chamber of Commerce
- Vernon Springs Nature Center
- Laura Ingalls Wilder Museum
- Seed Savers Exchange
- New Albin Splash Pad
- Waukon City Park
- Lansing City Pool, Mt. Hosmer Park, Clear Creek Park
- **Driftless Area Education & Visitors Center**

- M Harpers Ferry Boat Landing
- Waterville School
- Northeast Iowa RC&D
- Ossian City Park
- South Winneshiek School
- Lake Meyer
- **Bily Clocks**
- Fort Atkinson Library
- St. Lucas Museum
- Clermont Public Library
- Elgin Public Library
- Gilbertson Conservation Area

- Downtown City of Fayette
- Osborne Nature Center
- Motor Mill
- Monona Community Center
- A Driftless Area Wetland Centre
- Orville Christopher Park Oelwein

*These proposed sites are only recommendations based upon similarities to other EV charging networks found in other regions in the US.

State Parks and Owned Property

State Partners

State parks are popular destination sites for folks traveling to Northeast lowa. The proposed locations include:

Yellow River State Forest: With over 8,900 acres of across Allamakee County. The State Forest offers camping, hiking, mountain biking, fishing, hunting, and more. EV charging could be made available near Big Paint, Little Pain, and Creekside Campgrounds, or the park office to allow for closer access to needed infrastructure and easy access for the public.



Effigy Mounds National Monument: The continued addition of EV charging at other National Park Service properties may lead the inclusion of Effigy Mounds. The park is lowa's only National Monument and is located on the National Great River Road Scenic Byway. An EV Charger could be installed near the Visitors Center to allow for easy public access, highly visible area, and would not disturb any of the grounds at the site.

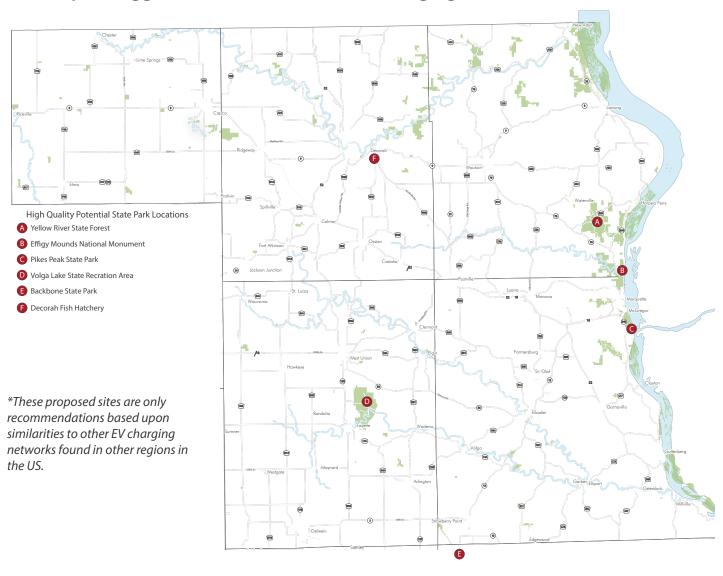
Pikes Peak State Park: Located on the Great River Road Scenic Byway Pikes Peak features miles of trails, Bridal Veil Falls, breath taking views of the Mississippi River, and camping. Public EV chargers could be made available at the overlook parking lot to allow for easy access to the park.

Volga River State Recreation Area: A 5,700-acre area located in Northeast Iowa nicknamed "Little Switzerland" provides visitors to Fish, boat, hunt, or stay at the campground. EV chargers could be located near the campground for overnight use and/or at the general parking lot as folks arrive at Backbone for a day trip.

Backbone State Park: lowa's first state park and provides access to a 21 mile hiking trail system, rock climbing, fishing, boating, overnight cabins, and a concession stand is open. EV chargers could be located at each cabin for overnight use and/or at the general parking lot as folks arrive at Backbone for a day trip.

Decorah Fish Hatchery: The Decorah Hatchery not only functions as a hatchery but a destination for families to feed the trout, see Siewers Spring waterfall, fish along the Coldwater trout streams, and is home to the famous Decorah Eagles Nest and experiences numerous visitors a year. The site provides access to shade, bathroom, drinking water, and plenty of outdoor actives to enjoy while your vehicle is charging. Lighting on the site would allow for 24/7 access to the charger. A charger could be located in a parking space near the restroom facilities.

Map of Suggested Potential EV Level 2 Charging Locations at State Parks



Private Businesses and Landowners

Private Partnership

The opportunity for partnerships with private businesses will be crucial in developing a robust charging network in Northeast Iowa. Overnight accommodations will be a top priority in providing the necessary infrastructure for travelers in the region but the opportunity to charge while traveling the region will assist in easing range anxiety.

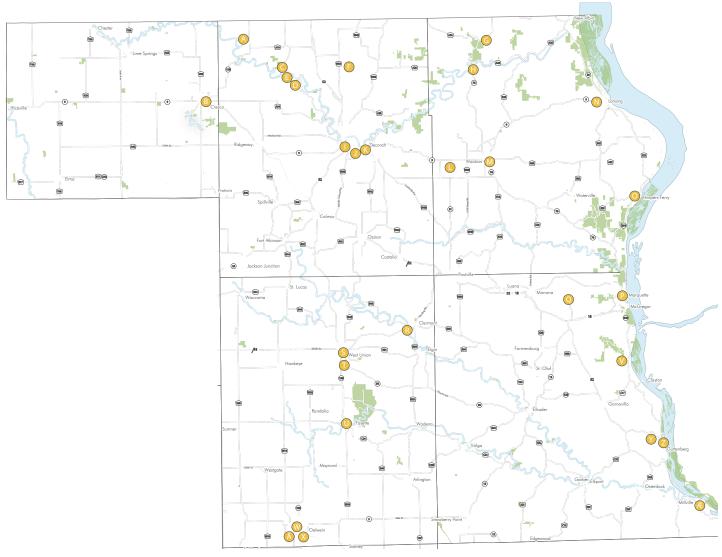
Hotels/Motels/Inns: The opportunity for overnight stays is critical to the tourism industry in Northeast Iowa. To accommodate EV travelers the opportunity to charge overnight will not only benefit the lodging industry, but will allow for extended stays, increasing the economic growth potential through tourism in the region. The only hotel with an EV charging station in the region is the Fairfield Inn & Suites in Decorah.

Vacation Rentals (Airbnb/Vrbo.): Currently only Airbnb has a EV Charging amenities in the filters tab of the search. When searching the area of Northeast Iowa of the 500-600 locations available only three locations were identified in the five county area. The homes were located in Decorah, Guttenberg, and Waukon. Each site required an additional fee for use of the EV charger.

Campgrounds/RV Parks: Can they handle the additional power needed to charge an EV at a campsite? Upon researching the current state of campgrounds electrical setup it appears they are already overloaded trying to charge the camper trailers that are showing up at campgrounds today. The solution being proposed is campgrounds install EV charging stations for EV users. Kampgrounds of America (KOA) has recently begun partnering with Jamestown Advanced Products to provide Level 2 EV chargers in 2022 across its network of 520 campgrounds. (38)



Map of Suggested Potential EV Level 2 Charging Locations



- Harvest Farm Campground
- Super 8 Hotel Cresco
- Chimney Rock Campground
- Bluffton Bar and Campground
- Whites Riverside Bluffton Campground
- Winneshiek Wildberry Winery
- Sportsmen Motel
- Upper Iowa Resort & Rental
- Country Inn and Suites Decorah
- Quality Inn & Suites Decorah
- Super 8 Motel Decorah
- Empty Nest Winery

- M Boarders Inn & Suites Waukon
- Red Barn Campground
- Portside
- P Cobblestone Inn Marquette
- O Spook Cave & Campground
- R Skip-a-way Campground & Resort
- S Best Rest & Suites West Union
- Elms West Union
- Boarders Inn & Suites City of Fayette
- Paradise Falls Campground
- W Super 8 Oelwein
- Cornerstone Inn & Suites Oelwein

- Eagle View Motel & Retreat
- Lakeside Campground
- **Promiseland Winery**
- A Lakeshore RV Resort & Campground
- *These proposed sites are only recommendations based upon similarities to other EV charging networks found in other regions in the US.

City of Decorah

Regional Leader

Decorah and Winneshiek County have led the region in EV vehicle registration, home of the first Energy District in Iowa, and have a strong sustainability presence from Luther College. In addition, to having the largest population in Northeast Iowa and a well known tourist destination it will require more public EV chargers locations.



Current EV Chargers: The City of Decorah currently (summer 2022) has five different options for EV users to utilize with each site being different (access & cost). A future public charging option will be installed near the downtown.

Potential Publicly Owned Chargers: Publicly available EV chargers will be required for EV tourists to visit the community. The sites proposed are suggested due to their highly visible location, access to amenities, high traffic, access to downtown business district, recreational opportunity, and future use.

Potential Lodging Locations: With the predicted growth of the EV market share lodging locations will need to adapt and install EV chargers for customers or risk the chance of missing out on customers because of a lack of a basic amenity for EV users.

Potential State Properties for EV Chargers: The Decorah Fish Hatchery is a destination visited by thousands of visitors from Northeast Iowa and around the country. Visitors spend time feeding the trout at the hatchery, catching a glimpse of the famous Decorah Eagles, or cast a line in the trout stream passing through the property. The site has access to basic amenities (restrooms, shelter, lighting, drinking water), space for parking, and visitors could easily spend an hour at the site as they wait for their EV to charge.

Map of Current & Suggested Potential EV Level 2 Charging Locations in Decorah Decorah *These proposed sites are only recommendations based upon similarities to other EV charging networks found in other regions in the US. **Current EV Charging Stations Potential Publicly Owned Stations Potential Owned by Lodging** A Luther College A Decorah Pulpit Rock Campground A Country Inn &Suites Fairfield Inn & Suites B Carl Selland Park B Quality Inn & Suites Downtown Parking Lot Barnhart-Van Peenen Park Trail Head C Super 8 Hotel Decorah Bank & Trust Decorah High School

Decorah Public Library

G Decorah Middle School

(H) Carlson Park

F Winneshiek County Courthouse *Street parking

AirBnB Host

City Street Parking *not yet installed

Electric Vehicle Tourism Study Actions and Recommendations | 33

Potential on State Property

A Decorah Fish Hatchery

Conclusion

Northeast Iowa EV Network

Northeast lowa has traditionally been known for its regional tourism draw, county energy districts, and a higher number of EV registered vehicles than other rural areas of Iowa. As the number of EV chargers and vehicles grow it is important to plan and implement collectively.

Northeast Iowa has the opportunity to become a EV friendly destination in Iowa as no other regions have laid claim to the idea. With foresight, education, and collaboration Northeast Iowa could build and attract another tourism demographic. The able to adapt and provide tourists the means to travel has been at the heart of tourism since its inception. The EV landscape will change as vehicles improve, batteries last longer, EV chargers are faster, and people gain a better knowledge on this technology like we have with the internal combustion engine. Northeast Iowa will need to plan for the changes and improvements and with



any change be able to adapt when the needs arise, thus making education a center stone for EV adoption.

To put it simply, "if we don't provide the infrastructure for electric vehicle travelers, they won't come to Northeast Iowa"

- Mallory Hanson, Fayette County Economic Development & Tourism.



Driftless Area and River Bluffs Scenic Byway EV Itinerary*

DAY ONE

If you're staying overnight, charge at Fairfield Inn & Suites ChargePoint Charging Station 2041 IA-9 Decorah, Iowa

10:00AM

Start the day with coffee and breakfast at Impact Coffee

Decorah, Iowa

11:00AM

Shop downtown and grab lunch to go

Decorah, Iowa

02:00PM

Drive through Yellow River State Forest

Harpers Ferry, Iowa

Stop for dinner at Fennelly's and shop downtown while you charge Blink Charging Station 207 North Main Street Elkader, Iowa

08:00PM

Stay overnight at Boarders Inn & Suites

Fayette, Iowa

DAY TWO

08:00AM

Have breakfast and coffee at The Sugar Bowl

Fayette, Iowa

09:00AM

Explore Volga River State Recreation Area and

Echo Valley State Park

Fayette and West Union, Iowa

Stop for lunch at Townhouse and shop downtown while you charge

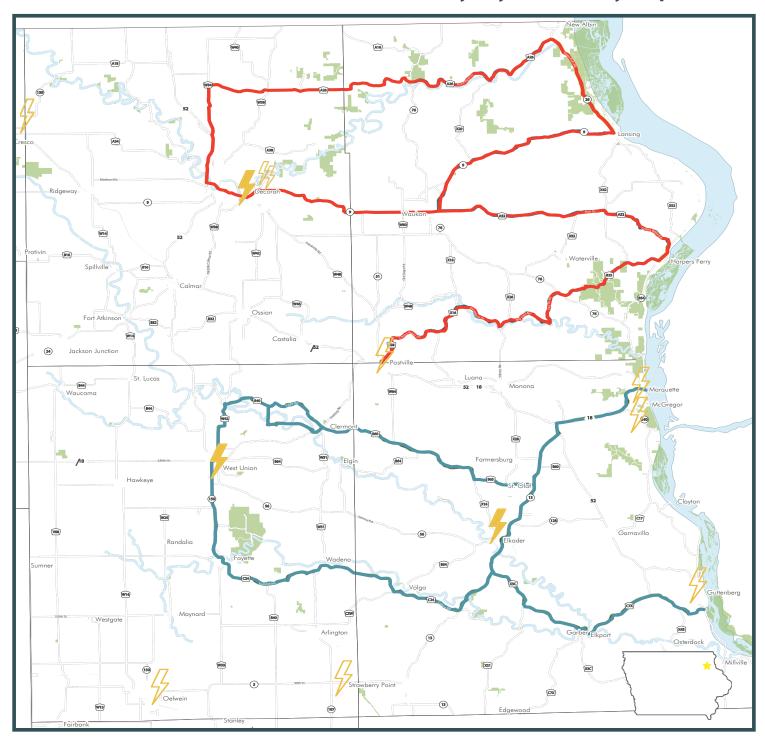
ChargePoint Charging Station 100-198 North

Vine Street, West Union, Iowa

*Not suitable for EV vehicles with a range under 100 miles



Driftless Area and River Bluffs Scenic Byway EV Itinerary Map



Legend





Driftless Area Scenic Byway



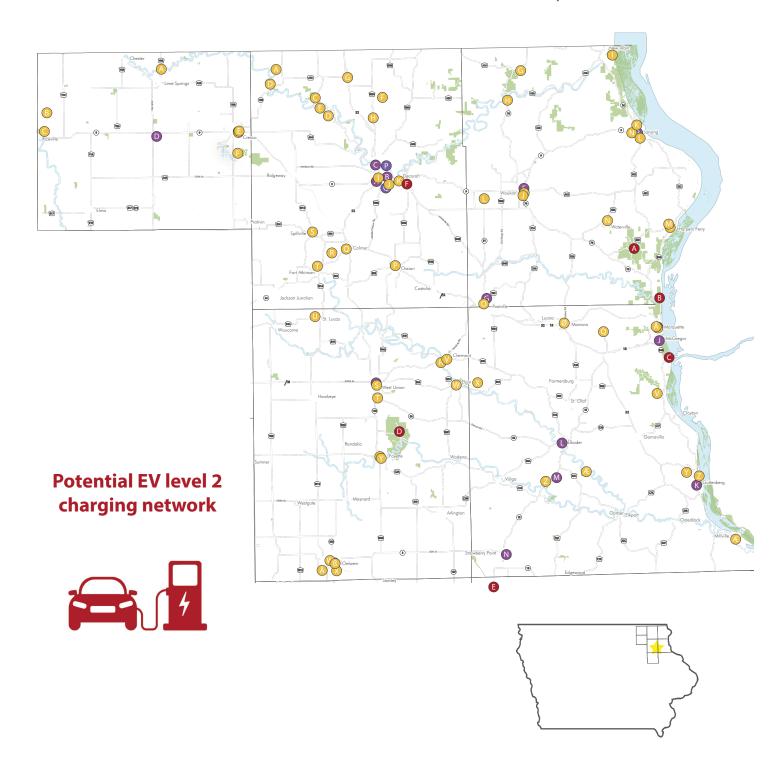


River Bluffs Scenic Byway





Potential Suggested EV Charing Station MapThis is what the network of NE Iowa would look like if all recommendation were implemented.





Electric Vehicle Tourism Impact Survey

Please help us gather input on your perceptions regarding the impact electric vehicles have/will have on tourism in Northeast Iowa now and in the future. Thank you!

* Re	Required	
Ski	kip to question 1Skip to question 1	
	Contact Information	
1.	Organization *	
2.	Name and Title *	
3.	Email Address *	
4.	Phone Number *	
	Current Knowledge	
5.	Are you aware of any electric vehicle charging stations Mark only one oval.	s located in your county/city currently? *
	wark only one oval.	
	Yes	
	No	
	Maybe	

	If yes, where are they located? Please also include the type of charging station (Level 1, Level 2, Lev 3, etc.) if you have that information.
,	Are there any efforts to add new charging stations you are aware of? *
1	Mark only one oval.
	Yes
	○ No
	Maybe
	If yes, what are those efforts?
	Opinion about Tourism Value of EV
	•
	Do you think EV infrastructure will affect tourism in Northeast Iowa? *
1	Mark only one oval.
	Yes
	◯ No

10.	Do you think we have enough charging stations in our Northeast Iowa Region? *		
	Mark only one oval.		
	Yes		
	◯ No		
	Maybe		
11.	Would you agree that EV infrastructure is crucial to tourism growth in Northeast Iowa?*		
	Mark only one oval.		
	Strongly agree		
	Agree		
	Neutral		
	Disagree		
	Strongly disagree		
12.	If you disagree, why?		
13.	Any other thoughts or input you would like to add?		
	Thank you for your time and input!		

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technology to generate electricity required to move the

vehicle. FCEVs are powered by hydrogen and produce no tailpipe emissions - only warm air and water vapor.

VEHICLE TYPES

HYBRID & ELECTRIC

NATIONAL ELECTRIC VEHICLE INFRASTRUCTURE PROGRAM (NEVI)

In February 2022, quidance was issued for the National Electric Vehicle Infrastructure (NEVI) Program, which provides federal funds for strategic deployment of an electric vehicle (EV) charging infrastructure.

ALTERNATIVE FUEL CORRIDORS are federally designated routes on major highways that allow for inter-city, regional, and national travel using lower-emission vehicles. In Iowa they are Interstates 29, 35, 80 and 380.

The NEVI Program provides up to \$7.5 billion to make EV chargers accessible for public use by establishing a nationwide

interconnected network across the U.S., located primarily along alternative fuel corridors. Funds include \$5 billion for the NEVI Formula Program and a \$2.5 billion discretionary grant program.

Iowa DOT has established a Joint Office to oversee development of an EV Plan for Iowa that supports these transportation electrification efforts.

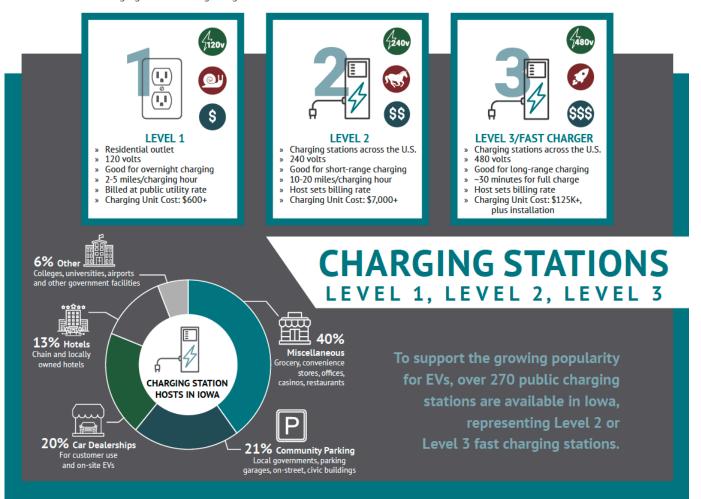
Required State EV Plans under NEVI must:

- » Be open to public and commercial fleet operators
- » Prioritize EV charging stations along designated corridors

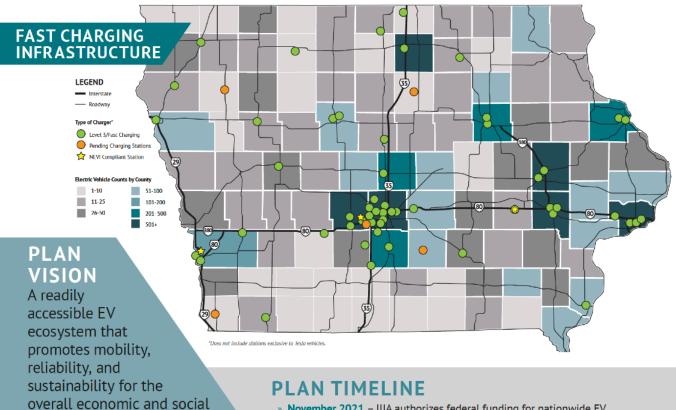
- » Address needs for EV charging infrastructure in rural corridors and under-served or disadvantaged communities
- » Provide long-term operation and maintenance
- » Include existing EV charging infrastructure programs and incentives
- » Catalyze additional private investment
- » Consider consumer protection, cyber-security, domestic manufacturing, emergency evacuation planning, environmental permitting, resilience, and terrain related issues

Charging stations along Alternative Fuel corridors must:

- » Connect to the electric grid and be spaced no more than 50 miles apart and less than one mile from Interstates and highway corridors
- » Be near restrooms, small businesses, and other amenities
- » Include at least four 150KW fast ports capable of charging four cars simultaneously
- » Adhere to Joint Office of Energy and Transportation standards and requirements







infrastructure program

» November 2021 - IIJA authorizes federal funding for nationwide EV

» June 2022 – stakeholder and public survey to gather input for Iowa's EV Plan

» September 30, 2022 - estimated deadline for NEVI/EV Plan approval by FHWA

» February 2022 – NEVI Program Guidance Memo issued

» August 1, 2022 - deadline to submit Iowa's EV Plan

wellbeing of lowa.



An EV fast charging system that supports regional and interstate travel

A local EV system that promotes equitable access and mobility throughout lowa's communities





A charging network that helps provide the traveling public a variety of transportation and energy options

A transportation system that reduces energy life-cycle emissions to minimize impact on human and environmental health





A sustainable transportation and energy system that can adapt to economic, technological, and environmental changes while providing a high level of system reliability

A charging network that supports long-term EV station success which maximizes economic benefits for consumers





A growing network of chargers that fosters innovation and collaboration to expand economic opportunities







As part of the 2021 Infrastructure Investment and Jobs Act (IIJA), federal funds were authorized to support the continued development of electric vehicle (EV) chargers.

As a result, lowa is joining many other states in developing plans to create a EV charging network along highway and interstate corridors. This network will offer convenient EV charging opportunities and facilitate a more reliable travel network for EVs within the state, as well as across the country.



IOWA'S AVAILABLE FUNDS



Federal Fiscal Year 2022 Funding \$7.6 million

5-Year National Electric Vehicle Infrastructure Federal Funding \$51.4 million

The Iowa Department of Transportation (DOT) is preparing a plan for developing EV charging infrastructure across the state highway and interstate system. This plan will build upon guidance from both the lowa In Motion Long Range Transportation Plan and State Freight Plan, as well as the 2019 Charging Forward: Iowa's Opportunities for Electric Vehicle Infrastructure Support Study.

In lowa we want to pursue every tool in the toolbox to address our energy independence. That includes biofuels and initiatives like this Electric Vehicle Infrastructure Deployment (EV Plan). Iowa has seen steady growth in EV travel and development of fast charging stations along key highway corridors. This planning process, and subsequent funding through IIJA, allows the state to continue infrastructure development initiatives.



U.S. electric car sales jumped to a record high of over 200,000 vehicles in Q1 2022. EV sales continue to grow in the U.S. as automakers build more options and consumers drive the demand.



With statewide growing adoption, 9,400 EVs and hybrid vehicles were registered in Iowa as of April 2022—at least one was registered in every county.



To support this growth, lowa has 270 EV charging locations (Level 2 and 3) across the state for public use.

TO LEARN MORE

800 Lincoln Way, Ames, IA 50010







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