

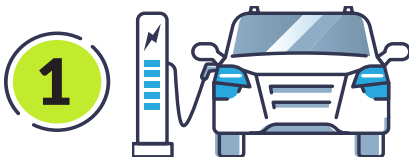
# SIOUX FALLS ELECTRIC VEHICLE READINESS STUDY



## FAQs

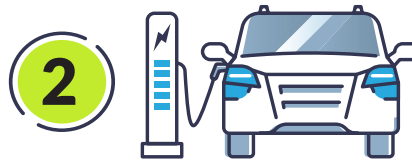
### 1. What are the different types of Electric Vehicles (EVs)?

There are three types of EVs:



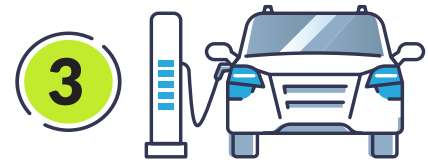
#### Battery Electric Vehicle (BEV)

- Battery-only population; no ICE backup
- Up to 400 mile range, depending on make and model
- Fuel with electricity only



#### Plug-In Hybrid Electric Vehicle (PHEV)

- ICE and electric motor
- Relatively short range on full battery (~40 miles), and then the ICE automatically starts
- Not limited in range by battery



#### Hybrid Electric Vehicle (HEV)

- ICE and electric motor
- Battery allows for smaller engines
- Battery charges by regenerative braking or using engine as a generator

### 2. What are some of the benefits of EVs?

EVs can have fewer maintenance concerns, including no need for oil changes, transmission flushes, engine belt and air filter replacements, or spark plug service. EVs are more energy efficient, can have a lower total cost of ownership, and have the lowest greenhouse gas emissions for passenger vehicles.

### 3. What is happening with EVs in Sioux Falls and South Dakota?

There were nearly 500 electric vehicles registered in Minnehaha County at the end of 2022, which is 26 percent of the state's total EVs. There were 1,896 EVs registered in South Dakota at the end of 2022. Connecting to a national network of EV charging infrastructure will support South Dakotans and visitors. The demand for EVs is anticipated to increase due to next generation of vehicles in production.

### 4. Are electric vehicles safe?

Yes – EVs are safe. All cars and trucks sold in the United States must meet the Federal Motor Vehicle Safety Standards. In order to meet these standards, vehicles undergo an extensive testing process, regardless of whether they operate on gasoline or electricity. EV battery systems also have to meet separate testing standards and are designed with additional safety features that shut down the electrical system when they detect a collision or a short circuit. Fires involving EVs are not considered to be any more dangerous or likely to occur than in conventional vehicles, but they do present unique characteristics. The City of Sioux Falls is actively working to develop policies that support fire safety.

## 5. Does Sioux Falls need more EV chargers?

Currently, the Sioux Falls area has 17 publicly available charging locations in the 20-mile vicinity. This is likely a low total to support the expected growth in EV adoption. The study will provide recommendations on charging stations as part of the analysis.

## 6. How do electric vehicles work in harsh weather conditions?

EVs can operate in hot and cold weather, although extreme conditions often decrease their range. The impact on range depends on the model, so it is important for drivers to do their research and plan accordingly during those conditions.

## 7. Can you recycle an electric vehicle battery?

Newer recycling processes are recovering up to 95% by weight of a used lithium-ion battery. Significant national research programs are also underway to further improve the total percentage of a battery that can be recycled and to lower the cost of recycling batteries.

## 8. Is the power grid ready to support electric vehicles?

While this study will estimate EV growth, current research indicates that the power grid has sufficient capacity to support EV charging. The power level and the time of day when vehicles are charged can impact the grid's capacity, and rates for electricity used during those peak times.

Grid upgrades and additional generation may be required as EV numbers increase. Sioux Falls area electric utilities have been putting together strategies to ensure the power grid is adequately prepared for the coming growth.

