

# EV Smart Communities

## CTS Seminar

October 26<sup>th</sup>, 2022

Diana McKeown, Metro CERT Director at Great Plains Institute



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# Agenda

- Who am I?
- BRIEF history of EVs in Minnesota
- EV Smart Communities
- Other EV related projects
- Hot topic issues



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# Who am I?

- Hometown = White Bear Lake
- Home = Longfellow/East Lake
- 30-year clean energy community organizer (15 years w CERTs this month!)
- University of MN, Alum (CNR 1995)
- EV Owner
- Namer of things
- Music & movie lover, Foodie, Rollerskater



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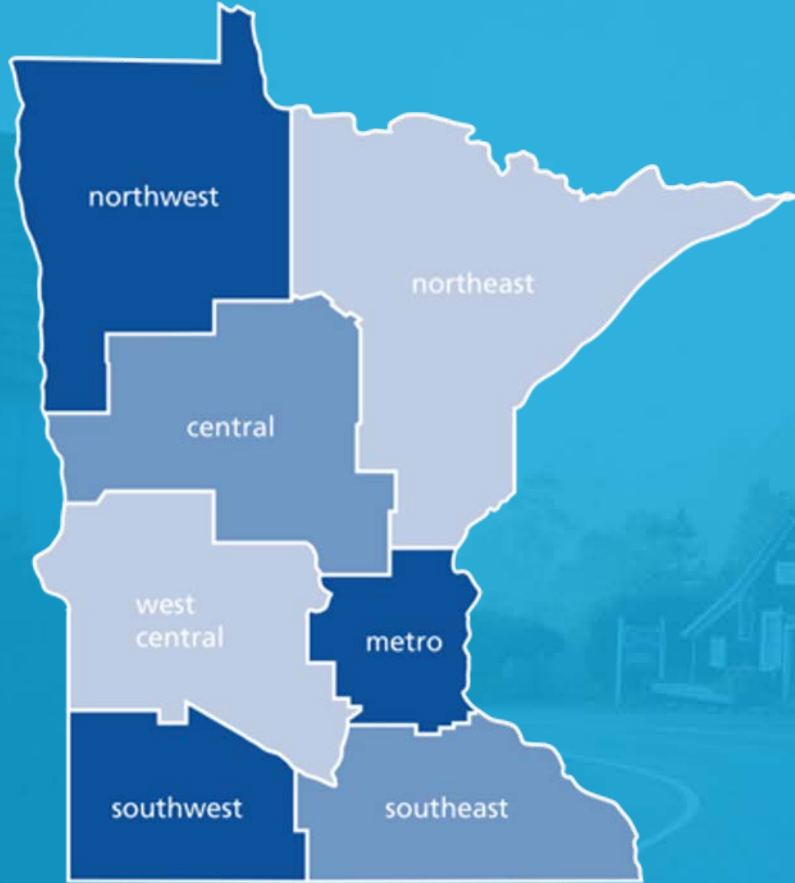
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# Clean Energy Resource Teams (CERTs)



## MISSION

We connect individuals and their communities to the resources they need to identify and implement community-based clean energy projects



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# About the Great Plains Institute

- Transform the energy system to benefit people, the economy and the environment
- Takes a collaborative, nonpartisan approach
- Partner organization to GreenStep Cities & CERTs
- Facilitates Drive Electric MN



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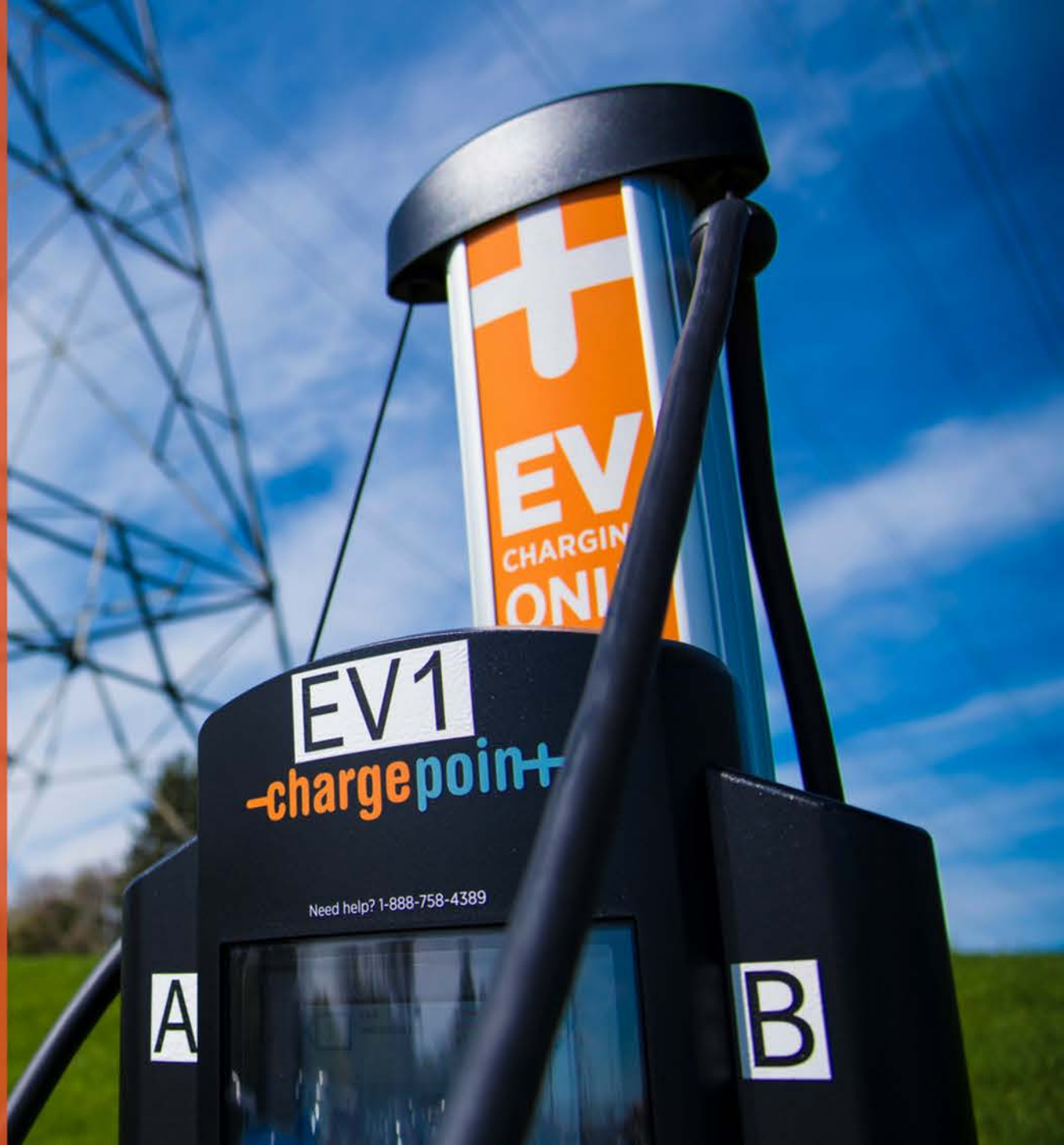
<https://betterenergy.org/>

# DRIVE ELECTRIC MINNESOTA

By bringing together all of the parts and players in the electric vehicle industry, **Drive Electric MN will accelerate the adoption of electric vehicles in Minnesota**

Partnership of EV champions from around MN

Utilities, dealerships, nonprofits, charging providers, auto dealers, and more are involved



# EV Smart Communities



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# Short history of EVs in Minnesota

- **2010** - Drive Electric MN begins as public private partnership
- **2013** - Minnesota Plug-in Vehicle Owners Circle forms (originally 176, now has 3000 members!)
- **2017** - Electric School Bus Pilot launched in Lakeville. First in the Midwest
- **2018** - Volkswagen Settlement \$43 Million – 15% for Electric Vehicle Charging Stations
- **2018** - 2021 Over 40 cities participate in Cities Charging Ahead Peer Cohorts
- **2019** - Accelerating Electric Vehicle Adoption: A Vision Statement
- **2020** - Clean Transportation Pilot launched, MN Department of Transportation
- **2021** - Clean Cars Minnesota – First Midwest State to adopt LEV/ZEV
- **2021** - Electric Vehicle Assessment, MN Department of Transportation
- **2022** - Electric Vehicle Planning Study, Metropolitan Council
- **2022** – Federal Guidance for National Electric Vehicle Infrastructure Formula Plan (MN will get \$68 million over 5 years)



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# EV Vision, Assessment & Planning

**2019 EV Vision – MnDOT**

**2019 Pathways to Decarbonization**

**2021 Electric Vehicle Assessment**



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# Peer Cohort work

- Developed and Facilitated Cities Charging Ahead (2018-2021)
- Developed and Facilitated Powering Ahead for Vehicle Electrification (Municipal Utilities 2020)
- Facilitator for soon to be launched EV Smart MN Cities & EV Smart MN Tribal Nations



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# EV Smart Communities



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# Why EV-Ready?

- **Local governments are essential partners in creating a self-sustaining EV market**
  - Shape action of residents and businesses
  - Use tools to foster community's transition to EVs
  - Encourage EV market transformation via public and private EV charging infrastructure



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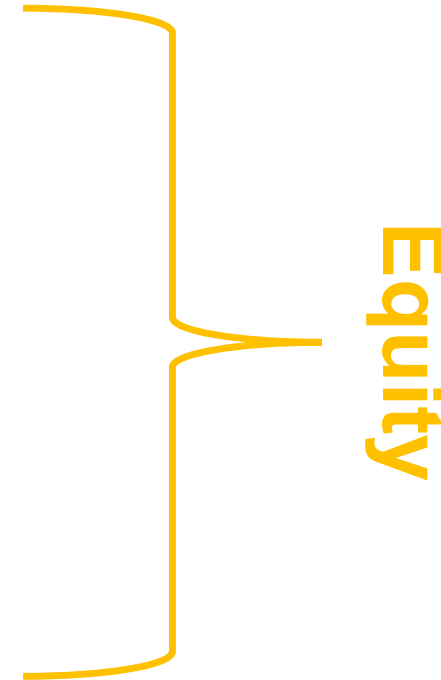
# Five Principles of EV-Ready Communities

1. **Policy:** Adopt policies and plans that support transportation electrification and acknowledge EV benefits
1. **Regulation:** Implement development standards and regulations that enable public and private sector of EV use
1. **Administration:** Create predictable, transparent, and well-documented administrative processes for installing EV charging infrastructure
4. **Programs:** Develop public programs to overcome market barriers to EV use and installation of charging equipment
4. **Leadership:** Demonstrate EV viability in public fleets, facilities, public transit, and alternative transportation modes



# EV-Ready Categories

1. Planning
2. Regulation
3. Utility Engagement
4. Education and Incentives
5. Government Operations
6. Shared Mobility



# EV-Ready Communities Program Layout





EV Smart Communities is a recognition program designed to provide communities with a roadmap to electric vehicle (EV) readiness, including securing funding and getting projects off the ground. The path to becoming EV ready involves a portfolio of best practices and actions that include both simple steps and more complicated initiatives that makes it possible for any community to participate.



# EV Smart Framework

Planning	Regulation	Utility Engagement	Education and Incentives	Government Operations	Shared Mobility
Address EVs and EVSE in Comprehensive Plan	Enable EV and EVSE in land use regulations	Joint programs with utility on education and marketing	Host public education events and campaigns	Electrify public fleet	Deploy electric transit, para-transit vehicles
Address EVs and EVSE in Specific-Area Plan	Incorporate EV and EVSE in parking standards	Work with utility on interconnection process	Host EV web resources	Provide public chargers	Deploy electric school buses
Address EVs and EVSE in Functional Plan	Incorporate EV and EVSE in the building code	Address EV charging issues	EV/EVSE education of commercial property owners	ROW charging deployment	Develop electric bike or scooter opportunities
Establish a deployment benchmark and set deployment goals	Incorporate EV and EVSE in permitting	Utility EV programs and rates	Financial incentives for EVSE installation	Install employee reserved EVSE	Develop car sharing program
	Require EVSE in or near to affordable multi-family housing	Work with utility to integrate renewable energy	Financial incentives for purchasing EVs		



# EV Smart Communities

## Regulation

Enable EV and EVSE in land use regulations

Incorporate EV and EVSE in parking standards

Incorporate EV and EVSE in the building code

Incorporate EV and EVSE in permitting

Require EVSE in or near to affordable multi-family housing

Incorporate EV and EVSE in parking standards

Require EVSE-ready/EVSE-capable for employment centers (> 20 stalls)

Require EVSE-installed for employment centers (> 20 stalls)

Require EVSE-ready/EVSE-capable for retail centers (> 50 stalls)

Require EVSE-installed for retail centers (> 50 stalls)

Define EV stalls in parking minimum or maximums (i.e., does it count toward min/max?)

Protect EV charging access for public charging locations

Establish ADA guidelines for EV enabled parking stalls\*

Encourage or incentivize managed charging EVSE

Incorporate EV and EVSE in the building code

Require Level 2 EVSE/EVSE-ready for single-family homes

Require Level 1 and 2 EVSE-installed for multi-family buildings (10% or higher)\*

Require Level 1 and 2 EVSE-ready/capable for multi-family buildings (20% or higher)\*

Require 100% Level 1 and 2 EVSE-ready for multi-family buildings\*

Require Level 2 or DCFC for commercial parking facilities (20% or higher)

Require solar-ready for surface parking facilities with EVSE



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# EV Smart Communities

Government Operations
Electrify public fleet
Provide public chargers
ROW charging deployment
Install employee reserved EVSE

## Provide public chargers

Install EVSE in public parking (downtowns, retail centers)

Install EVSE for public use at community centers, city hall, or other public facilities

Install solar carports with EV charging at a public location

Track charging metrics (i.e., usage, reduced GHG emissions, earnings, etc.)



# Other EV Projects



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# Communities LEAP – Hennepin County

Providing guidance and support for a community engagement plan and process for Hennepin County, Minneapolis and Brooklyn Park to plan for transportation electrification, with a priority on communities that score high on vulnerability indices and are overly reliant on fossil-fueled personal vehicles. The project team will directly engage with residents to explore potential electric mobility solutions (including passenger vehicles, e-mobility, car- and ride-share services, and supporting charging infrastructure) and develop a set of transportation electrification priorities and principles. The efforts will serve as a blueprint for additional local, state, regional and utility transportation electrification planning including for EV charging infrastructure scheduled to be built.

<https://www.energy.gov/communitiesLEAP/leap-communities>



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# Trending Topics



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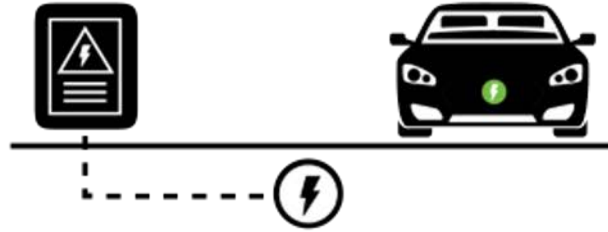


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# Developing Terminology

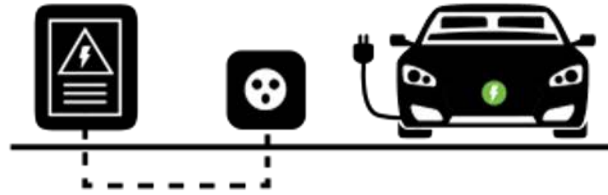
## 1. EV-Capable

Install electrical panel capacity with a dedicated branch circuit and a continuous raceway from the panel to the future EV parking spot.



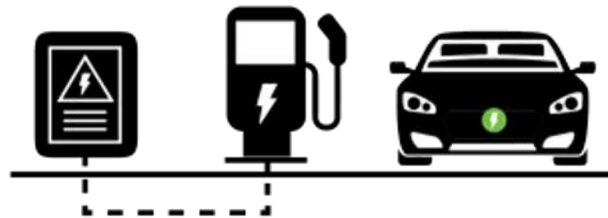
## 2. EVSE Ready Outlet

Install electrical panel capacity and raceway with conduit to terminate in a junction box or 240-volt charging outlet.



## 3. EVSE Installed

Install a minimum number of Level 2 EV charging stations.



- **New ordinance scan reveals growing granularity for required completeness of EVSE**

- **Evolution and separation of terms impacts required percentages in EV parking standards**



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*Credit: Southeast Michigan  
Council of Governments*



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# IRA and EVs

- A LOT of unknowns.
- Which vehicles will qualify in 2023 and beyond?
- Will there be tweaks to the legislation, likely.
- Will WTO challenge the US manufacturing aspect?

<https://www.cleanenergyresourceteams.org/inflation-reduction-act-what-you-need-know-about-clean-energy-incentives>



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## Clean Vehicle Credits

The Inflation Reduction Act expands tax credits for consumers who purchase clean vehicles, including fuel cell and electric vehicles (EVs).

### Receive up to **\$7,500** off a new EV:

- Through the end of December 2022:
  - EV must be manufactured in North America
  - Manufacturer must be under 200,000 EVs sold
  - US Department of Energy provides a list of eligible vehicles at <https://afdc.energy.gov/laws/electric-vehicles-for-tax-credit>
- Starting in January 2023, income limits apply:
  - Individuals must earn less than \$150,000 per year
  - Couples must earn less than \$300,000 combined per year
- From 2023 through 2032 (end of program), only certain EVs meeting additional requirements (price, location of EV battery manufacturing, and location of EV battery mineral extraction) will be eligible for the full credit. The federal government will likely provide a list of eligible vehicles.

### Receive up to **\$4,000** or **30 percent** off a used EV:

- Begins January 2023
- Eligibility is limited to individuals making less than \$75,000 per year or couples making less than \$150,000 combined per year
- The federal government does not provide a list of eligible used EVs, but here's the criteria to look for in the EV specifications sheet:
  - EV sales price must be less than \$25,000
  - EV must be at least two years old
  - EV must weigh less than 14,000 lbs



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# Accessibility

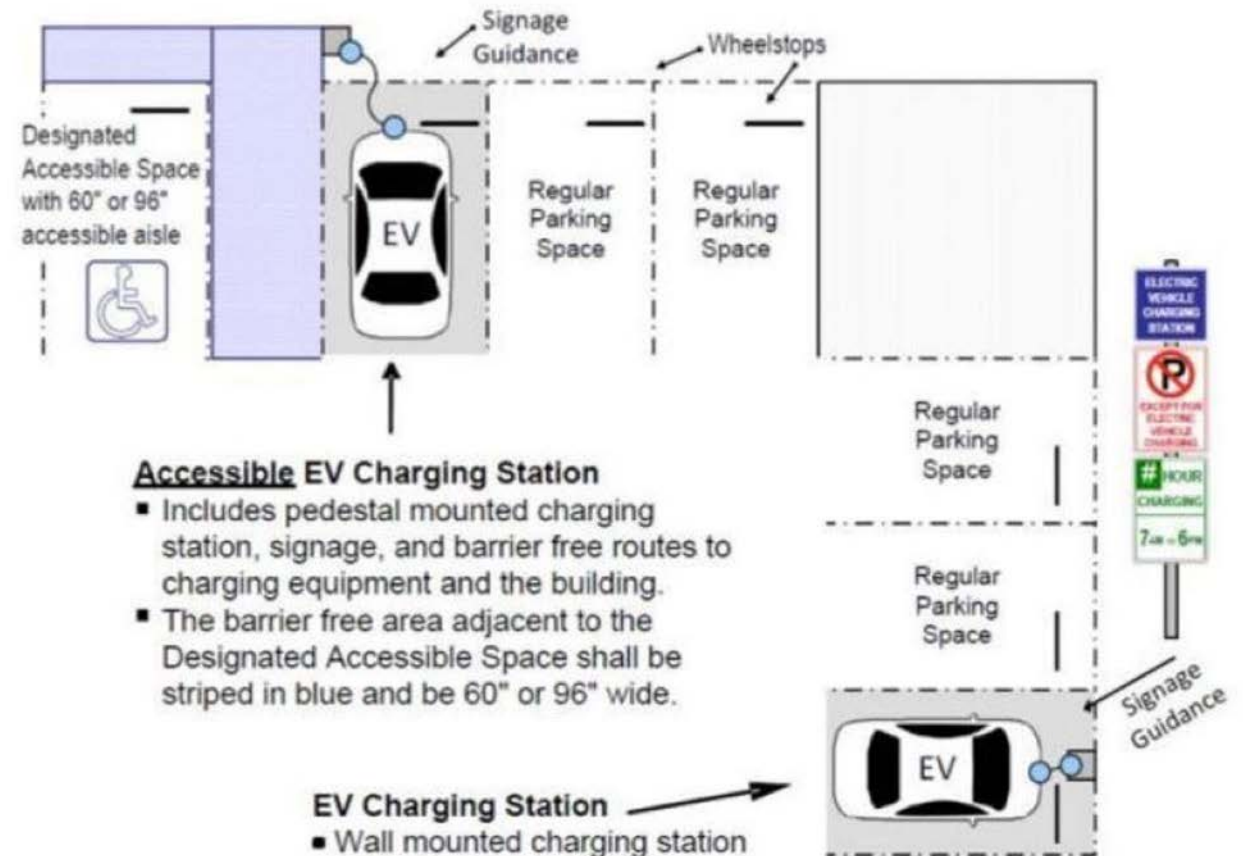
Consider ADA regulations for parking and sidewalk management and apply them to EV charging stations.

Some municipalities have adopted codes to address accessibility:

- Number of accessible stations
- Cord management
- Site planning considerations

Figure 11.8A – EV Charging Station Design, including Accessible EV Charging Stations

Note: Not to scale.



# EVs Headlines

**"Electric vehicle fires in Florida caused by Hurricane Ian fuel safety questions"**

**"Hurricane Ian damage leads to spontaneous combustion of EVs in Florida"**



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# Equity Considerations



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## Equity in Transportation

- If siting of EVSE is left to private developers and charging operators rather than address in planning, access to underserved communities will be limited
- Approaches to advance equity include:
  - Accessibility of equipment
  - Multifamily supportive policies
  - Right-of-way supportive policies
  - Geographic coverage

# Q&A



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