

# FEASIBILITY, FUNDING, AND FLEETS

Preparing Your Community for EV  
Charging

May 24, 2023



# Background and Overview

# Day One Executive Order



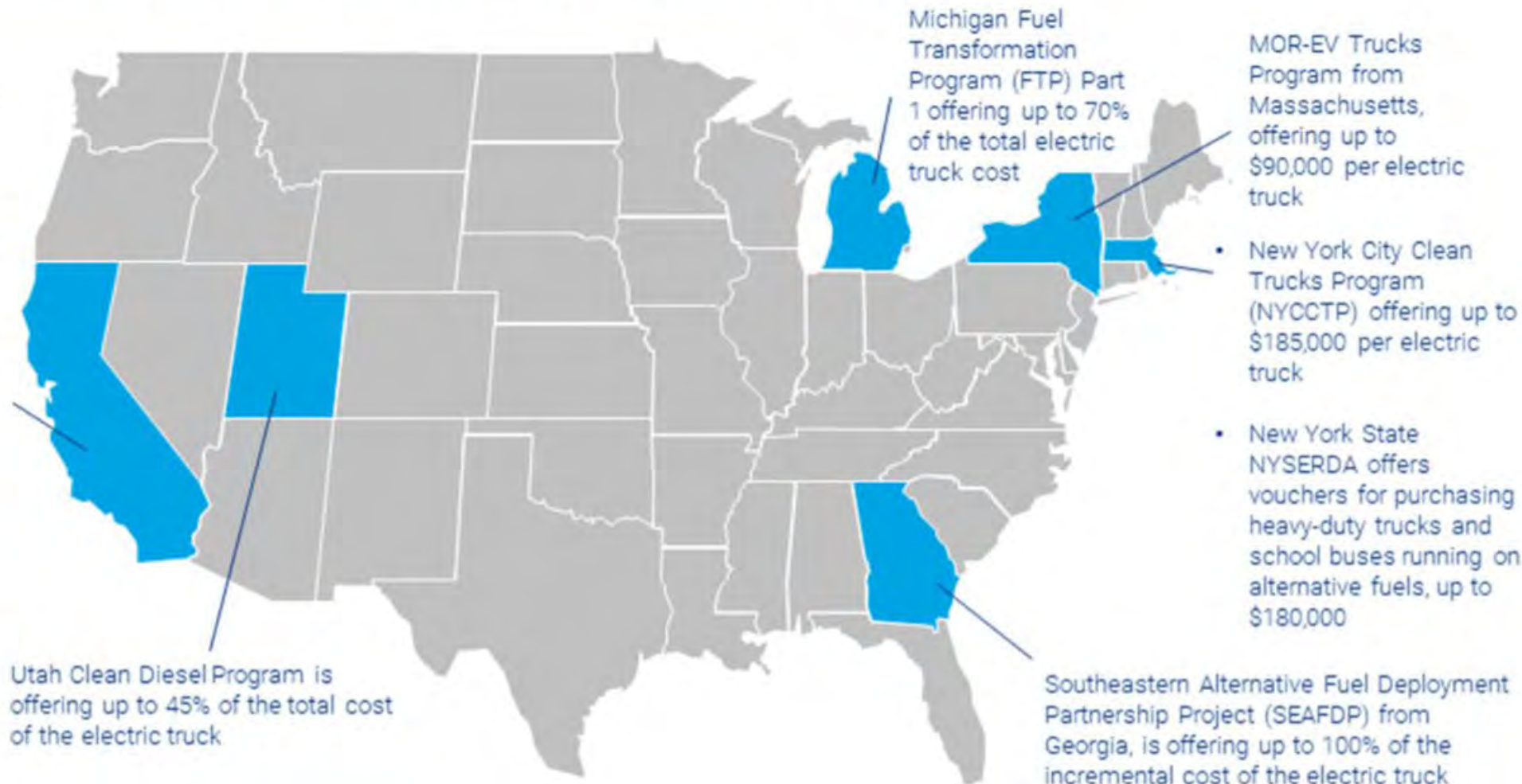


# Investment



## Multiple US states offer heavy duty truck electrification incentives – California leads with US\$300,000+ in total incentives

- California's Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP) offers up to \$120 K incentives to clean buses and trucks
- South Coastal Air Quality Management (SCAQMD) Proposition 1B offers up to \$200K for switching to medium and heavy electric trucks





Total Grants

**38**

Total Awarded

**\$17.83M**

CO2e Reduced

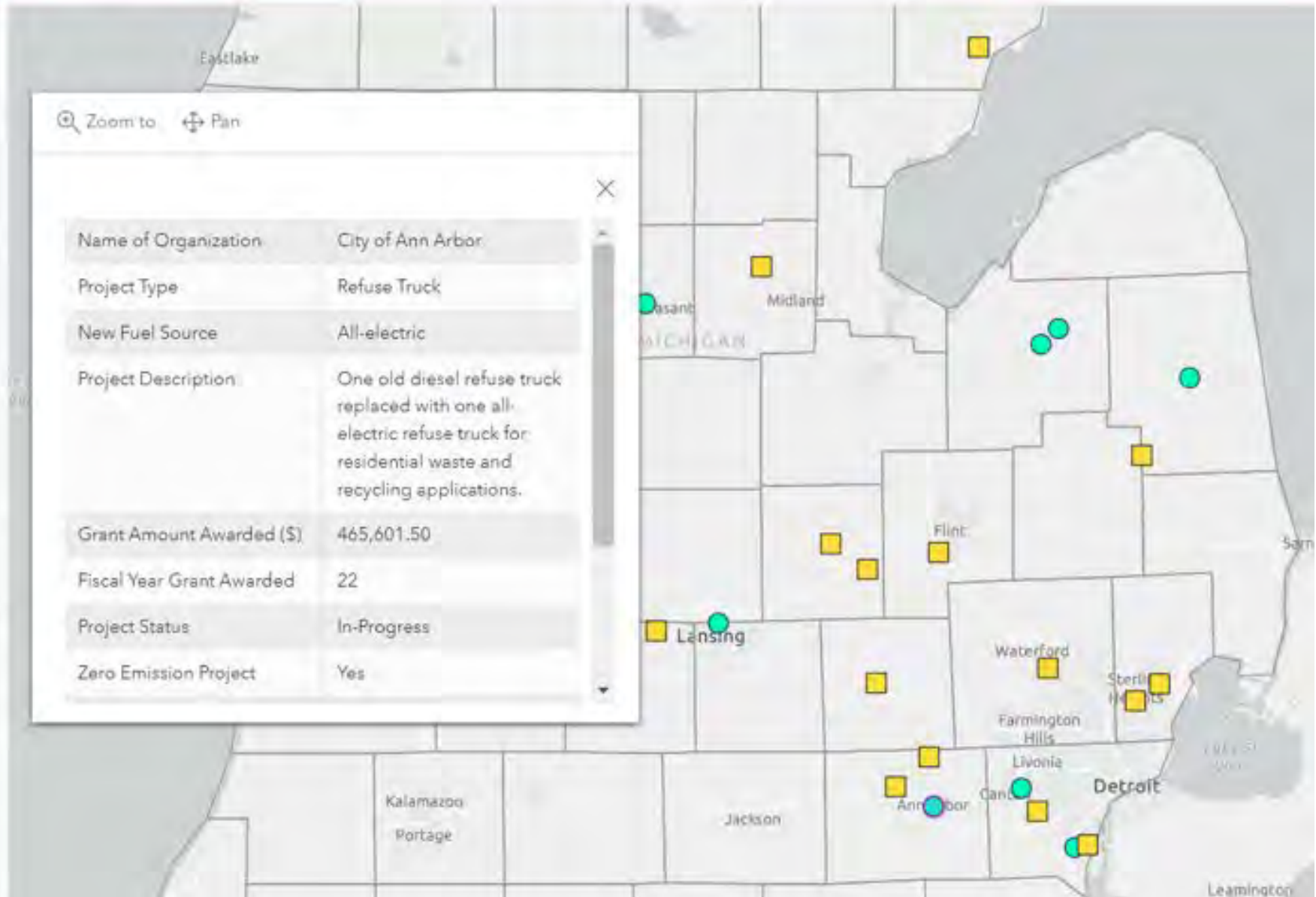
**7,829**  
metric tons

NOx Reduced

**67.5**  
metric tons

Projects with electric vehicles  
(Click project(s) to see location)

- Cintas Corporation 2
- City of Ann Arbor
- City of Grand Rapids
- Granger Container Services, Inc.
- Padnos
- City of Holland
- CMAC Transportation



# Communities Are Going to Change

# EVs Impact on the Community

- Cleaner air
- Lower cost of driving
- Environmental justice
- Increased property values
- Achieving climate change goals
- Resilient local grid
- Great PR





# Gas Station of the Future

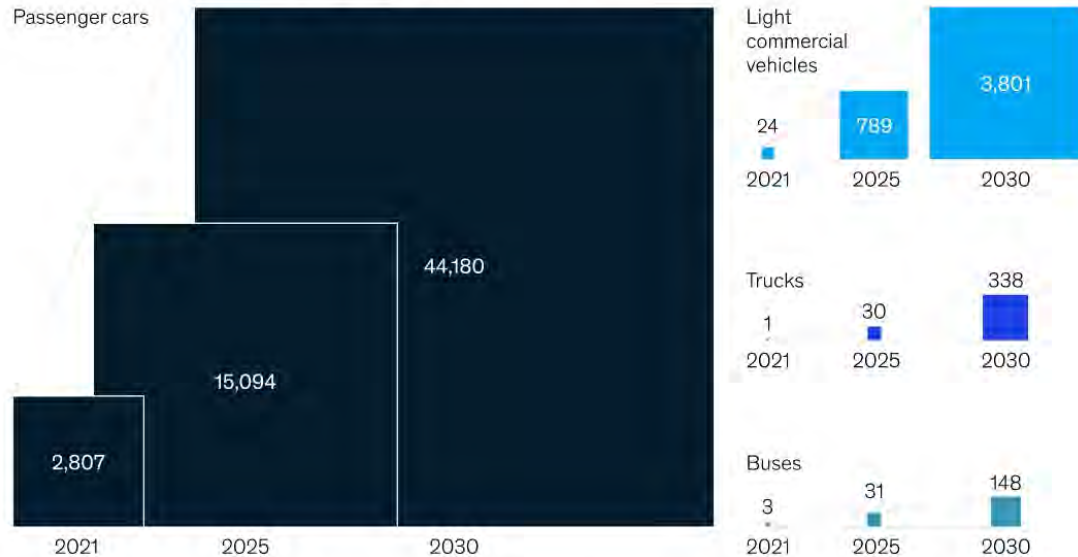


- “Big Energy” is a partner
- Need to consider a hydrogen future, too

# EV Charging: How Many and How Much

If federal zero-emission vehicle sales targets are met, the United States could have more than 48 million electric vehicles on the road in 2030.

Electric-vehicle parc, by segment<sup>1</sup> growth, thousands of vehicles<sup>2</sup>



<sup>1</sup>Based on a scenario where zero-emissions vehicles (battery-electric vehicles, plug-in hybrid electric vehicles, fuel-cell electric vehicles) account for half the vehicles sold in the United States in 2030, in line with a federal target.

<sup>2</sup>Battery-electric vehicles and plug-in hybrid electric vehicles.

Source: McKinsey Center for Future Mobility

Hardware, planning, and installation for public charging could cost more than \$35 billion through 2030.

Capital expenditure<sup>1</sup> required for charger demand charger technology through 2030,<sup>2</sup> \$ billion



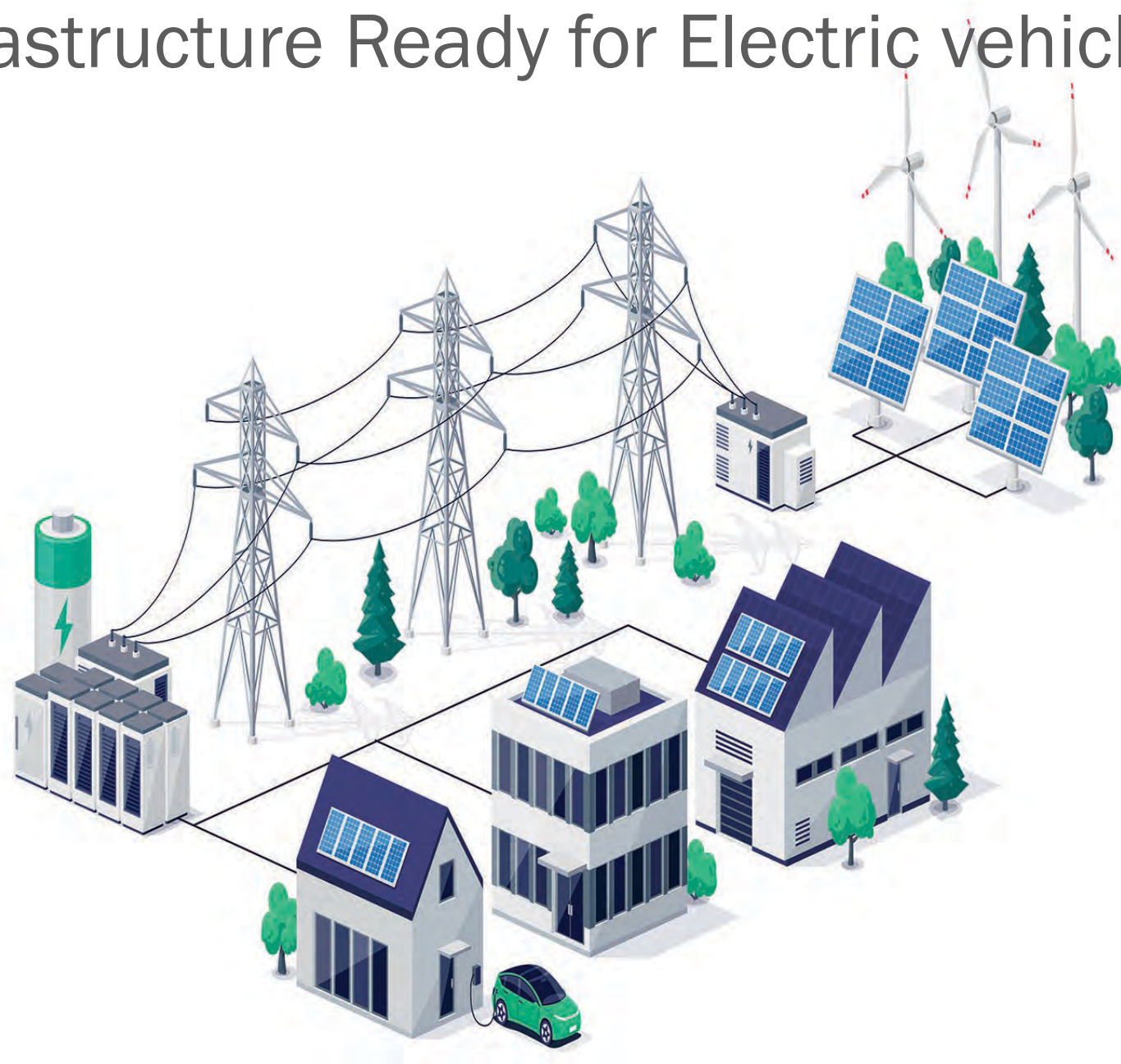
<sup>1</sup>Includes the cost of charger hardware, planning and engineering, and charger installation; does not include costs for grid and site electrical upgrades.

<sup>2</sup>Based on a scenario where zero-emissions vehicles (battery-electric vehicles, plug-in hybrid electric vehicles, fuel-cell electric vehicles) account for half the vehicles sold in the United States in 2030, in line with a federal target.

Source: McKinsey Center for Future Mobility



# Is U.S. Infrastructure Ready for Electric vehicles?





# Challenges

- Lack of charging stations
- Charging takes time and space for drivers to wait
- Power storage is inefficient
- Transition time



# Opportunity Awaits

- Existing gas station real estate is valuable
- Funding for power grid upgrades
- Private sector



# FLEET CONSIDERATIONS



# EV FLEETS

## Immediate

Pilot projects in departments  
Vehicles with repeatable, predictable use profiles  
Have/will have limited EV or alternative fuels infrastructure (little publicly available)  
Funded through federal/state subsidy

## Long-Term

Heavy-duty vehicles  
Vehicles that power other equipment  
Higher route variance and use cases  
Security functions (police/FD)  
Have/will have extensive EV or alternative fuels infrastructure, including public access  
Funded through CIP

# EV FLEETS

## First Steps...

- Identify fleet vehicles best fit for transition
- Pilot a component portion of your fleet
- Baseline financial performance for future measurement

## Next Steps...

- Identify best funding model
  - Internal (GF, grants, incentives)
  - External (leasing, renting)
- Acquisition
- Infrastructure/charging deployment
  - Own
  - Concession (nextworked)
- Service support for vehicles
- Measure performance

# FORD PRO | FLEETS

- Provides guidance on fleet electrification
- Pass-through tax credit incentives benefits to local governments
- Financing and service





# Funding for EV Projects

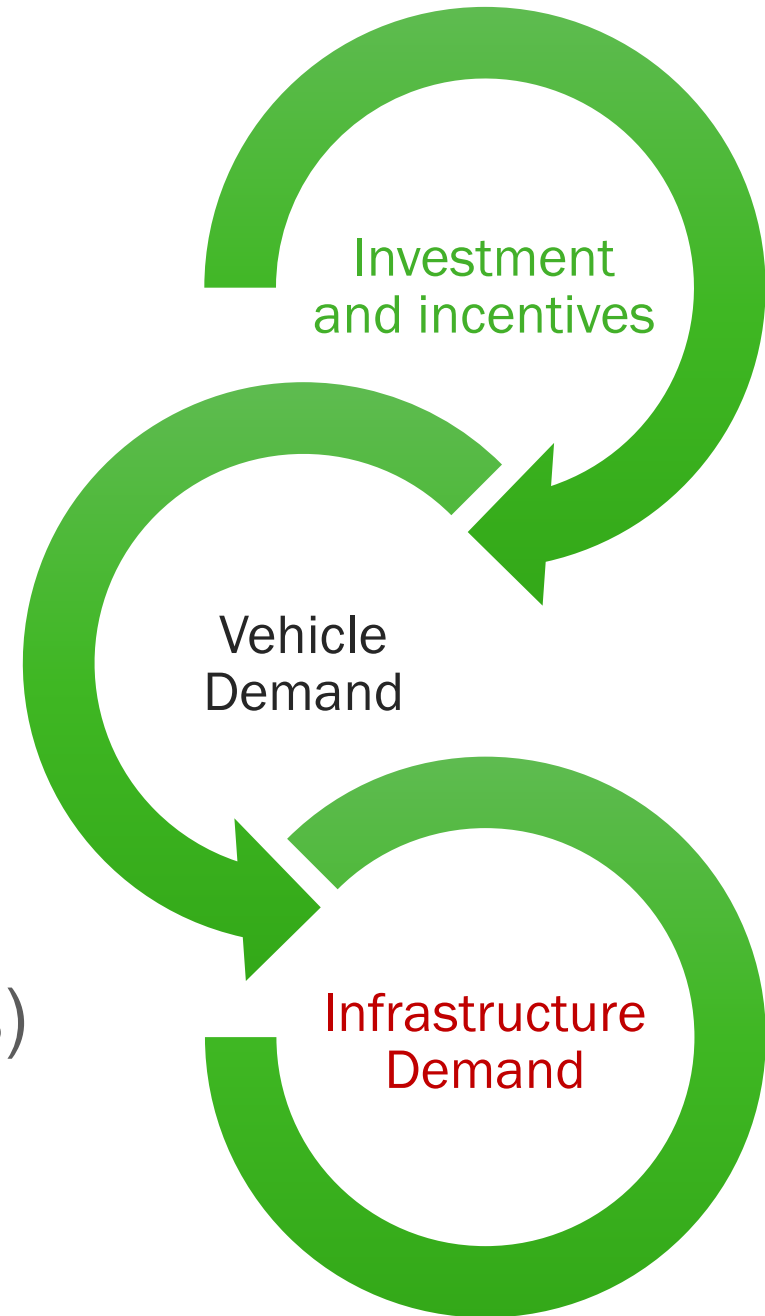
# Federal Sources | FLEETS

- Clean Heavy-Duty Vehicles
  - \$1 billion appropriated by Inflation Reduction Act
  - Class 6 and 7 vehicles
- Clean Ports Program
  - \$3 billion appropriated by Inflation Reduction Act
  - 27 ports in Michigan
- Alternative Fuel Tax Credits
  - Available to manufacturers and private entities
  - Public entities can benefit from enterprise agreements with manufacturers or providers
  - “Turnkey” fleet solutions



# Tax Credits and Rebates

- Federal Tax Credits
  - Light-Duty EV Tax Credits
  - Commercial EV Tax Credit
  - EV Charging Equipment Tax Credits
  - Clean Vehicle Credits
  - Used EV Tax Credits
- State Tax Credits
- Charging Station Rebates (Utilities)
- Time-of-Use Rates (Utilities)

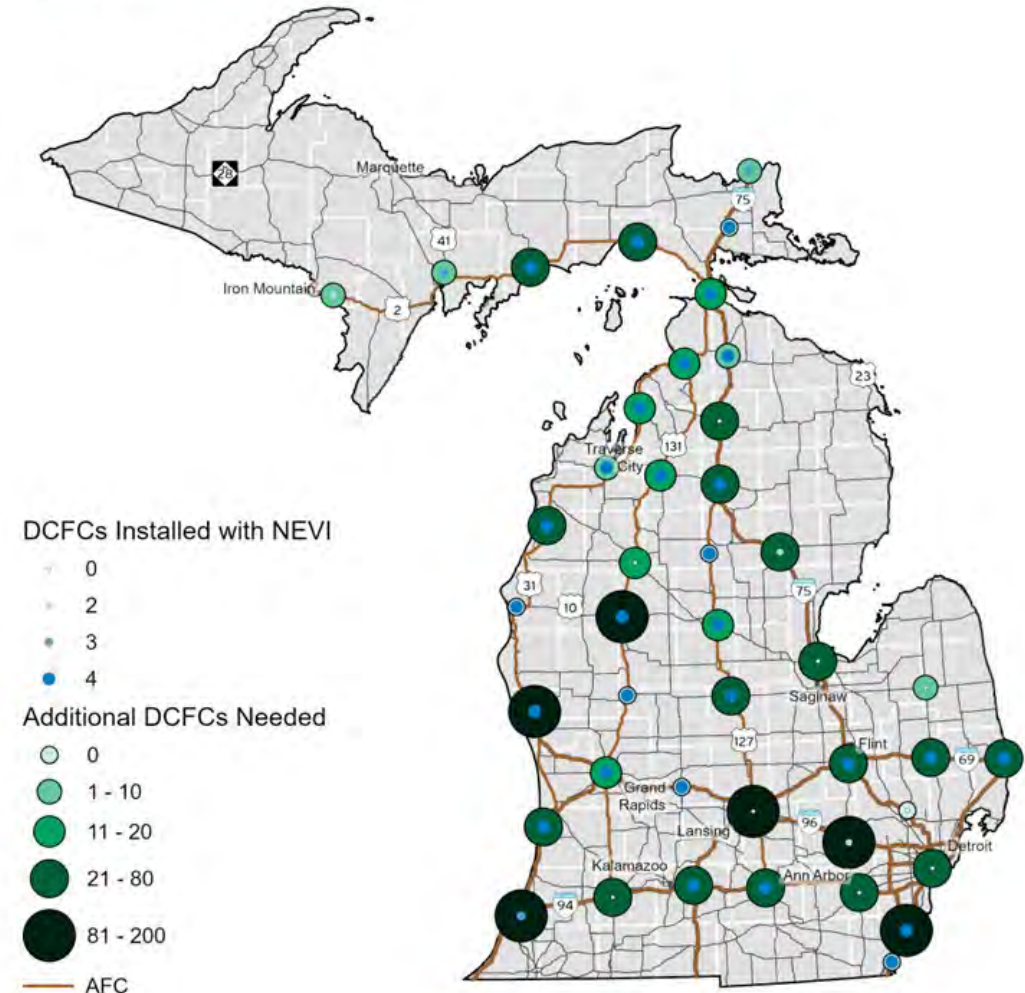




# National Electric Vehicle Infrastructure Plan - Michigan

- NEVI Standard
  - “Basic”-level of service along federal fueling corridors
  - 127 chargers to meet basic standard
  - \$110 million federal funding to achieve
- DCFC Needs (Level 3)
  - 2,136 needed by 2030
  - **\$175-250 million to achieve**

Figure 17: Additional DCFC Needs



# State Sources

- ChargeUp Michigan – Volkswagen Settlement
  - Infrastructure projects that “expand the map”
- National Electric Vehicle Infrastructure (NEVI)
  - Michigan receiving \$110 million
  - Focused on areas that are not NEVI compliant
  - MDOT seeking partners to complete NEVI project through an RFQ process
- State EV Charging Program - **PROPOSED**
  - \$40 million in current budget
  - Public, commercial, and at-home programs
  - Department of Labor and Economic Opportunity

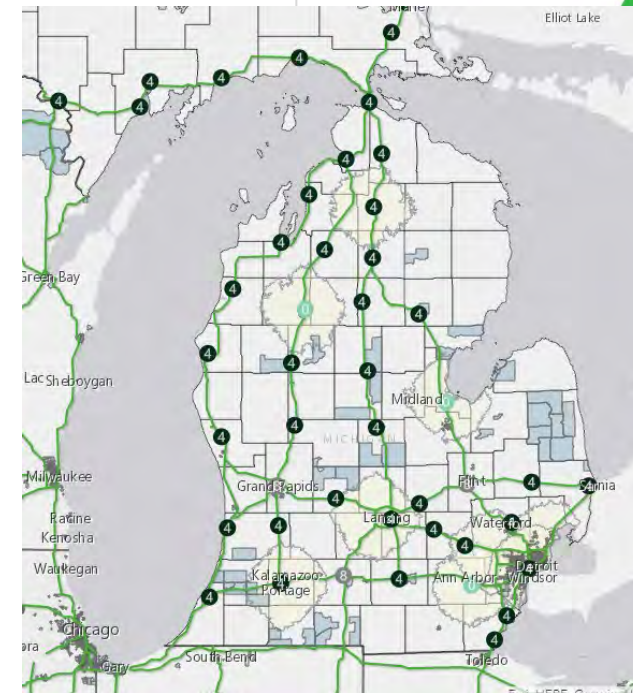
## National Electric Vehicle Infrastructure Formula Program

Bipartisan Infrastructure Law



### Program Guidance

Federal Highway Administration  
February 10, 2022



# Federal Sources | Grants

- USDOT Charging and Fueling Infrastructure (CFI)
  - \$2.5 billion authorized in the Infrastructure Investment and Jobs Act through 2026
  - Competitive funding
  - Divided by **Place-based** and **Corridor** grants
  - Funding for public and/or private owners/operators
  - FY 2022/23 NOFO is currently open

- Earmarks

- THUD Highway Improvement Program
- Work with your MPO to get it on the TIP



**Place-Based**  
\$1.25 billion



**Corridors**  
\$1.25 billion



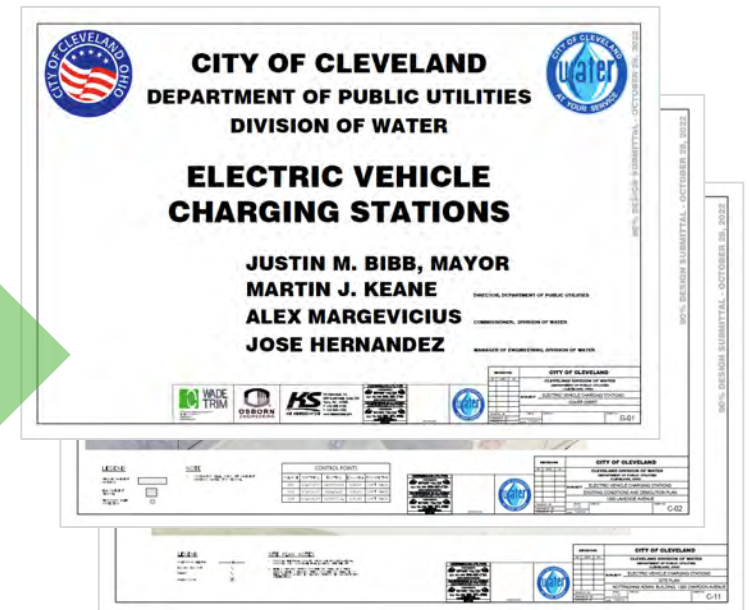
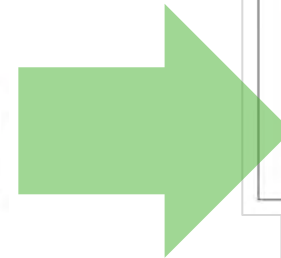
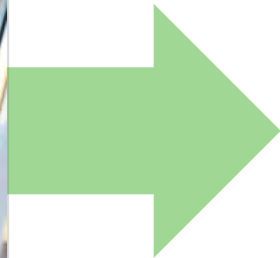
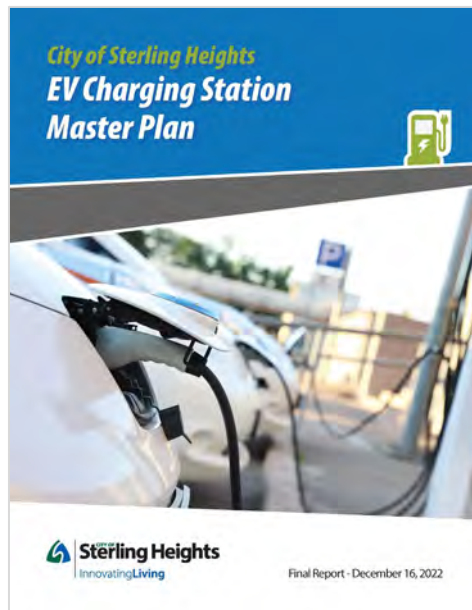
# Federal Sources | Grants

- USDA Community Facilities Grant Program
- DOE Energy Vehicle Technologies Office
  - \$1.4 billion through Infrastructure Investment and Jobs Act
  - Funding rounds each Summer
- USDOT RAISE Grant Program
- CMAQ/Carbon Reduction Programs



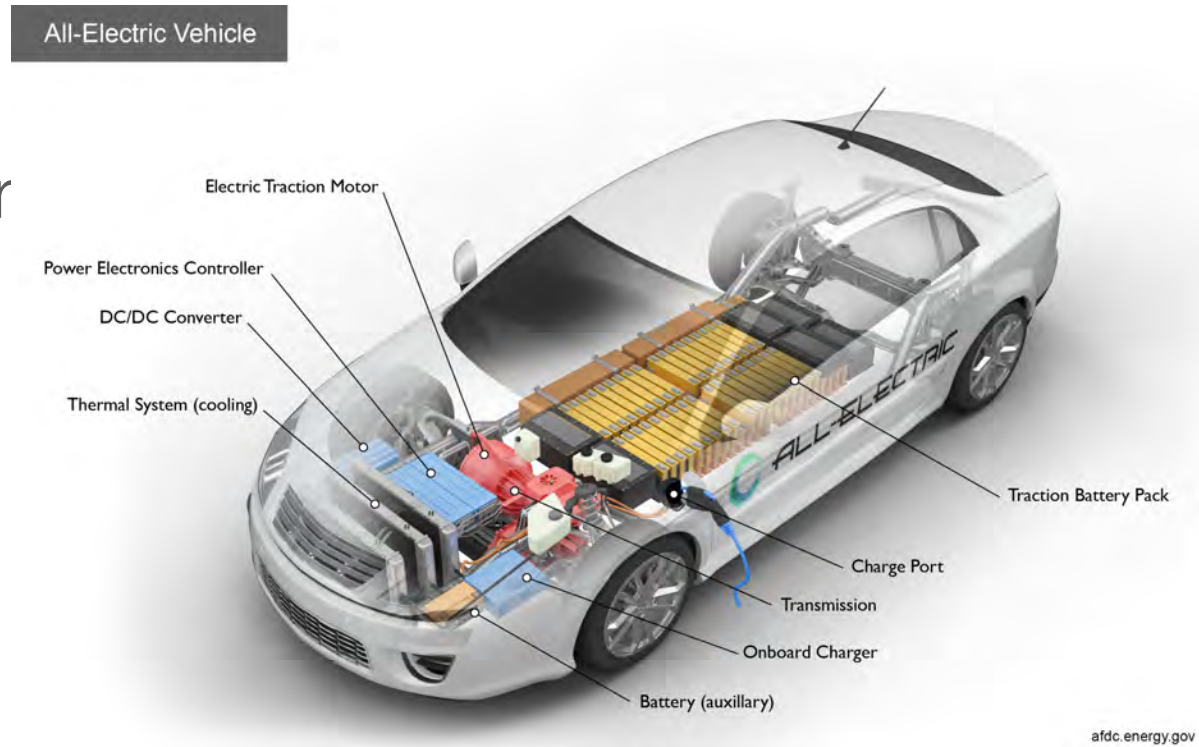
# EV Infrastructure Funding

- Planning and Needs Assessment
- Implementation



# Get Fundable with an EV Study

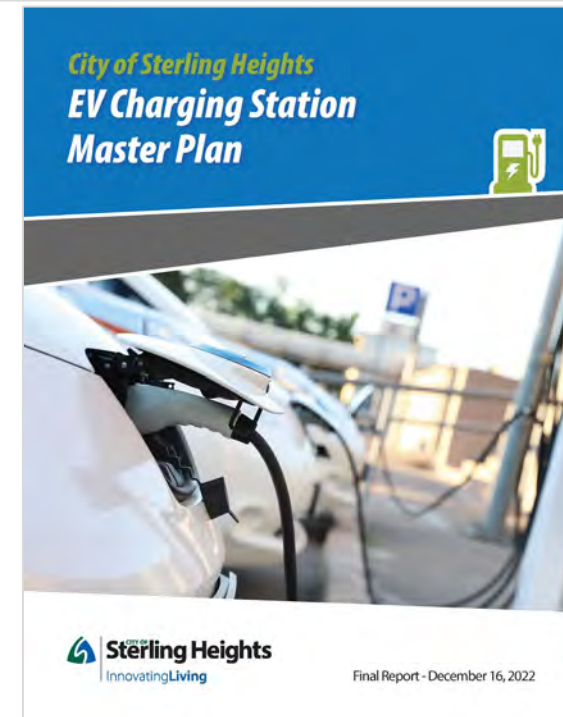
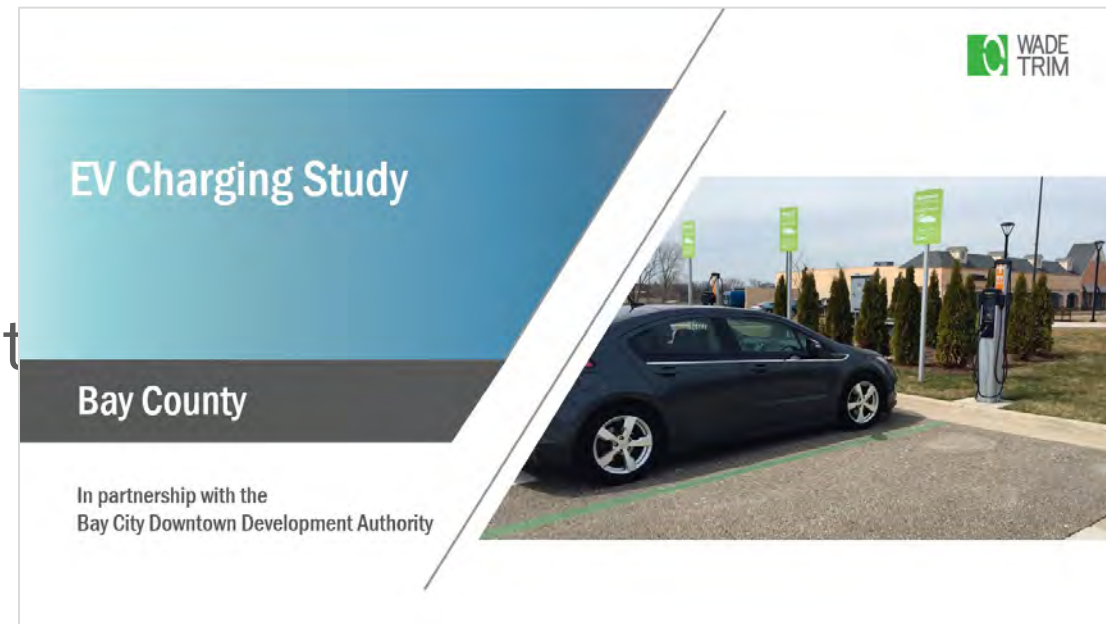
- Get ahead of trends
- Build reputation as a destination
- Make your Sustainability Commission
- Evaluate needs at facilities
- Evaluate fleet needs/opportunities
- Make sure zoning is not an obstacle
- Evaluate revenue





# Local/Regional Sources

- SEMCOG Transportation Planning Grant
  - Funded Sterling Heights Master Plan
  - Up to \$50,000
- American Rescue Plan Act (ARPA)
  - Bay County EV Charging Study
  - \$40,000 in ARPA
  - “Revenue Replacement”
- Energy Efficiency and Conservation Block Grants (EECBG)
  - \$550 million through Department of Energy
  - **Coming in 2023**



# Energy Efficiency and Conservation Block Grants (EECBG)

- Federal direct grants to local governments
  - Counties over 200,000 in population
  - Cities/townships over 35,000 in population
  - Other communities will be eligible for State Program grants
- Planning activities are good fit with the program
  - Renewable energy feasibility analysis
  - Non-motorized transportation plans
  - Climate adaptation strategies
  - EV Charging Studies



# Project Examples



# Ford Campus EV Charging Stations

- Research and Engineering Center (REC) and Dearborn Development Center (DDC)
  - 12,000+ Employees
  - 10,800 Total parking spaces
  - Goal of 5% EV Charging parking spaces
    - 150 spaces in Parking decks
    - Parking lots- 248 installed to date
  - Additional 46 EV spaces for test vehicles



# Cleveland Water Department

- Fleet Vehicle Charging Stations

- Site assessments

- 12 Cleveland Water Facilities
    - 3 Cleveland Public Power Locations
    - 31 EV Fleet Cars

- Site and Electrical Design

- 18- Level 2 Dual Charging Stations
    - 6- Level 3 Fast Charging Stations



Level 2 Dual Charging  
Station Chargepoint CPF50  
Fleet Style Dual-Port



Level 3 Charging Station  
Chargepoint Standalone  
EXPRESS 250

# Sterling Heights EV Charging Station Master Plan

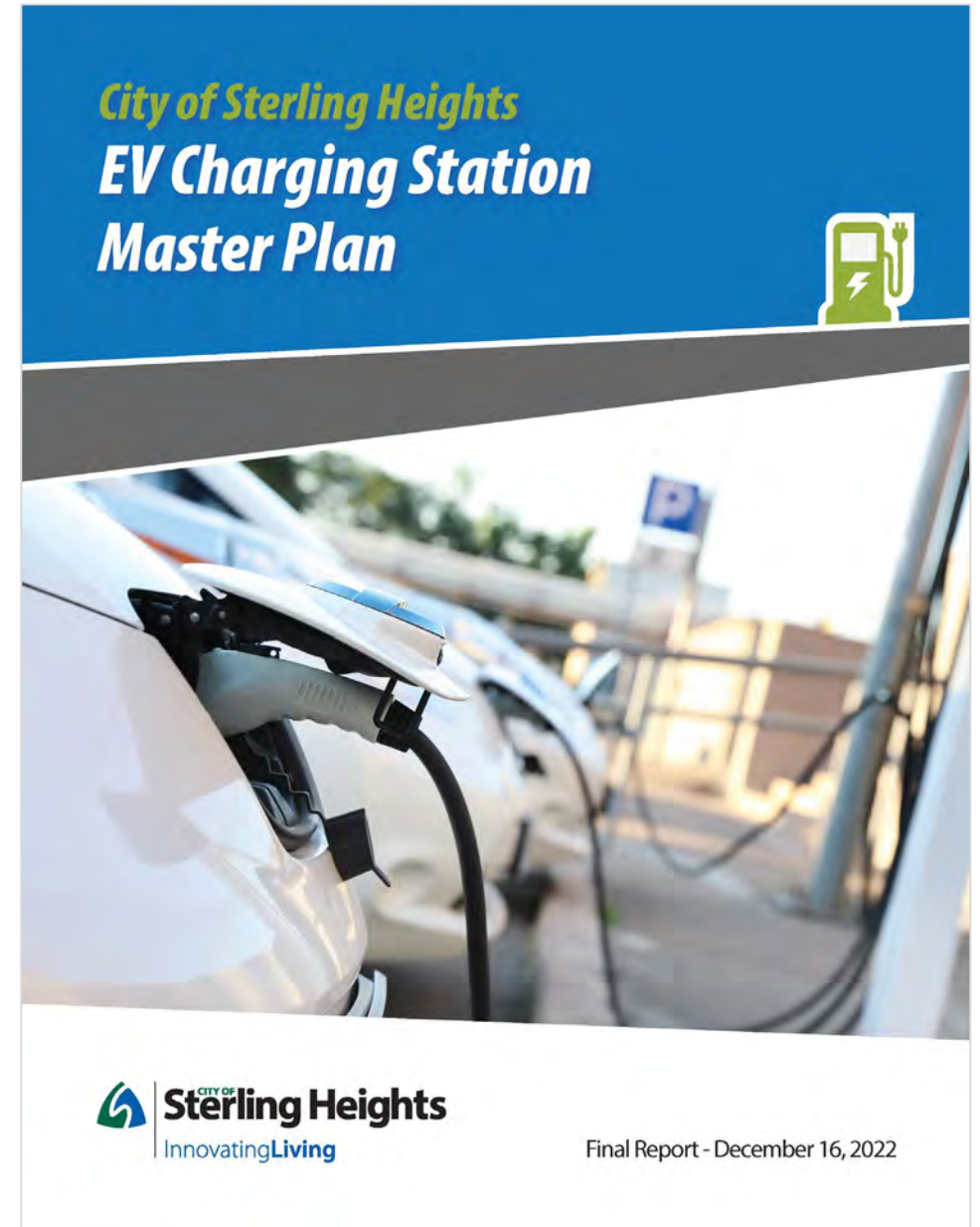
## Main objectives of the project:

1. Provide overview of Charging Station engineering and technology
2. Assess demand/need and opportunity in Sterling Heights
3. Develop Recommendations for regulatory and operational changes

**SEMCOG**

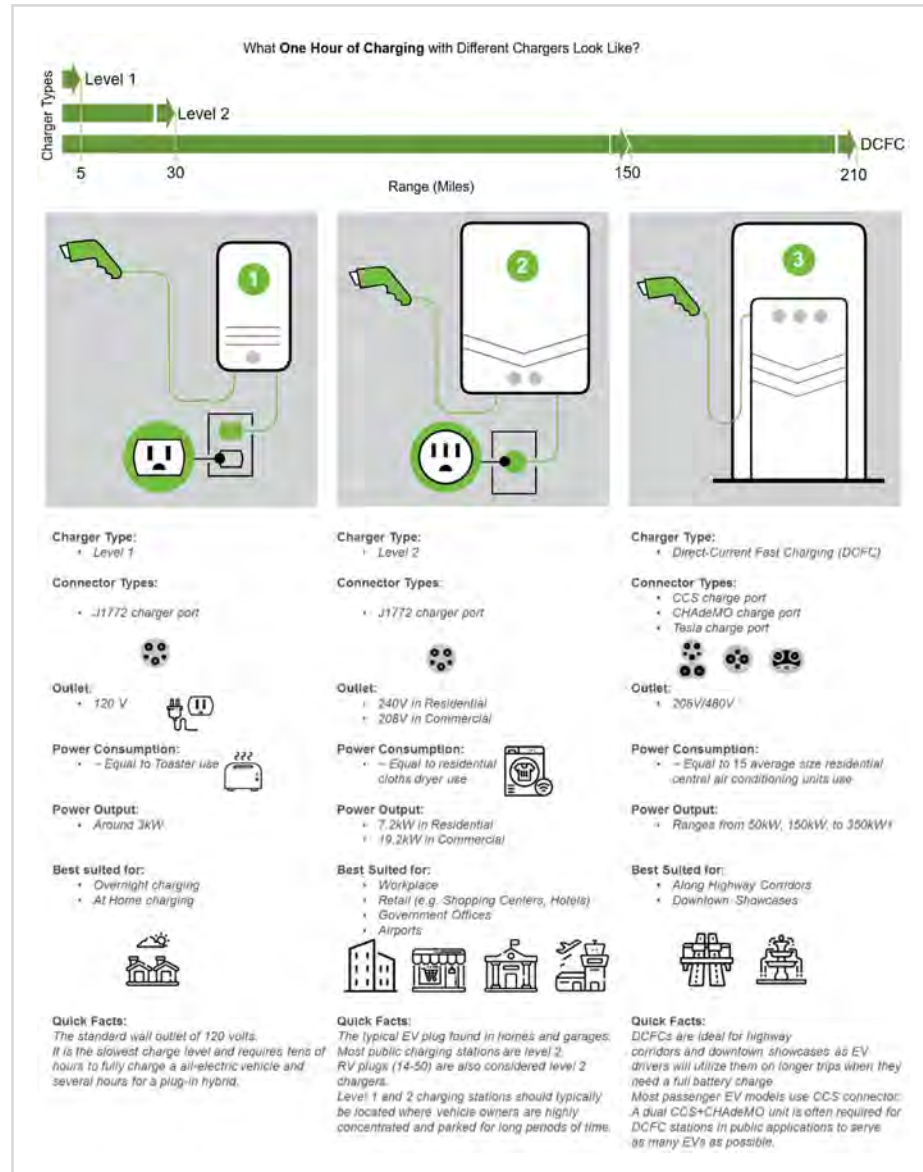
Southeast Michigan Council of Governments

Planning Assistance Grant

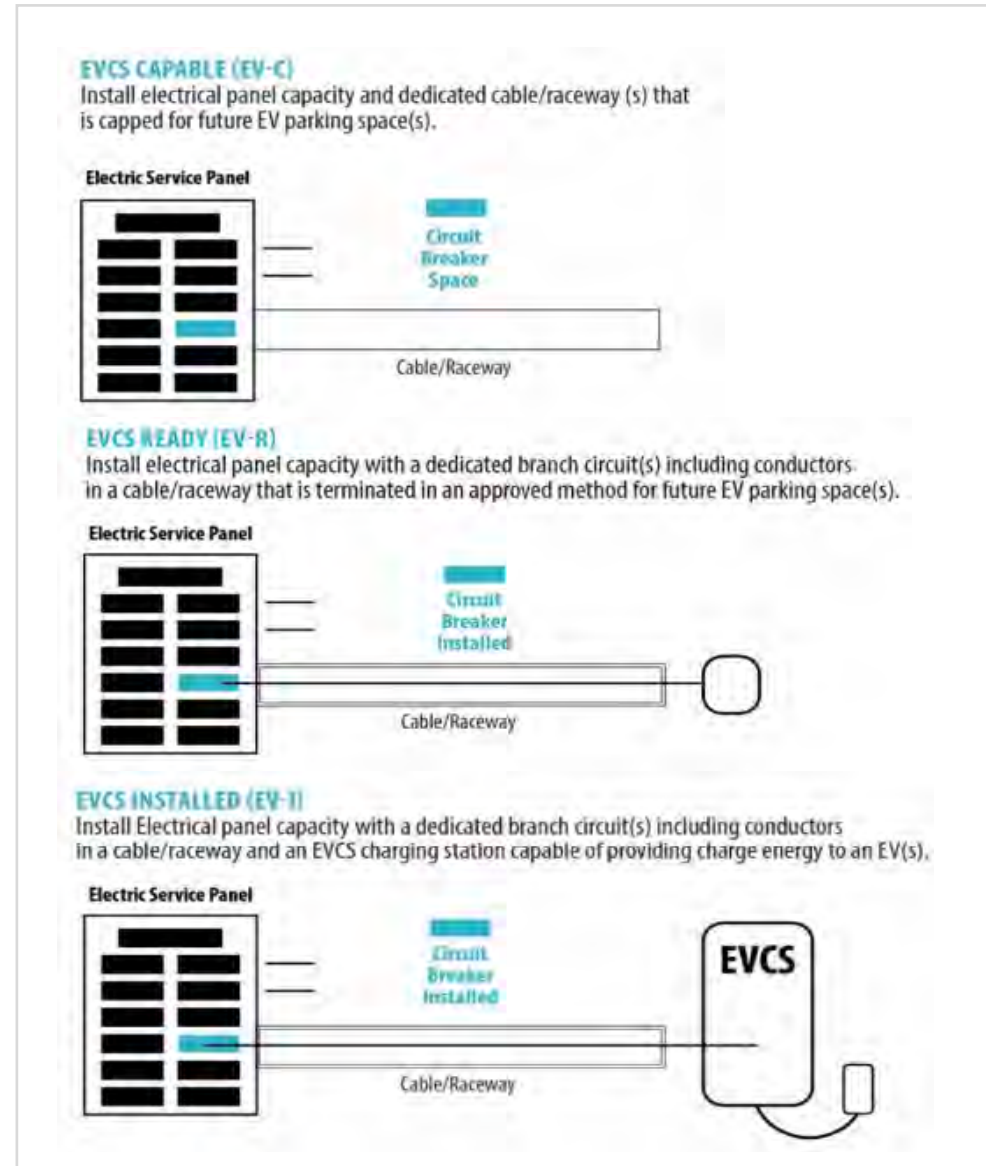




# Charging Station Design and Readiness Basics

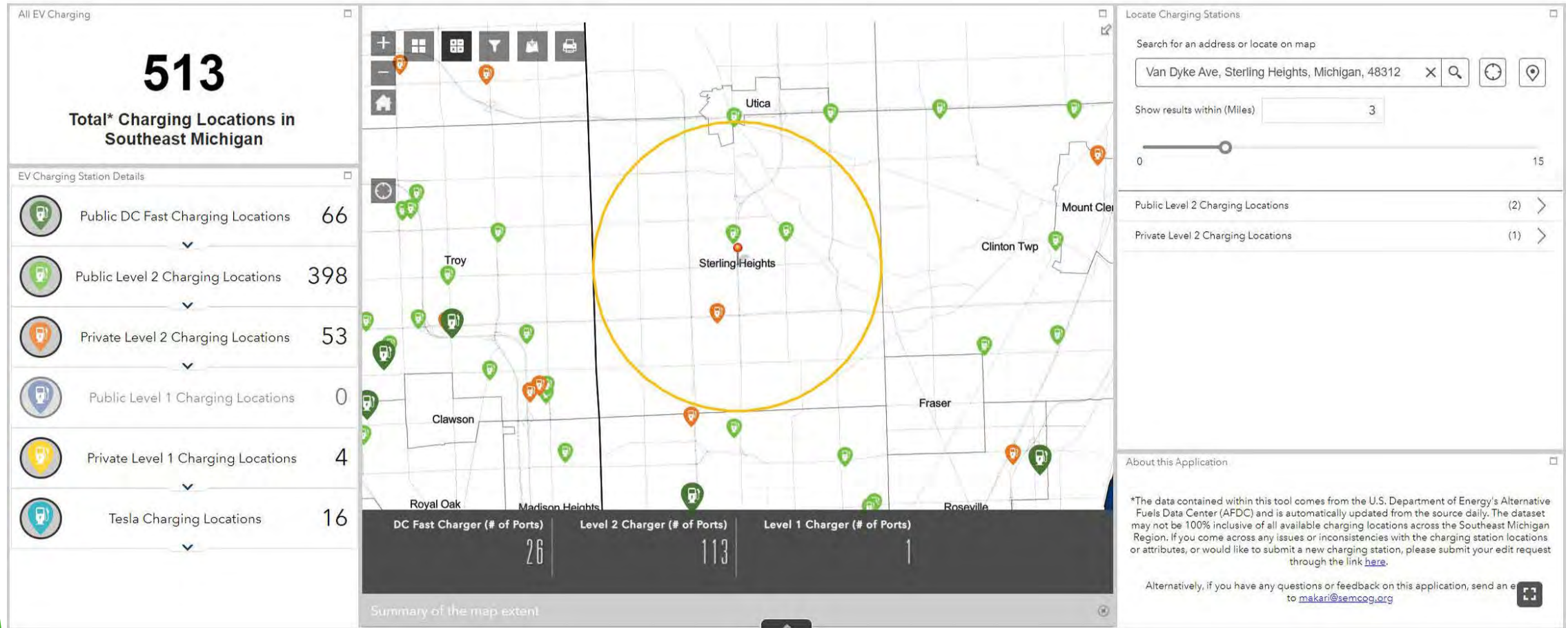


Source: SEMCOG



Source: City of Ann Arbor Zoning Ordinance

# Regional Needs Analysis



# Plan Limitations

Quantified outcomes were not part of the Scope of Work

- No future demand modeling
- No sites identified
- No evaluation of city-fleet
- No preliminary design, distribution assessment, or cost estimates
- No recommended ownership model (city-owned vs. private partnership)

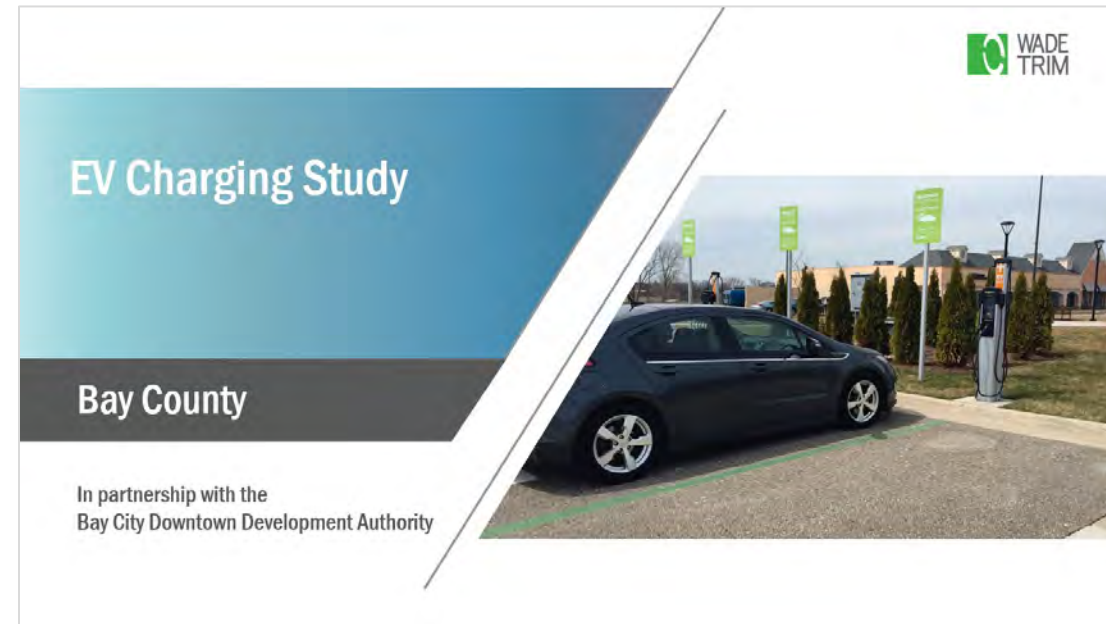
# Bay County EV Charging Study

Main objectives of the project:

1. Position for Federal funding
2. Establish place-based EV infrastructure in and adjacent to downtown businesses

Scope includes:

- Demand modeling
- Review county-owned sites and fleet
- Site inventory and selection
- Funding map



Funding Sources

- USDOT CFI Program
- THUD Earmark
- State EV Program
- ...and more!



**Thank  
You!**



**Erich Smith, PE**

Vice President

[esmith@wadetrim.com](mailto:esmith@wadetrim.com)

**Wayne Hofmann**

Client Funding Director

[whofmann@wadetrim.com](mailto:whofmann@wadetrim.com)