

# Electric Vehicle Charging Public Hearing March 23, 2021

Proposed zoning regulation changes  
South Windsor Energy Committee



# State Climate Objectives

- Connecticut statutes:
  - Reduce greenhouse gas (GHG) emissions 80 percent below 2001 levels by 2050 (Public Act 08-98),
  - Interim target of 45 percent below 2001 levels by 2030 (Public Act 18-82).
- Transportation makes up 38% of GHG emissions, will need to become zero-emission.
  - To stay on 2030 target, GC3 recommends reducing transportation emissions 29% from 2014.
  - Dec 2015 – CT joined International zero emission vehicle (ZEV) alliance: by 2050 - all new passenger vehicles ZEVs
- July 2020 – CT joins multi-state Medium and Heavy-duty ZEV MOU:
  - By 2050 - 100 percent of all new medium- and heavy-duty vehicle sales be ZEVs
  - Interim target for 2030 having 30 percent ZEV sales

# Additional State Climate Objectives (continued)

## GC3 (Governor's Council on Climate Change) Near Term Actions Report:

Expand electric vehicle (EV) charging network to ensure consumer confidence and reduce range anxiety.

- a. Revise zoning regulations and building codes to require: (a) a minimum number of zero emission vehicles (ZEV) parking spaces for new construction in both multi-unit dwellings and commercial properties; and (b) all new residential construction to be EV-ready.
- b. Prohibit homeowner associations, condominium associations, and landlords from restricting homeowners, condominium owners, and lessees with assigned parking spaces from installing charging equipment and associated metering equipment when certain conditions are met.
- c. Provide incentives to property owners of existing multi-unit dwellings and to homeowners' associations to add charging stations.
- d. Develop educational programs for business owners, commercial property owners, and residents; overnight charging opportunities for people without garages; and dedicated ZEV parking with EV charging at municipal offices.
- e. Post Alternative Fuel Corridor signage on the Federal Highway Administration's designated corridors in Connecticut to let drivers know about available charging and to encourage installation of additional charging stations.

# Electric Vehicles becoming a major market share

- As of June 30, 2020,
  - 12,624 EVs registered in Connecticut.
  - Early Adopters and True Believers
- DEEP: “Electric Vehicle Roadmap for Connecticut, ...,” 2020.
  - 125,000 to 150,000 EVs on the road by 2025
  - Economical choice for many new car buyers
  - 500,000 by 2030.
- Numerous manufacturers converting offering to all electric vehicles
- CT and South Windsor must provide for and encourage this growth



# Role of Zoning

- Zoning regulations
  - Can require EV Supply Equipment (EVSE) in new construction and major upgrades
  - Ensure EVSE is permitted as an accessory use everywhere
- Phased approach
  - Require wired spaces (EV Ready) for the future (10% in many locations)
  - Require a smaller number of these to have chargers (EV Installed) in the short term (3%)
  - Increase installed fraction later (6% 2024, 10% 2028)
  - Housing and business: base on required parking. Some businesses: base on employee parking
  - In some situations, accept conduits under parking lots (EV Capable) as 1st step
- Must include some Handicapped Parking EV Spaces

# Requirements

## EV Make Ready Policies

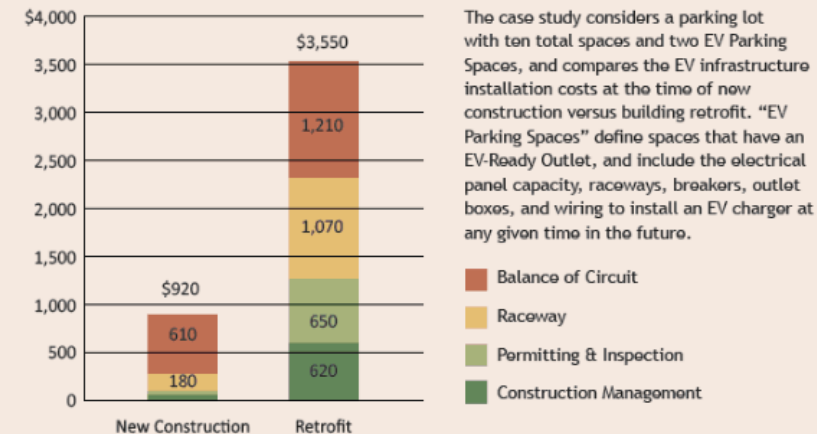
- Require certain structures to have conduit and wiring in place to accommodate EVSE
- Cost effective
- Prepared to support electrification of transportation
- Plan to expand



Photo by Kendall Septon / NREL, NREL 45635

### Cost per EV Parking Space: New Construction vs Retrofit

Case Study prepared for the City and County of San Francisco (2016)



Source: Southwest Energy Efficiency Project

Live Green

# Plan of Conservation and Development (POCD)

- Section 14 D – Plan for Alternative Energy
  - “Many municipalities are turning to alternative energy sources for municipal facilities and encouraging private sector to install alternative energy sources.”
  - “The Town should ensure that it has proper provisions in the Zoning Regulations to allow appropriate alternative energy installations and to manage any potential impacts.”



# Proposed South Windsor Regulations

- EV Charging permitted as accessory use in all zones
- Destination charging permitted in business zones
- EV Ready (wired) required in 10% of parking spaces
  - New, expanded or rehabilitated business and multi-unit dwelling (MUD) projects
  - All assigned garages in MUD projects
  - No requirement for businesses with 15 or fewer parking spaces
  - Based only on employee parking in short visit businesses (e.g. small shops)
  - 3% installed chargers, more in later years (6% 2024, 10% 2028)
  - One or more ADA van accessible spaces
  - Applicant may request to modify/defer based on site conditions



# Section 11.8 APPENDIX H Electric Vehicle Supply Equipment (EVSE) (Other Provisions)

- Appropriate safety provisions (bollards, wheel stops, cord storage, etc.)
- Required spaces must support all brands, not just Tesla
- Appropriate signage (EV only, directions, rates, etc.)
- Advertising (TV screens) permitted if not visible from roadway/homes
- May be restricted (e.g. condo/apartment residents, club/gym members)
- ADA spaces - ensure access to equipment
- Fleet parking areas not required - when needed by business

# Types of Charging Stations

- Level 1 : 120 volt, typical of small appliance plug
  - Very slow but may be enough for use by a commuter
  - For most homes, no extra wiring needed
- Level 2: 240 volt, typical of a dryer outlet
  - Can fully charge all current cars and small trucks overnight
  - Most public and semi-public installations
- Level 3 or Direct Current Fast Charging (DCFC): 208 -480 volt
  - Destination charging facilities listed on national database for long-distance travelers
  - Can fully charge all current cars and small trucks in about one hour

Level 1



Level 2

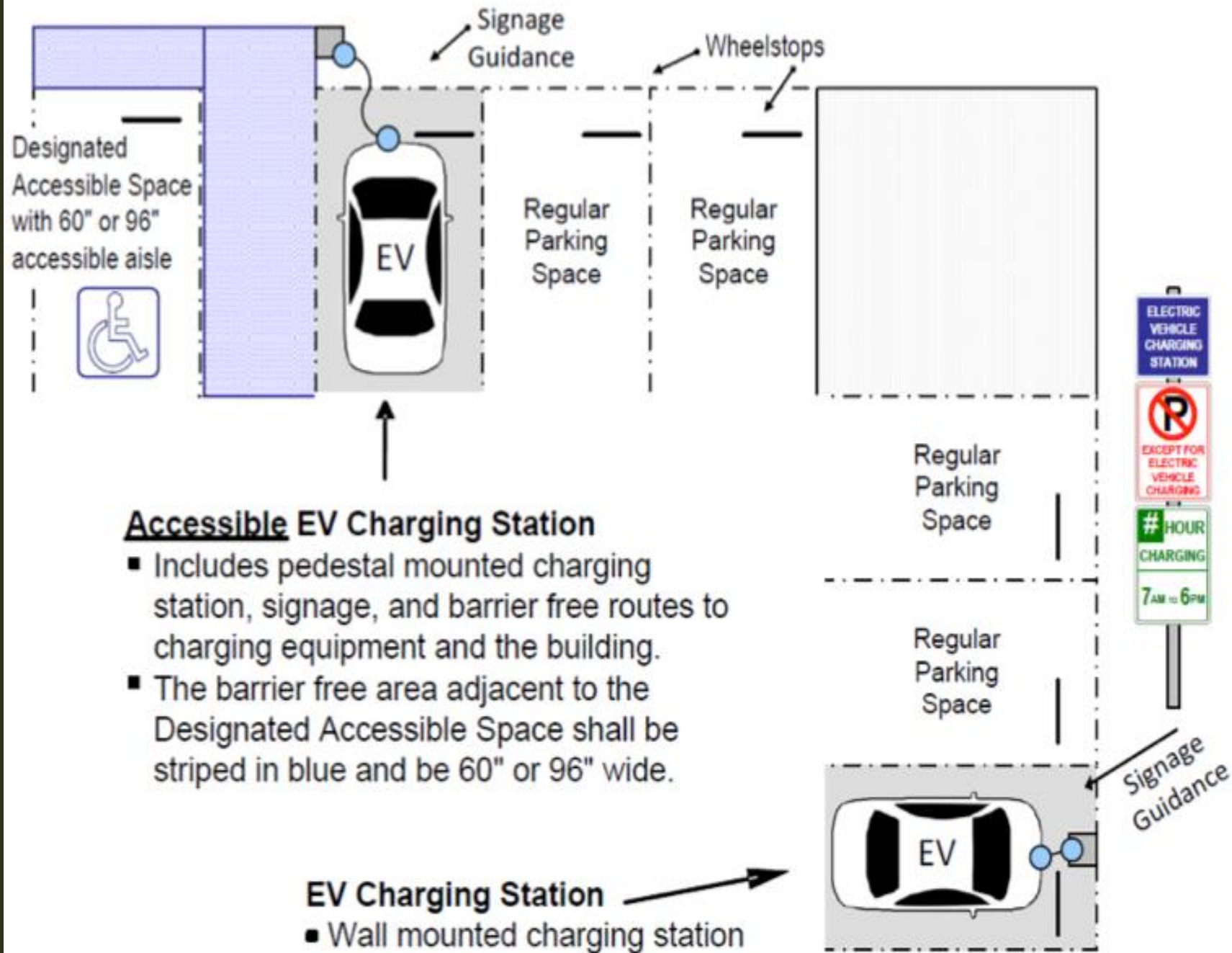


DC Fast  
Charger



# Typical Layout

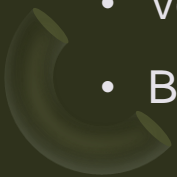
- See regular and accessible spaces
- Note: EVSE requires more space
- Credit 1 less required parking space for every 5 EV Charging Stations



# Paying:

## Multiple options depending on situation

- Generally owned and managed by equipment supplier
  - Credit card
  - Proprietary fob or card
  - Occupant's electric bill
- Avoid burden on site owner/manager
- Installation costs
  - Note that federal or state incentives may be available
  - Volkswagen settlement
  - Build financing into user fees



# Benefits

- Keeping South Windsor as an attractive place to live and work
- Maintain South Windsor as a leader in clean energy
- Provide for growth of EV Market as new and used EVs become more available
- Encourage purchase of EVs by ensuring owners can charge vehicles
- Make multi-unit housing more attractive to renters and buyers
- Make workplaces more attractive to workers owning EVs
- Reduce cost of installation by building underground infrastructure during construction
- Offer business opportunity to sell charging services to destination and local markets

