

# ENERGY COMMITTEE

## TOWN OF SOUTH WINDSOR

Minutes

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December 11, 2020

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### Virtual Meeting Special Meeting

#### 1. Call Meeting to Order

The meeting was called to order at 10:03 a.m.

#### 2. Roll Call

Members Present: Larry Brown, Resident  
Darrell Crowley, Board of Education  
Hank Cullinane, Resident  
Jeff Doolittle, Town Engineer  
Marek Kozikowski, Board of Education  
Andy Paterna, Town Council  
Sherman Tarr, Resident  
Stephen Wagner, Resident

Members Absent: Councilor Cesar Lopez, Town Council  
Athena Loukellis, Resident  
Councilor Janice Snyder, Town Council

#### 3. **Next Meeting** – To be determined

#### 4. **Business**

- A. Zoning for Electric Vehicle Charging (Steve Lewis attending)
  - a. Subcommittee reports (Wagner, Cullinane, Lewis)
  - b. Discussion of proposed regulations, letter, and power-point
  - c. Recommendation to PZC

The Energy Committee reviewed the proposed changes that will be brought to the Planning & Zoning Commission, as shown in attached **Exhibit A**.

Chairman Wagner informed the Committee that a memo had been drafted, which is addressed to the Planning & Zoning Commission, as well as copies to other Commissions, as shown in **Exhibit B**.

#### 5. **Approval of Minutes (September 8, 2020, and December 4, 2020)**

Minutes will be approved at the next Energy Committee meeting.

## **MINUTES**

### **Energy Committee Meeting – Special Meeting**

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December 11, 2020

#### **ITEM:**

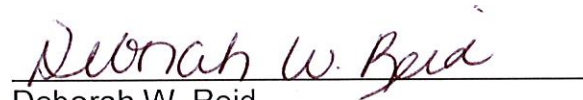
##### **6. Miscellaneous**

Mr. Doolittle informed the Committee that the solar canopies at the Police Department would need to go back to the Town Council for approval.

##### **7. Adjournment**

At 12:04 p.m. Mayor Paterna made a motion to adjourn the meeting. Mr. Crowley seconded the motion, and it was approved unanimously.

Respectfully submitted,

A handwritten signature in dark ink, reading "Deborah W. Reid", is written over a horizontal line.

Deborah W. Reid  
Clerk of the Council

3.1 Residential Zone Requirements

3.1.2.I [New] Electric Vehicle Supply Equipment (EVSE) is permitted as an accessory use. See Appendix H Electric Vehicle Supply Equipment.

3.2 Residential Zones (RR, AA and A)

3.2.1.H [New] Electric Vehicle Supply Equipment (EVSE) is permitted as an accessory use. See Appendix H Electric Vehicle Supply Equipment.

3.4 Multifamily Residential Zone (MF-A or MF-AA)

3.4.2.B [New] Electric Vehicle Supply Equipment (EVSE) is permitted as an accessory use. See Appendix H Electric Vehicle Supply Equipment.

3.4.7.G [New] EVSE Ready Spaces and EV Installed Spaces shall be provided as described in 6.4.10. Minimum Number of EVSE Parking Spaces and Appendix H Electric Vehicle Supply Equipment. All garages and assigned covered spaces shall be wired as EV Ready Spaces.

4.1 Commercial and Industrial Use Regulations

4.1.3 [Add text] Electric Vehicle Supply Equipment (EVSE) is permitted as an accessory use; see Appendix H Electric Vehicle Supply Equipment.

4.2 Buckland Road Gateway Development Zone

4.2.5.F [New] Electric Vehicle Supply Equipment (EVSE) is permitted as an accessory use. See Appendix H Electric Vehicle Supply Equipment. EVSE is permitted as a primary use by Special Exception.

4.2.15.A.2.h [Add text] EVSE Ready Spaces and EV Installed Spaces shall be provided as described in 6.4.10. Minimum Number of EVSE Parking Spaces and Appendix H Electric Vehicle Supply Equipment. All garages shall be wired as EV Ready Spaces.

4.2.11.C.2.e. [New] EVSE Ready Spaces and EV Installed Spaces shall be provided as described in 6.4.10. Minimum Number of EVSE Parking Spaces and Appendix H Electric Vehicle Supply Equipment.

Section 4.6 Route 5 Travel Zone (TS)

4.6.3 Specific Design Standards & Use Restriction/Guidelines

9. ... motor vehicle refueling/re-energizing (e.g. Electric Vehicle Supply Equipment) ...

5.6 Center Core Overlay Zone

5.6.9.C.6 [New] EVSE Ready Spaces and EV Installed Spaces shall be provided as described in 6.4.10. Minimum Number of EVSE Parking Spaces and Appendix H Electric Vehicle Supply Equipment. Equipment locations shall be similar to the location for streetlights illustrated in Section 5.6.9.B. In addition, all streetlights shall have EV Level 1 outlets on the pole.

5.10.2.B.22 [New or add to 5.10.2.B.15] EVSE Ready Spaces and EV Installed Spaces shall be provided as described in 6.4.10. Minimum Number of EVSE Parking Spaces and Appendix H Electric Vehicle Supply Equipment. All garages and assigned covered spaces shall be wired as EV Ready Spaces.

ARTICLE 3 RESIDENTIAL ZONES

Section 3.1 Residential Zone Requirements

3.1.1 Permitted Uses, Impervious Coverage and Other Provisions

Uses within residential zones shall be governed by Table 3.1.1A. For uses requiring a Special Exception, see Section 8.4 Special Exception Standards and Procedures.

Table 3.1.1A - Permitted Uses, Impervious Coverage and Other Provisions						
Use	Zones				Impervious Coverage	Additional Provisions
	RR	AA-30	A	MF		
P = Permitted SE = Special Exception Blank = Not Permitted	RR = Rural Residential AA-30 = Limited Residential A = A-40, A-30, & A-20 Residential MF = Multifamily					

Residential

# Exhibit A

Accessory Apartments	SE	SE	SE			See Article 7 Special Regulations.
Agri-Tourism	SE		SE*			*Limited to A-40 zones. See Section 5.9
Assisted Living Facilities	SE	SE	SE	SE		See Article 7 Special Regulations.
Bed and Breakfast (for not more than 6 guests)	SE		SE		10%	Provided that such use is served by public sewer and water facilities. Meals served shall be limited to breakfast.
Elderly Housing	SE	SE	SE		40%	See Article 7 Special Regulations.
Household Pets	P	P	P	P		Excludes kennels
Horses and ponies for personal use, to include large domestic animal pets (3 or fewer)	P	P	P			See Article 7 Special Regulations.
Horses and ponies for personal use, to include large domestic animal pets (more than 3)	SE	SE	SE			See Article 7 Special Regulations.
In-Law Apartment	P	P	P			See Article 7 Special Regulations. A Special Exception is required in the event that any waiver is requested relative to the criteria of 7.1.3.A.
Multifamily Dwelling				SE		Accessory uses to dwellings as determined and approved by the Commission and which are intended and designed for the maintenance or operation of the property and/or the use of its residents are permitted.

**Table 3.1.1A - Permitted Uses, Impervious Coverage and Other Provisions**

<b>Use</b>	<b>Zones</b> RR = Rural Residential AA-30 = Limited Residential A = A-40, A-30, & A-20 Residential MF = Multifamily				<b>Impervious Coverage</b>	<b>Additional Provisions</b>
	<b>RR</b>	<b>AA-30</b>	<b>A</b>	<b>MF</b>		
Multifamily Assisted Housing		SE				See Article 7 Special Regulations
Single-family Dwelling	P	P	P			Accessory uses to dwellings as determined and approved by the Commission and which are intended and designed for the maintenance and/or operation of the common interest community-owned land and/or the use of its residents are permitted.
Two Family Dwelling converted from single-family	SE		SE			<p>Provided that:</p> <p>The building shall have been constructed prior to 1940.</p> <p>The lot has an area of not less than 30,000 sq. ft., and sufficient area to provide for sub-surface disposal of additional sewage.</p> <p>The external appearance and general character of the building as a single-family dwelling shall be preserved.</p> <p>Family dwelling units shall conform to the minimum requirements listed in Table 3.1.2A Residential Area, Density and Dimensional Requirements.</p>

**Public and Semipublic**

Cemeteries	SE				50%	Provided that no activity shall be conducted which is hazardous or dangerous to persons or property outside of the lot on which the activity is conducted
Day Care Centers	SE					See Article 7 Special Regulations.
Educational Institution: For Profit	SE	SE	SE		35%	<p>Provided that:</p> <p>No activity shall be conducted that is hazardous or dangerous to persons or property outside of the lot on which the activity is conducted.</p> <p>No activity is carried on that results in objectionable noise audible off the premises.</p> <p>The external appearance and general character of the building as a single-family dwelling shall be preserved.</p>

**Table 3.1.1A - Permitted Uses, Impervious Coverage and Other Provisions**

<b>Use</b>	<b>Zones</b>				<b>Impervious Coverage</b>	<b>Additional Provisions</b>
	<b>RR</b>	<b>AA-30</b>	<b>A</b>	<b>MF</b>		
<b>P = Permitted</b> <b>SE = Special Exception</b> <b>Blank = Not Permitted</b>	<b>RR = Rural Residential</b> <b>AA-30 = Limited Residential</b> <b>A = A-40, A-30, &amp; A-20 Residential</b> <b>MF = Multifamily</b>					
Educational Institution: Non-Profit or Government	SE	SE	SE		RR-50% AA, A-35%	Operated by a duly incorporated non-profit body or government unit
Essential Community Services	SE	SE	SE	SE	50%	
Golf Courses	SE				10%	See Article 7 Special Regulations.
Hospitals, Sanitariums, Convalescent Homes	SE				50%	Except for contagious, mental, alcoholic, and drug cases Provided that: The lot area is not less than 1/10 acre for each person accommodated, including patients and employees. Such uses are served by the public sewer and water facilities.
Municipal Facilities and Uses	SE	SE	SE	SE	50%	
Public Utility Buildings and Structures, e.g., substations, transform- ers, water supply reser- voirs, wells, water tow- ers and water treatment facilities	SE	SE	SE		50%	Provided that: There is no service yard or outside storage of supplies. Buildings and/or grounds conform to the general character of the neighborhood.
Recreational Areas, Parks, Playgrounds operated by the Town of South Windsor	SE	SE	SE		50%	
Recreational Facilities, forest or wildlife reser- vation, park or play- ground not operated for profit	SE	SE	SE		50%	Operated by a duly incorporated non-profit body or government unit
Religious Institutions - churches, temples and other recognized places of worship	SE	SE	SE		RR-50% AA, A-35%	Operated by a duly incorporated non-profit body or government unit
Solar Energy, Roof Mounted	P	P	P	P		See Article 7, Special Regulations



**Table 3.1.1A - Permitted Uses, Impervious Coverage and Other Provisions**

Use	Zones				Impervious Coverage	Additional Provisions
	RR = Rural Residential	AA-30 = Limited Residential	A = A-40, A-30, & A-20 Residential	MF = Multifamily		
P = Permitted SE = Special Exception Blank = Not Permitted						

**Commercial Uses**

Agriculture, forestry, truck or nursery gardening, including green- houses incidental thereto	P					Not including veterinary hospitals, veterinary kennels, commercial kennels, animal boarding homes, livery or boarding stable. Excludes swine and animals raised for pelts except for domestic use. See Section 7.12 Horses/Ponies and Home Animal Agriculture for Home Animal Agriculture and Commercial Animal Agriculture regulations.
AC Level 1 and AC Level 2 Electric Vehicle Charging Equipment (EVSE)	SE	SE	SE	SE		As a primary use (destination charging) for sale of EV Charging services to the public, similar in intent to internal combustion engine fueling (e.g. gasoline or diesel).  See Appendix H – Electric Vehicle Supply Equipment
Farms	P		P			
Farm Stands	SE		SE			See Article 7 Special Regulations.
Home Occupations, Home Office, Professional Office (Major)	SE		SE			See Article 7 Special Regulations.
Home Occupations, Home Office, Professional Office (Minor)	P	P	P	P		See Article 7 Special Regulations.
Offices - professional, commercial and business	SE		SE		50%	See Article 5.3 Special Regulations.
Solar Energy System, Large	SE					See Article 7, Special Regulations
Solar Energy System, Small	SE		SE**		20%	See Article 7, Special Regulations
Stables, Barns, Riding Academies	SE		SE**		20%	See Article 7 Special Regulations.

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# ARTICLE 4 COMMERCIAL AND INDUSTRIAL ZONES

## Section 4.1 Commercial and Industrial Use Regulations

### 4.1.1 Permitted Uses

Uses within Commercial and Industrial Zones shall be governed by Table 4.1.1A. See Section 4.2 for use provisions relating to the Buckland Road Gateway Development Zone (GD); Section 4.3 for the De- signed Commercial Zone (DC); and Section 4.4 for the I-291 Corridor Development Zone (CD).

**Table 4.1.1A Permitted Commercial and Industrial Uses**

Use	Zones						Additional Provisions
	DC	GC	I	RC	RO	TS	
<b>Residential</b>		SP/SE*	SP/SE*	SP/SE*			A single residential dwelling by the owner of the facility is allowed in conjunction with a permitted commercial use. The residence may be either a dwelling unit contained within the commercial facility itself, or may be a separate free-standing single-family dwelling that otherwise meets all of the requirements of the underlying zone. * An owner can request either the business/residential use be a rental property for properties developed prior to 2019 provided the owner lives on site or operates the business. No more than 10% of properties within 1,000 feet can contain such rentals.
Assisted Living	SE	SE		SE	SE		See Article 7 Special Regulations.
Duplex		SE					See Article 7 Special Regulations.
Horses and ponies for personal use		SP		SP	SP		See Article 7 Special Regulations.
Multi-family residential		SE					See Section 5.10 -- Specific Requirements for a Sullivan Avenue Mixed-Use Development in the GC
<b>Public and Semipublic</b>							
Hospitals, Sanitariums, Convalescent Homes		SE					Except for contagious, mental, alcoholic, and drug cases provided that: The lot area is not less than 1/10 acre for each person accommodated, including patients and employees; Such uses are served by the public sewer and water facilities; and 50% impervious coverage

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Fraternal organizations and membership clubs operated as a nonprofit activity			SE				
Municipal Facilities and Uses	SE	SE	SE	SE	SE		

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**Table 4.1.1A Permitted Commercial and Industrial Uses**

SE = Special Exception SP = Site Plan ZP = Zoning Permit Blank = Not Permitted	Zones						Additional Provisions
	DC = Design Commercial GC = General Commercial I = Industrial RC = Restricted Commercial RO = Restricted Office TS = Route 5 Travel Services						
Use	DC	GC	I	RC	RO	TS	
Commercial Uses							
Agriculture (e.g. forestry operation, cultivated lands, animals)	P	P	P	P	P	P	Clearing of ½ acre of land requires PZC approval.
Adult-Oriented Businesses		SE					See Article 7 Special Regulations.
Alcoholic Liquor Stores	SP	SP		SP			
Alcoholic beverage sales for consumption on the premises of hotels, restaurants, taverns, grills and cafes	SP	SP	SE*	SP			*Industrial zone -- accessory to a permitted recreational use or manufacturing use
Alcoholic liquor sales as part of a drug store or grocery store	SP	SP		SP			
Amusement - theaters, moving picture houses, assembly halls, billiard and pool rooms, bowling alleys, and similar amusement enterprises		SP	SE*				Excluding shooting galleries, freak shows, mechanical rides and similar enterprises * Industrial zone in conjunction with permitted indoor recreational use. See Article 7 Special Regulations
Automobile retail sales, new and used		SE	SE*				* Maximum cars offered for sale is four (4)
Automobile service and repair			SP				
Automobile wholesale		SE					
Automobile service stations, fuel and repair		SE					See Article 7 Special Regulations.
Automotive fuel	SP						Only when accessory to a retail sales and inventory directly related thereto facility that has a minimum gross floor area of 50,000 sq ft  Commission may determine hours of operation.
Brewery / Distillery			SP				Accessory uses and incidental sales (e.g. tasting rooms) subject to criteria in Section 4.5.3 Accessory Uses. Parking is subject to PZC approval.
Beverage Stores, quick service; e.g. coffee shop						SP	
Building and landscape materials sales and storage including lumber yards and construction equipment			SE				Excluding the storage or fabricating of structural steel and heavy concrete products. Primary building shall be minimum 2,000 sq ft (excluding greenhouses). Except plant materials, outdoor storage/sales area shall not be visible from a public street.
Convenience Stores						SP	

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**Table 4.1.1A Permitted Commercial and Industrial Uses**

<b>SE = Special Exception SP = Site Plan ZP = Zoning Permit Blank = Not Permitted</b>	<b>Zones</b> DC = Design Commercial GC = General Commercial I = Industrial RC = Restricted Commercial RO = Restricted Office TS = Route 5 Travel Services						<b>Additional Provisions</b>
	<b>DC</b>	<b>GC</b>	<b>I</b>	<b>RC</b>	<b>RO</b>	<b>TS</b>	
Convention Facilities	SE						
Day Care Facilities	SE	SE	SE	SE	SE		See Article 7 Special Regulations.
Dog Grooming Facilities		SE	SE	SE			See Article 7 Special Regulations for Dog Grooming Facilities in the Industrial Zone
Dry cleaning, laundry, and dyeing establishments		SP					
AC Level 1, AC Level 2, and DC Fast Charging Electric Vehicle Charging Equipment (EVSE)	SE	SE	SE	SE	SE		As a primary use (destination charging) for sale of EV Charging services to the public, similar in intent to internal combustion engine fueling (e.g. gasoline or diesel).  See Appendix H – Electric Vehicle Supply Equipment
Entertainment (live) at hotels and restaurants, taverns, grills and cafes	SP	SP	SE*				*Industrial zone in conjunction with permitted indoor recreational use. See Article 7 Special Regulations
Equipment sales, service and rentals, including farm equipment		SP	SE				
Financial Services, institutions and agencies	SP	SP	SP	SP		SP	
Fitness Facilities		SP	SE	SP		SP	See Article 7 Special Regulations for indoor recreational facilities
Freezer lockers and incidental processing of food for human consumption		SP					
Garages - public		SP		SE			
Hotels (and motels)	SP	SP		SP		SP	
Hotels, exclusive of entertainment		SP		SP			
Manufacture of bricks, cement products, tile and terra cotta			SE				
Manufacture, processing, packaging and assembly of components or goods			SP				
Microbrewery, Brewpub		SP		SE			No more than 15,000 barrels manufactured per year; wholesale and retail sales allowed; tasting rooms allowed; outside tasting allowed in conformance with Section 7.15 Outdoor Dining. Hours of operation may be determined by the PZC

Exhibit A

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Mobile Food Vendor	ZP	ZP	ZP	ZP	ZP	<p>Mobile food vendors are permitted in these zones without a permit provided that all of the following criteria are met:</p> <ol style="list-style-type: none"><li>1. Written permission from the property owner;</li><li>2. Adequate room for vehicles to pull off safely;</li><li>3. A maximum of 12 sq. ft. of free-standing signage;</li><li>4. Vendors shall not be located within public rights of way;</li></ol>
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**Table 4.1.1A Permitted Commercial and Industrial Uses**

Use	Zones						Additional Provisions
	DC	GC	I	RC	RO	TS	
							5. All facilities and equipment used by vendor must be portable and must be removed from the site by 9:00 p.m. 6. Connections to external utilities are not permitted. 7. Vendors must comply with health and safety regulations of the Town of South Windsor and the State of Connecticut. 8. Vendors shall keep the area of operation free of debris and shall clean the area thoroughly upon ceasing operations each day. At least 1 trash container must be provided for use by patrons in conjunction with mobile food vendor.
Mortuaries, funeral and interment services		SP		SP			May have living quarters containing a dwelling unit of at least 700 square feet of living space and at least 2 rooms, exclusive of the bathroom, to be occupied by a person, together with his family, who is the owner, manager, caretaker, or janitor, residing in the same building.
Multi-family residential		SE					See Section 5.10 – Specific Requirements for a Sullivan Avenue Mixed-Use Development in the GC zone
Motor vehicle refueling / re-energizing stations						SP	
Offices - professional, commercial, corporate and business	SP	SP	SP	SP	SP	SP	
Personal Services Shops	SP	SP		SP			Limited to barber shops, beauty shops, shoe repair shops, tailoring and dressmaking shops, tanning salons, clothes rental stores, and similar establishments. Tattoo parlors are not considered a personal service shop.
Pharmacy	SP	SP		SP		SP	Including pharmacy with drive thru.
Petroleum Product Bulk Storage			SE				
Plumbing, heating, electrical, mechanical industrial and general contracting establishments			SP				May include showrooms, storage and maintenance of heavy construction equipment
Printing and publishing, graphic arts processes, sign shop painting		SP	SP				
Radio and television studios and transmitters, communication towers, multi media stations		SP					

**Table 4.1.1A Permitted Commercial and Industrial Uses**

<b>Use</b>	<b>Zones</b>						<b>Additional Provisions</b>
	<b>DC</b>	<b>GC</b>	<b>I</b>	<b>RC</b>	<b>RO</b>	<b>TS</b>	
Recreational Activities - indoor	SP	SP	SE*				*See Article 7 Special Regulations.
Recreational Facilities – outdoor		SE	SE*				*See Article 7 Special Regulations
Research Laboratories			SP				
Restaurants, including fast food	SP	SP		SP		SP	
Restaurants, exclusive of entertainment		SP		SP			
Retail Establishments with high turnover (frequent customer arrivals / departures)						SP	
Retail sales and inventory directly related thereto	SP	SP		SP			<p>Retail sales and high-turnover uses with frequent customer arrivals and departures are prohibited.</p> <p>Retail sales associated with a club membership format are permitted and shall not be considered a wholesale sales use.</p> <p>Repairing and fabricating incidental to a retail store are permitted as an accessory use.</p> <p>Tire and battery repair and replacement as an accessory use to retail sales is permitted in the DC zone only.</p>
Riding Academies, Barns and Stables		SP					
Solar Energy, Roof Mounted	P	P	P	P	P	P	See Article 7, Special Regulations
Solar Energy System, Large		SE	SE				See Article 7, Special Regulations
Solar Energy System, Small		SP	SP				See Article 7, Special Regulations
Solid waste, recycling, transfer station facilities			SE				Including storage and maintenance of vehicles and refuse containers, but excluding dumping and/or disposal on-site of waste originating off-site
Training Facilities		SE	SE	SE			
Truck and Freight Terminals			SE				With the right to service, maintain and repair motor vehicles incidental to the afore- said use
Veterinary Hospitals and Boarding Kennels			SE				For the treatment and boarding of small animals, primarily cats and dogs, with all facilities housed inside a building with a limited outside fenced area for exercising and training with necessary office and service space

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## Exhibit A

#### Table 4.1.1A Permitted Commercial and Industrial Uses

<b>SE = Special Exception</b> <b>SP = Site Plan</b> <b>ZP = Zoning Permit</b> <b>Blank = Not Permitted</b>	<p style="text-align: center;"><b>Zones</b></p> DC = Design Commercial GC = General Commercial I = Industrial RC = Restricted Commercial RO = Restricted Office TS = Route 5 Travel Services						<p style="text-align: center;"><b>Additional Provisions</b></p>
<b>Use</b>	<b>DC</b>	<b>GC</b>	<b>I</b>	<b>RC</b>	<b>RO</b>	<b>TS</b>	
Warehouses and Distribution Centers			SP				
Wholesale sales and inventory directly related thereto			SE				
Wholesale sales and inventory directly related thereto for the public		SP					
Note that in the GC Zone, buildings in excess of 40,000 square feet, parking areas in excess of 50 cars, and non-bank drive-in facilities require a special exception approval.							



## **Section 6.4 Parking and Access – Off-street Parking and Loading**

### **Section 6.4 Parking and Access – Off Street Parking and Loading**

#### **6.4.10. Minimum Number of EVSE Parking Spaces**

- a. In all districts, the minimum number of parking spaces shall be provided in accordance with the following tables and apply to new construction, an increase of 10,000 square feet of floor space, or expansion of 50 parking spaces. When a change of use is proposed that requires additional EVSE spaces, the Commission may consider the extent of renovations and new or additional construction in determining whether to require the additional spaces. See Appendix H for detailed requirements.
- b. EV Capable Spaces may be installed in addition to the required EV Ready and EV Installed spaces.
- c. For each five or more EV Ready Spaces at a site, the Commission may reduce total required parking by 1 space.
- d. Table 6.4.10A defines the generally required EV Ready Spaces in each site. Tables 6.4.10D and E establish the applicability of Table 6.4.10A to specific uses.
- e. Of these EV Ready Spaces, Table 6.4.10B determines the minimum number which shall be EV Installed Spaces.
- f. Handicapped Accessible vehicle charging stations shall be provided based on Table 6.4.10C. See Appendix H for information regarding Accessible EV Charging Station design.

**Table 6.4.10A Level 2 EV Ready parking space wiring requirements**

<b>Total Number of Parking Spaces*</b>	<b>Number of Required Level 2 EV-Ready or Charging Spaces**</b>
1-9	1
10-25	2
26-50	4
51-75	6
76-100	9
101-150	12
151-200	17
201 and over	10 percent of total
* Truck and equipment parking spaces are not included in the above calculation.	
** The number of spaces has been rounded up to the nearest whole number.	

**Table 6.4.10B Required EV Installed Spaces**

Calendar year of site plan application	EV Ready Spaces with installed EVSE*
2021-2023	3% of required parking
2024-2027	7% of required parking
2028 and beyond	10% of required parking
* Rounded up to the nearest whole number.	

**Table 6.4.10C ADA Requirements for EV Charging**

Total number of EVSE Spaces at site	Number of EV Spaces required to comply with ADA requirements	
	Van Accessible Restricted to EV Charging (Note 1)	Van Accessible Restricted to EV Charging and Handicapped Parking
1 to 4	1	0
5 to 25	1	1
26 to 50	0	2
51 to 75	0	3
76 to 100	0	4
101 or more		4 plus 1 for each 60 or fraction thereof over 100
<p>Note 1: In order to ensure that all EV users have access to charging equipment if only 1 to 4 EVSE stations are installed, the van accessible space shall meet the van accessible design requirements, including wheelchair aisle and ramp providing access to EVSE, but not be restricted to handicapped parking, provided sufficient <u>handicapped</u> restricted spaces are provided in accordance with Paragraph 6.4.4.G.</p>		

**Table 6.4.10D Minimum Required EVSE Parking Spaces – Residential Uses**

Use – Residential	Minimum Required EV Charging Facilities
Multi-family Dwellings and Multi-family Dwellings / SAMUD-OZ	See Tables 6.4.10A-, 6.4.10B, and 6.4.10C.
Assisted Living	All assigned covered or garage parking spaces shall be provided Level 2 EV Ready circuits and outlets. Remaining parking spaces are used in Tables 6.4.10A , 6.4.10B, and 6.4.10C to determine the shared EV Ready and EV Installed Spaces. <u>[Needs further discussion with building department regarding garages.]</u>
Elderly Housing	
Independent Living	
	MUD management shall contract with an EVSE supplier to provide chargers and means for billing usage to residents.
	If garages are adjacent to the associated dwelling, connection may be through the dwelling panel and meter. MUD management may require the occupant to purchase or lease approved EVSE.



**Table 6.4.10E Minimum Required Parking Spaces – Commercial and Industrial Uses**

Use	Minimum Required Parking Spaces
Bar, Nightclub, Lounge	See Tables 6.4.10A , 6.4.10B, and 6.4.10C.
Bowling Alley	
Business Offices	
Hotel, Motel, Tourist Home	
Hospital, Sanitarium, Convalescent or Nursing Home	
Industrial and Manufacturing	
Library	
Places of Assembly, Amusement, Recreation, and Education	
Research	
Restaurants, Taverns, Cocktail Lounges	
Theater	
Park and Ride Lots	See Tables 6.4.10A , 6.4.10B, and 6.4.10C. In addition, all light poles <del>shall</del> <u>may</u> have EV Level 1 outlets.
<u>Charging Lots</u>	
Municipal parks and recreation areas	None required. <u>Allowed as an accessory use.</u>
Retail Stores	<u>Calculation based on employee parking estimated at the time of site plan application. See Tables 6.4.10A, 6.4.10B, and 6.4.10C. <del>Calculation based on employee parking estimated at the time of site plan application.</del></u>
Car Wash	
Fast Food	
Financial Institution	
Library	
Schools	
Medical and Dental Office	
Personal Service Shops	
Day Care and Pre-Schools	<u>Calculation based on sum of requirements for various uses therein (e.g. retail stores, restaurants, etc.) with rounding applied to sum. See Tables 6.4.10A , 6.4.10B, and 6.4.10C. <del>Calculation based on sum of requirements for various uses therein (e.g. retail stores, restaurants, etc.) with rounding applied to sum.</del></u>
Warehouse	
Shopping Center	<u>Calculation based on sum of requirements for various uses therein (e.g. retail stores, restaurants, etc.) with rounding applied to sum. See Tables 6.4.10A , 6.4.10B, and 6.4.10C. <del>Calculation based on sum of requirements for various uses therein (e.g. retail stores, restaurants, etc.) with rounding applied to sum.</del></u>
Church, Synagogue	<u>Recommended. Calculations should consider anticipated parking lot occupancy when religious services are not taking place. See Tables 6.4.10A, 6.4.10B, and 6.4.10C. <del>Calculations should consider anticipated parking lot occupancy when religious services are not taking place.</del></u>

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

### 11.8.1. Purpose

The purpose of this appendix is to provide for and promote the use of Electric Vehicles (EVs) in South Windsor, subject to reasonable conditions that will protect the environment, public health, safety, and welfare. Because EV charging requires more time than internal combustion engine (ICE) refueling, charging facilities will be widely distributed to allow vehicle operators to engage in other nearby activities such as home life, shopping, dining, or recreation while their EVs are being charged.

### 11.8.2. Electric Vehicle Definitions [should these be in the definitions section?]

1. **ELECTRIC VEHICLE:** A motor vehicle capable of being driven by a battery powered electric motor.
2. **ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE) or EV CHARGING STATION:**  
The conductors, including the ungrounded, grounded, and equipment grounding conductors, and the Electric Vehicle connectors, attachment plugs, and all other fittings, devices, power outlets, or apparatus installed specifically for the purpose of transferring energy between the premises wiring and the Electric Vehicle. ~~EVSE may be wall or pole mounted.~~
  - a. **AC LEVEL 1 EVSE:** 110 to 120-Volt, alternating current (AC) EVSE connected to a 20 Ampere electrical outlet, ~~such as used for small kitchen appliances supplying 1.4-1.9 kW. Some AC Level 2 EVSE provides a Level 1 outlet as an alternative to support vehicle requiring AC Level 1 charging.~~
  - b. **AC LEVEL 2 EVSE:** 208 to 240 Volts AC EVSE connected to a 40 Ampere circuit; ~~typical in capacity to a clothes dryer outlet.~~
  - c. **DC FAST CHARGING (DCFC) EVSE:** also known as **LEVEL 3 EVSE:** 208-480 Volt direct current (DC) chargers with 70 Ampere or higher capacity.

### 3. ELECTRIC VEHICLE PARKING SPACES

- a. **EV INSTALLED SPACE:** A designated parking space with Electric Vehicle Supply Equipment (EVSE) installed and operational. ~~EVSE may be shared among two or more spaces.~~
- b. **EV READY SPACE:** A designated parking space which is provided with a minimum 40-ampere, 208/240-volt dedicated branch circuit for AC Level 2 EVSE or higher capacity sufficient to serve DC Rapid Charge EVSE. ~~Electric Vehicles. The circuit shall terminate in a suitable termination point such as a receptacle, junction box, or an EVSE, and be located in close proximity to the proposed location of the EV parking spaces.~~
- c. **EV CAPABLE SPACE:** Electrical panel capacity, and breaker space, and raceways or conduits to support eventual installation of AC Level 2 EVSE. a minimum 40-ampere, 208/240-volt branch circuit for each EV parking space, and the installation of raceways, both underground, surface mounted or structure interior, to support EVSE.

### 11.8.3. Provisions

1. AC Level 1 and AC Level 2 Electric Vehicle Supply Equipment (EVSE) shall be permitted as an accessory use by right in all zoning districts and by Special Exception as primary use. Direct Current Fast Charging (DCFC or Level 3) EVSE are permitted as an accessory use and by Special



Exception as primary use in all Commercial and Industrial Zones as defined in Article 4 of these regulations. Site plan approval is required for all uses except Single and Two-Family Dwellings.

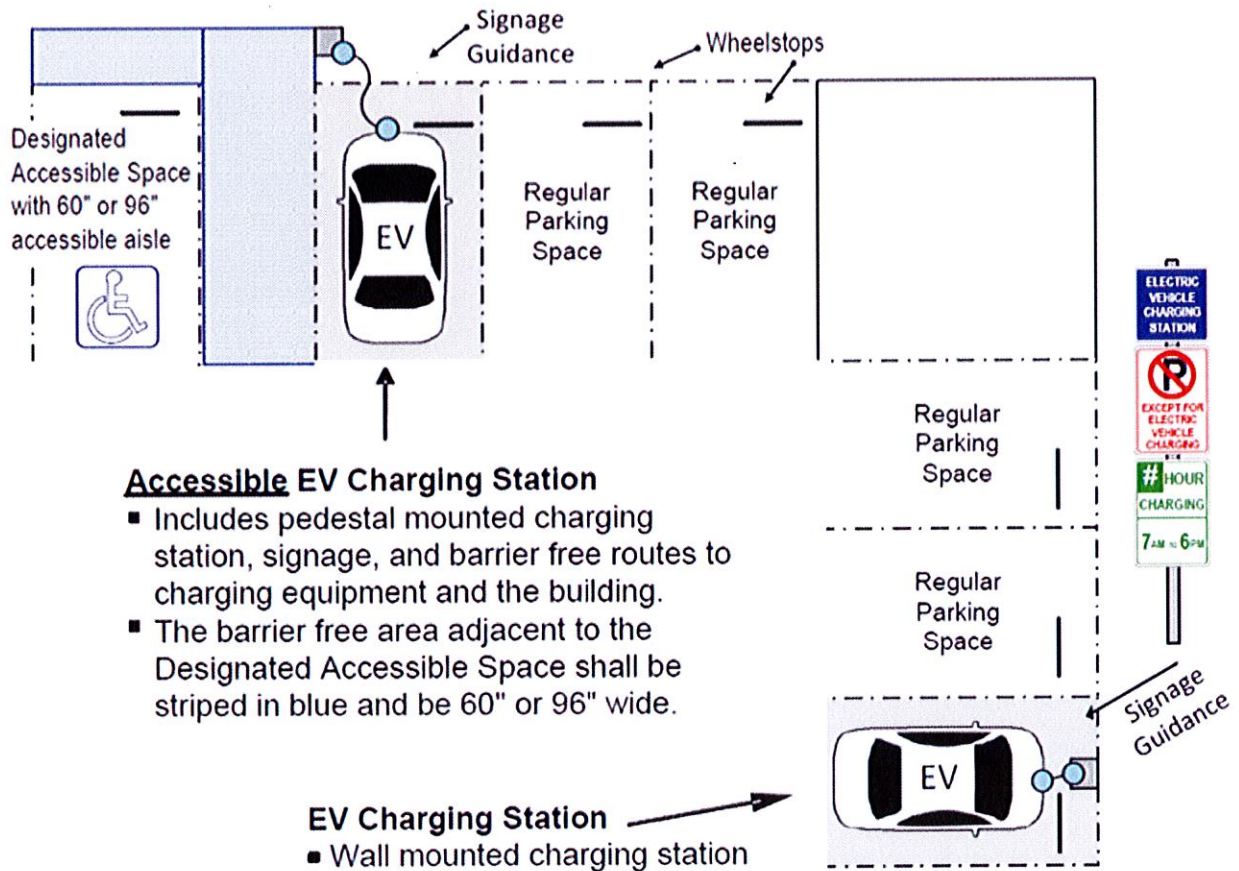
2. The sale of electric energy through EVSE to the public or to appropriately restricted occupants, guests, customers, members, etc. is permitted in all zones except at one- and two-family dwellings. Any access restrictions shall be incorporated in the site plan and approved by the Commission.
3. EVSE connections shall meet current standards designed to be capable of serving all brands of EVs. Support of AC Level 1 at AC Level 2 stations is optional. Proprietary EVSE systems capable of serving only specific vehicle brands are permitted where otherwise allowed but may not be used to meet the minimum EV parking space requirements of Section 6.4.10.
4. The main electrical switchgear shall be installed with sufficient space and capacity to support 10% of spaces whether EV Installed or EV Ready at 208/240V and 40A per space. In an EV Ready or EV Capable Space, the circuit shall terminate in a suitable termination point such as a receptacle, junction box, or an EVSE, and be located in close proximity to the proposed location of the EV parking spaces.
5. EV Load Management Systems are permitted with shared or publicly accessible Level 2 EVSE, provided a minimum of 20 Amperes are delivered to each connected vehicle.
6. EVSE may be wall or pole mounted. EVSE may be shared among two or more spaces.
- ~~6.7.~~ Signage and parking space paint shall be consistent with applicable standards and shall clearly identify EV Installed Spaces as well as any restrictions regarding users and time limits. Where public or shared access is permitted, rates shall be posted with sufficient size and visibility to be read before entering the parking space. Directional signage leading to EV charging spaces is permitted in addition to any other directional signage.
- ~~7.8.~~ Applicants may request a waiver or reduction of electric vehicle parking requirements from the Planning and Zoning Commission during site plan approval based specific site conditions or anticipated need over 10 year period.
- ~~8.9.~~ Location and safety considerations:
  - a. The EVSEs shall be located in desirable and convenient parking locations that will serve as an incentive for the use of electric vehicles. Placement may consider separate needs of customer and employee parking areas. Appropriate sharing of parking among EV users, ADA users and others should be considered in allocating spaces.
  - b. Electric vehicle charging stations are not permitted within the Town or State right-of-way except at municipal sites and adjacent to designated on-street parking.
  - c. The installation of an EVSE shall not reduce the vehicle's parking area dimensions below the size and standards required for parking spaces under section 6.4.5. This applies to EV Installed Parking Spaces as well as EV Ready Parking Spaces and EV Capable Parking Spaces.
  - d. Equipment shall be protected by wheel stops or concrete-filled bollards. Curbing may be used in lieu of bollards and wheel stops if the battery charging station is set back a minimum of 24 inches from the face of the curb.
  - e. Equipment mounted on pedestals, lighting posts, bollards, or other devices shall be designed and located so as not to impede pedestrian travel or create injury hazards for pedestrians.
  - f. Cords shall be retractable or have a place to hang the connector and cord sufficiently above the pedestrian surface. Any cords connecting the charger to a vehicle shall be configured so

that they do not cross a driveway, sidewalk, or passenger unloading area.

- g. As established in Section 6.4, enough EV Charging Stations shall meet ADA Handicapped Accessible standards as defined in Paragraph 6.4.4.G Handicapped Parking. In addition to the usual requirements for Handicapped Parking, Accessible EV Charging Stations shall ensure access to equipment and cords. This is illustrated in Figure 11.8A.

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

[Note: We should have graphics experts redraw this figure. The left-most Accessible space is probably not legal in CT. Also, I would like to show some EV spaces with bollards on the lower right side.





December 11, 2020

From: South Windsor Energy Committee

To: South Windsor Planning and Zoning Commission

Cc:

South Windsor Town Council  
South Windsor Economic Development Commission  
South Windsor Board of Education  
South Windsor Public Building Commission

Subject: Recommended Zoning Regulation Text Changes for Electric Vehicle Supply Equipment

With this letter, the South Windsor Energy Committee forwards to the PZC recommended text changes to the South Windsor Zoning Regulations. These changes are intended to accommodate and promote the ever-increasing adoption of electric vehicles (EVs) in our community.

Attachment 1 explains the proposed regulations and discusses technical and policy concepts for the benefit of readers who may not be familiar with electric vehicle charging.

Attachment 2 provides the proposed text changes to the South Windsor Zoning Regulations.

Thank you for your consideration,

Stephen Wagner  
Chair, South Windsor Energy Committee

## **Attachment 1**

### **Electric Vehicle Charging Concepts and Recommendations**

#### **Executive Summary**

This letter forwards recommended text changes to the South Windsor Zoning Regulations. These changes are intended to accommodate and promote the ever-increasing adoption of electric vehicles (EVs) in our community.

The Energy Committee recognizes that EV charging involves numerous technical and policy details that need further explanation. Hence this letter discusses these items and is copied to both the Town Council, Economic Development Commission, Board of Education, and Public Building Commission.

The South Windsor Energy Committee delegated research and drafting of this proposal to the following subcommittee and approved its transmittal to the PZC on 12/11/2020.

Stephen Wagner, Energy Committee Chair and PZC Commissioner  
Hank Cullinane, Energy Committee  
Steve Lewis, Sierra Club

While the number of EVs on the road at this time, this is expected to increase dramatically over the next few years.

- As of June 30, 2020, there are 12,624 EVs registered in Connecticut. Of these, 5645 were registered in the 18 months ending June 30.
- In support of the state's ambitious climate goals, the Department of Energy and Environmental Protection (DEEP) targets 125,000 to 150,000 EVs on the road by 2025 and 500,000 by 2030.

Achieving these goals as well as promoting and encouraging EV purchases requires a significant increase in EV charging stations (referred to as EV Supply Equipment or EVSE). Zoning regulations can play a role by ensuring that EV charging is a permitted use and by requiring a certain number EVSE locations in various parking lots for new construction or major renovation.

Regulations should recognize that demand for EV charging is currently small but will grow dramatically over time by initially requiring sufficient wired parking spaces for the long term while requiring actual charging equipment needed for the near term. Wiring is significantly less expensive if done before parking lots are paved and hence would reduce the cost of providing the equipment when demand is larger.

Most EV charging will take place at the owners' homes or workplaces. To support this, DEEP and other sources recommend for new construction and substantial renovation:

- In single-family homes, the garage is the obvious location. Builders should install a circuit sized for a dryer outlet (known as EV Ready Level 2) to minimize the cost of the owner's eventual installation of a charger.
- For multi-unit housing developments, builders should provide EV Ready Level 2 circuits in all garages and 10% of outdoor parking spaces. Of these, 3% of outdoor parking should have EVSE installed. Note that the Energy Committee looked carefully at the various uses in the zoning regulations and, in some cases, recommends less than the 10% number.
- Recognizing that existing multi-unit housing developments and homes are not wired for EV charging, workplace charging will be important for many residents to be comfortable buying an EV. Builders should provide EV Ready Level 2 circuits in 10% of office parking spaces and 10% of other commercial, industrial and school employee spaces. Of these, 3% of parking should have EVSE installed.
- Note that most retail parking supports customers who, except in restaurants, generally spend insufficient time to benefit from an EV charging service. On the other hand, employees could benefit from the service.
- As with other parking, a certain number of EV charging spaces will need to be ADA van accessible, with wheelchair access to the equipment itself

There are numerous ways to charge users for the service working through equipment providers. Thus, the cost of electricity and equipment maintenance does not need to be a burden to a facility owner or lessees.

Large destination EV charging facilities are scattered along major corridors and should be permitted in South Windsor.

## Need for Electric Vehicle Service Equipment

Enacted in 2008, Connecticut's Global Warming Solutions Act (GWSA) requires the state to achieve economy wide greenhouse gas emissions (GHG) emission reductions of at least 10 percent below 1990 levels by 2020, and 80 percent below 2001 levels by 2050. In 2018, the GWSA was amended by Section 7 of Public Act 18-82, An Act Concerning Climate Change Planning and Resiliency, to include a mid-term GHG reduction target of 45 percent below 2001 levels by 2030. (References 2 and 3)

It is worthwhile to see the current situation. As required under state law, DMV updates on its website every six months with the total number of electric vehicles registered in the state of Connecticut, including the total number registered in the state each year. As of July 1, 2020, there were (Reference 1):

- Total number registered: 12,624
- Total number registered from 1/1/20 to 6/30/20: 1,525
- Total number registered in 2019: 4,120
- Total number registered from 1/1/19 to 6/30/19: 2,046
- Total number registered from 7/1/19 to 12/31/19: 2,074

From a zoning perspective it is important to remember that buildings have a roughly 50-year lifetime before major renovation. Thus, zoning regulations should reflect anticipated conditions relatively far into the future. This is the perspective of the proposed changes to parking requirements to accommodate EV charging for new and renovated buildings. However, to avoid discouraging renovation of old, possibly abandoned buildings, the proposed regulations require EV charging for addition of 10,000 square feet of floor area or 50 additional parking spaces.

The State of Connecticut has established ambitious goals for carbon emissions as part of its role in addressing climate change (Reference 2). A key part of these goals is reducing and ultimately eliminating carbon emissions from the transportation sector as well as from off-road equipment used in construction, farming, landscaping, and other activities. These goals include:

- Achieving 125,000 to 150,000 EVs on the road by 2025, as one of several states signing onto the Zero-Emission Vehicle Memorandum of Understanding (ZEV MOU, Reference 3)
- Ramping up to 22% of new vehicle sales from 2020 to 2025
- Having 500,000 EVs on the road by 2030 to meet the state's greenhouse gas (GHG) emissions target
- Scaling electric vehicle supply equipment (EVSE) deployment to reduce range anxiety and encourage higher EV penetration rates as consumers become more confident in charging accessibility. For the vehicle owner, this means that

refueling for an EV should be as reliable and convenient as for an Internal Combustion Engine (gas, diesel) vehicle.

- While accounting for Tesla's proprietary EVSE installations, ensuring sufficient brand-agnostic equipment available to the general public. Tesla's equipment, such as the installation near Artisanal Burger Company, provides fast charging to Tesla models only.

## Role of Zoning

Because EV charging requires more time than internal combustion engine (ICE) refueling, charging facilities will be widely distributed to allow vehicle operators to engage in other nearby activities such as home life, shopping, dining, or recreation while their EVs are being charged. Hence, permitting and requiring these facilities will affect virtually all zones of the town.

Municipalities and the state can require and control installation of EVSE by three mechanisms:

- Building codes: In theory, building codes, if adopted by the state, can require EVSE in all new construction and major renovations. However, the changes in the proposed 2018 International Energy Conservation Code have been challenged on procedural grounds and withdrawn. Hence, building codes are not likely to be an effective mechanism for several years.
- Zoning: Planning and Zoning Commission site plan regulations:
  - Specifically, parking regulations can impose requirements for EVSE on Commercial, Industrial, Office and Multi-Unit Dwelling sites.
  - PZCs cannot require EVSE or even the necessary wiring and raceways in single family developments since subdivision layout does not affect the interior design of single-family dwellings.
- Town Council action: If the zoning approach is adopted, there are still areas that may require Council action:
  - Adopting an ordinance that new single and two-family houses provide a 40-Ampere, 220-Volt outlet in the garage. (This could be coupled with a requirement that wires from eventual rooftop solar installations can be easily connected to the panel and that panel space be reserved for solar. Depending on the location of the panel, this could require the installation of a spare conduit from the attic to the panel before drywall is installed and space near the panel for the added switching and metering gear.)
  - Requiring new EVSE in single- and two-family homes to have "smart" features that allow utility load management control.
  - Adopting an ordinance that residence associations may not forbid owners from installing EVSE.
  - Requiring the Building Department to use the universal charging permit proposed for statewide use and enter data in a statewide database.

Because parking regulations already exist, zoning is the natural way to implement EVSE requirements for all uses except internal wiring requirements of single- and two-family housing.

### Types of EVSE

There are three categories of EVSE. This will be important when specifying equipment to be required in various types of development:

- AC Level 1: 20-Ampere, 110 to 120-Volt alternating current (AC) charging off a common electrical outlet, such as used for small kitchen appliances at 1.4-1.9 kW. This is extremely slow and is only necessary to serve some of the oldest EVs on the road. Some Level 2 EVSE provides a Level 1 outlet as an alternative to support these vehicles.
- AC Level 2: 208 to 240 Volts AC, typical in capacity to a clothes dryer outlet. These can charge most EVs overnight or during a work shift. They can also top off or extend the mileage on a partly discharged battery in a reasonable time.
- DC Fast Charging (DCFC), also known as Level 3: 208-480 volt direct current (DC) chargers that can fully load a typical EV in about an hour.

More detail about the three levels is provided by the following table from Reference 2, updated with more current data:

Type of EV Charger	Level 1	Level 2	DCFC
<b>Electrical Specifications</b>	110 – 120 Volts AC 12 – 16 Amps 20 Amp Circuit	208/240 Volts AC 32 Amps 40 Amp Circuit	208 – 480 Volts DC 70 – 125 Amps
<b>Rate of Charge</b>	1 kW	3 kW – 19.2 kW	20 kW +
<b>Mileage Range Per Hour of Charging</b>	5	25	250
<b>Estimated Charger Cost</b>	–	\$379 – \$999	\$25,000
<b>Estimated Installation Costs</b>	–	\$1,200 – \$2,000	\$75,000 – \$100,000
<b>Primary Locations</b>	Residential homes (mostly single-unit dwellings)	Residential homes (single- and multi-unit dwellings), workplaces, public chargers, destination charging locations	Highways, interstate transit corridors, destination charging locations

The great majority of installations are likely to be Level 2 equipment. That equipment meets the needs of users who can leave a depleted vehicle for several hours as well as someone who simply needs to add miles to their battery.

On the other hand, customers might be drawn to a restaurant or coffee shop that offers a DCFC service that can fill up their car while they eat or shop, or to a dedicated

charging facility similar to a gas station. Such equipment would also be especially useful to EV owners whose apartment or condo development was built before chargers were required, since they cannot charge their vehicles at home.

### **Permitted Use**

EV Charging should be a permitted use in all zones. While requiring EVSE as an accessory use in commercial, industrial, and multi-unit housing developments, the zoning regulations should also allow public EVSE destination installations as a primary use.

DCFC Charging should be limited to non-residential zones and sites, with some flexibility in the case of rural residential zones by special exception. Special exception requirements allow the PZC to consider the impact on nearby properties, among other considerations.

### **Fleet and Farm Installations**

Vehicle and equipment fleet and farm owners should be permitted to add EVSE infrastructure to their sites with site plan approval in accordance with business needs. Minimum EVSE count should be based on employee (e.g. office) parking requirements.

### **Phased Deployment**

When the PZC requires EVSE in a new development, we also need to consider that the demand for this equipment will be less in the short term but increasing over time. While it would be unfair to require a business to install enough equipment to support the anticipated demand in 2030, a partial installation at the start can significantly reduce the cost of responding to increasing demand in later years. Similarly, restricting too many spaces for EV charging during the early years will unfairly impact drivers who do not need this service.

The industry recognizes three stages of installation and any given site might employ all three:

- EV-Installed Parking Space: Electric Vehicle Supply Equipment or EVSE, either Level 2 or DCFC installed and operational with means to bill electrical usage and other operation costs that is appropriate to the situation.
- EV READY SPACE. A designated parking space with a dedicated branch circuit for EVSE servicing Electric Vehicles at 208/240-Volts at 40-Amperes (Level 2). The circuit should lead to a suitable termination point such as a receptacle, junction box, or an EVSE, and be accessible to the proposed EV parking spaces. (While developers might contemplate DCFC EV Ready spaces, the high cost of such installations is likely to lead to an all (installed) or nothing approach.)



- **EV CAPABLE SPACE.** Electrical panel capacity and breaker space to support a minimum 40-ampere, 208/240-volt branch circuit for each EV parking space, and the installation of raceways (conduits).

### Required Number of EVSE Spaces

DEEP recommends that the state building code require a minimum of 10 percent of required parking spaces in new commercial and multi-unit housing developments be pre-wired for Level 2 EVSE (Reference 2) as provided in the following table. Reference 2 seems to indicate that further legislation may be required for individual municipalities to impose these requirements as stretch goals in local building codes. However, zoning commissions can accomplish many of these objectives without further legislation.

*Table 6: EV parking space pre-wiring requirements for new construction*

Total Number of Parking Spaces	Number of Required Level 2 EV-Ready or Charging Spaces
1-9	1
10-25	2
26-50	4
51-75	6
76-100	9
101-150	12
151-200	17
201 and over	10 percent of total*

\* The number of spaces has been rounded up to the nearest whole number.

Of these EV Ready Spaces, the following fraction should be required to have EVSE installed (rounded up to the nearest whole number):

Calendar year of site plan application	Fraction of EV Ready Spaces with installed EVSE
2020-2023	3% of parking
2024-2027	7% of parking
2028 and beyond	10% of parking

Note that the DEEP's Reference 2 does not suggest EV Capable Spaces. It focuses only on EV Ready Spaces with some of them installed. EV Capable Spaces could be an acceptable alternative when the PZC agrees to waive the full requirements for a given application.

Recognizing the ever-increasing capacity of EV batteries, installed EVSE should be sized at the high end of the capacity range for their level.

Without further incentives, the program relies on market forces to lead to the conversion of remaining EV Ready spaces to EV Installed spaces over time.

## **Tracking EV Penetration in South Windsor**

A universal charging permit form proposed for statewide use is designed the support tracking of EVSE down to the municipal level. The Building Department should adopt this form.

## **Grid Capacity and the Eversource EV Make Ready Program**

Massive penetration of EV charging in both residential and business areas has the potential to exceed the capacity of the local grid to supply the necessary power during peak periods. This can be mitigated if the utility is given the ability to remotely manage load from these facilities.

Eversource is developing an “Electric Vehicle Make Ready” program, to address this need as well as provide incentives for existing multi-unit housing developments to install EVSE. This program is already in place in Massachusetts.

## **Load Sharing and Time of Day**

Load sharing is a technical strategy that allows a site’s electrical capacity to be less than the sum of the individual charging station capacities. If multiple vehicles being charged demand more than the available capacity, individual stations reduce their output. This strategy reduces construction costs and demand related charges from the utility. As a practical matter, this approach is unlikely to have a negative impact on users because vehicle battery size and state of charge will vary. This should be allowed within limits, such as minimum power level to each vehicle. Load sharing should be limited to office and multi-unit housing locations where users can more easily live with the resulting delays.

Time of day controls are used to schedule charging when other demands on the grid are low. These can also be coupled to time of day electric rates. While not presently available for single family dwellings, time of day rates are likely to be available in the future. Time of day controls should be limited to housing and facilities that are occupied on a 24-hour basis.

Residents of multi-unit housing should be allowed to optionally defer charging to take advantage of time of day rates.

## **Existing Buildings (Alterations)**

To bring facilities designed and built prior to the changes in EVSE zoning into conformance with the state’s objectives for EV deployment, opportunities must be found to add this equipment. Buildings typically have a 50-year lifespan. They should be retrofitted with EVSE during additions, major building alterations, surface parking and electrical system upgrades.

This could be tied to the concept of Level 3 Alterations: “where the work area exceeds 50 percent of the original building area or more than 10 parking spaces are substantially modified.” (definition taken from Denver EV building code proposal). However, there is a concern that imposing EV charging on a project that merely revamps the interior, as might happen with a new occupant, could discourage bringing idle buildings back into service. The proposed regulations limit the requirement to 10,000 square foot additions to floor area or 50 new parking spaces.

### **Protection of Equipment**

Charging equipment requires protection from vehicle impact. This can be in the form of curbs, concrete-filled bollards, or wheel stops. Additionally, EVSE installed on sidewalk areas must not impede use of the sidewalk and may therefore require increased sidewalk width. These accommodations may increase the area required for a given parking space beyond that needed for the vehicle and may also impact impervious coverage. For that reason, the commission may wish to waive required parking spaces consistent with the lost parking area. A ratio of 1 waived space for every 5 EV Ready Spaces is suggested.

### **Signage and Posted Pricing**

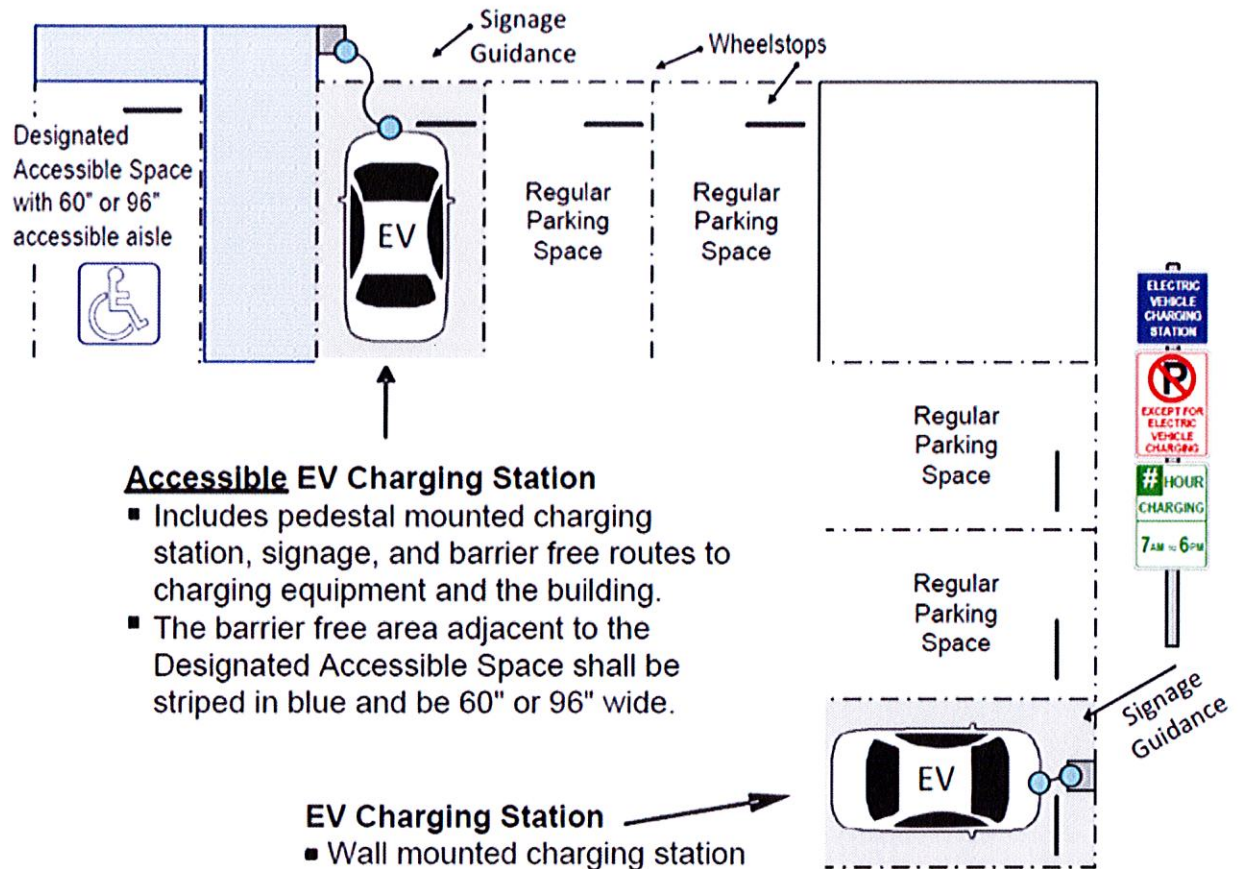
Signs limiting use of each installed EVSE parking space to EV charging, any time limits, applicable ADA restrictions, and any membership requirements (e.g. EVSE service provider, resident, gym or store membership) should be required. In addition, in the vicinity of a set of EVSE spaces offered to the public, a digital pricing display, visible before entering the parking space, should be required.

Directional signage leading to public EVSE spaces should be permitted in addition to other signage.

### **ADA Spaces**

There are currently no federal requirements for ADA compliant EV charging spaces. Nonetheless, it is important not to deny EV charging services to community members who meet ADA standards.

In Reference 5, the U.S. Department of Energy provides guidance for the design of ADA compliant EVSE parking spaces. The following figure illustrates some of the concepts discussed therein:



The following table from the 2019 California Building Code (Reference 6) illustrates how that state has set the minimum number of accessible EVSE spaces:

TABLE 11B-228.3.2.1  
ELECTRIC VEHICLE CHARGING STATIONS FOR PUBLIC USE AND COMMON USE

TOTAL NUMBER OF EVCS AT A FACILITY <sup>1</sup>	MINIMUM NUMBER (by type) OF EVCS REQUIRED TO COMPLY WITH SECTION 11B-812 <sup>1</sup>		
	Van Accessible	Standard Accessible	Ambulatory
1 to 4	1	0	0
5 to 25	1	1	0
26 to 50	1	1	1
51 to 75	1	2	2
76 to 100	1	3	3
101 and over	1, plus 1 for each 300, or fraction thereof, over 100	3, plus 1 for each 60, or fraction thereof, over 100	3, plus 1 for each 50, or fraction thereof, over 100

1. Where an EV charger can simultaneously charge more than one vehicle, the number of EVCS provided shall be considered equivalent to the number of electric vehicles that can be simultaneously charged.

The proposed zoning regulations incorporate a simplified version of this table. When there are a small number of EVSE spaces (say 1 to 4), reserving one for ADA

compliance may unfairly restrict access by non-ADA users. In these cases, it is desirable to require a design consistent with van accessible ADA requirements but not restricting the use of the space, assuming the required number of ADA parking spaces are provided elsewhere at the location.

### **Billing for EVSE use**

While billing is not the purview of the PZC, commissioners should be aware that there are ways to pay for the installation, maintenance and operation of public and shared EVSE equipment that minimize or eliminate the burden on facility owners. Examples include:

- Charging users by credit card, membership card, key fob, occupant ID card or similar mechanism. A third party collecting data at the equipment can rely on a common utility account that serves multiple parking spaces.
- In multi-unit housing, the charges can be directed onto the occupant's electric bill. If a garage is physically adjacent to the dwelling, this would be accomplished by wiring through the dwelling's panel.
- Ownership of the equipment by a third party who charges users based on electric usage takes the bookkeeping burden off the site owner. The third party's profit incentive and market perception would drive installation of equipment above the minimums, provided EV Ready Spaces are available.
- In condominiums where a garage is attached to the unit, the electric usage can come directly off the owner's meter. The owner would be required to rent or purchase the charging equipment.
- Facility owners could operate the charging facilities as profit centers. This could provide an additional revenue stream to, say, a restaurant that provides Level 2 or DCFC EVSE.
- Regulations could require credit card access in public situations, though further research is required to ensure that such a regulation would eliminate too many competitive equipment suppliers.

### **References:**

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2. "Electric Vehicle Roadmap for Connecticut, A Policy Framework to Accelerate Electric Vehicle Adoption," Connecticut Department of Energy and Environmental Protection, 2020.
3. State Zero-Emission Vehicle Programs—Memorandum of Understanding. NESCAUM. Signed October 24, 2013. Retrieved March 3, 2020 from <https://www.nescaum.org/documents/zev-mou-10-governors-signed-20191120.pdf/>.
4. Conn. Gen. Stat. § 22a-200a.



5. "ADA Requirements for Workplace Charging Installation: Americans with Disabilities Act Requirements to Consider for Workplace Charging Installation", U.S. Department of Energy, WPCC\_complyingwithADArequirements\_1114.pdf, 2014.
6. 2019 California Building Code, Title 24, Part 2, Volume 1, Chapter 11B.  
<https://codes.iccsafe.org/content/CABCV12019/chapter-11b-accessibility-to-public-buildings-public-accommodations-commercial-buildings-and-public-housing>

**Abbreviations Used in This and Other Documents**

AC – alternating current  
 ACT – Advanced Clean Trucks Regulations  
 ADA – Americans with Disabilities Act  
 AFLEET – Alternative Fuel Life-Cycle Environmental and Economic Transportation  
 ATV – alternative technology vehicle  
 BAU – business as usual  
 BESH – Basic Electric Service Hourly  
 BEV – battery electric vehicle  
 BNEF – Bloomberg New Energy Finance  
 CAA – Clean Air Act  
 CAFE – Corporate Average Fuel Economy  
 CALGreen – California Green Building Standards Code  
 CARA – Connecticut Automotive Retailers Association  
 CARB – California Air Resources Board  
 CHEAPR – Connecticut Hydrogen and Electric Automobile Purchase Rebate  
 CO<sub>2</sub> – carbon dioxide  
 C-PACE – Commercial Property Assessed Clean Energy  
 CSE – Center for Sustainable Energy  
 CT – Connecticut  
 CVRP – California Clean Vehicle Rebate Project  
 DAS – Connecticut Department of Administrative Services  
 DCDE – Drive Change. Drive Electric.  
 DCFC – direct current fast charger/charging  
 DEEP – Connecticut Department of Energy and Environmental Protection  
 DER – distributed energy resource  
 DMV – Connecticut Department of Motor Vehicles  
 DOE – U.S. Department of Energy  
 DOT – Connecticut Department of Transportation  
 EDC – electric distribution company  
 EPA – U.S. Environmental Protection Agency  
 EV – electric vehicle  
 EVSE – electric vehicle supply equipment  
 FCEV – fuel cell electric vehicle  
 FHWA – Federal Highway Administration  
 FTA – Federal Transit Administration  
 GBTA – Greater Bridgeport Transit Authority  
 GC3 – Governor’s Council on Climate Change  
 GHG – greenhouse gas  
 GIS – geographic information system  
 GMP – Green Mountain Power  
 GPS – global positioning system  
 GREET – Greenhouse gases, Regulation Emissions, and Energy use in Transportation  
 GWSA – Global Warming Solutions Act

HOV – high occupancy vehicle  
 ICC – International Code Council  
 ICE – internal combustion engine  
 IECC – International Energy Conservation Code  
 kWh – kilowatt hour  
 LED – light-emitting diode  
 LMI – low- and moderate-income  
 Low-No – Low- or No-Emission Grant program  
 MOR-EV – Massachusetts Offers Rebates for EVs  
 MSRP – manufacturer suggested retail price  
 MUD – multi-unit dwelling  
 MY – model year  
 NAAQS – National Ambient Air Quality Standards  
 NDEW – National Drive Electric Week  
 NESCAUM – Northeast States for Coordinated Air Use Management  
 NHEC – New Hampshire Electric Co-op  
 NHTSA – National Highway Traffic Safety Administration  
 NO<sub>x</sub> – nitrogen oxides  
 NREL – National Renewable Energy Laboratory  
 NYSERDA – New York State Energy Research and Development Authority  
 O&M – operation and maintenance  
 OCPI – Open Charge Point Interface  
 OCPP – Open Charge Point Protocol  
 OEM – original equipment manufacturer  
 Open ADR – Open Automated Demand Response  
 OSCP – Open Smart Charge Protocol  
 PG&E – Pacific Gas and Electric Company  
 PHEV – plug-in hybrid electric vehicle  
 PM-2.5 – particulate matter 2.5  
 PUC – public utility commission  
 PURA – Public Utilities Regulatory Authority  
 RMI – Rocky Mountain Institute  
 SDG&E – San Diego Gas and Electric Company  
 SIR – Savings-to-investment ratio  
 SO<sub>2</sub> – sulfur dioxide  
 SUV – sport utility vehicle  
 TOD – transit-oriented development  
 TCI – Transportation and Climate Initiative  
 TOU – time-of-use  
 UC Davis – University of California Davis  
 V2B – vehicle-to-building  
 V2G – vehicle-to-grid  
 VIN – vehicle identification number  
 VOC – volatile organic compound  
 VMT – vehicle miles traveled  
 VW – Volkswagen  
 ZEV – zero emission vehicle  
 ZEV MOU – Zero-Emission Vehicle Memorandum of Understanding



**Attachment 2**  
**Proposed Text Changes to South Windsor Zoning Regulations**