

Supporting EV Adoption by Reducing Range Anxiety Through Scaling EV Zoning Regulations Adoption

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INTRODUCTION

Widespread research has revealed that range anxiety is a top reason people avoid purchasing electric vehicles. To address that market barrier to widespread EV deployment, encouraging EV friendly zoning regulations make inevitable, the necessary infrastructure development, and increase the percentage of EVSE. EV zoning regulations reduce obstacles to EV scalability and are a powerful tool for municipalities seeking to enable EV adoption.

The challenge is that there is insufficient charging infrastructure to sustain the level of electric vehicles that are forecasted. Even in the unlikely event that all EV owners could charge at home, there is a significant need for public and destination charging. According to the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy's report, National Plug-In Electric Vehicle Infrastructure Analysis:

zoning ordinances, and permitting requirements enable state and municipal governments to set a foundation that supports EVSE deployment in new construction and parking facilities.

Cities are expected to have the greatest charging infrastructure requirements under both the coverage and demand assessments. About 8,000 DCFC stations would be required to provide a minimum level of coverage nationwide. Such a network would provide consumer support for long-distance, intra-city travel, serve as a safety net for emergency charging situations, be installed in an equitable manner, and dampen range anxiety concerns.

It is critical to address EV charging infrastructure at every level. In response to this need, our organization, Live Green Network, developed the **EV Zoning Regulations Toolkit** which includes a Blueprint and a virtual 9-month Boot Camp, as practical implementation tools, intended to provide a process driven, actionable, pathway to EV zoning regulations implementation. The Blueprint includes action items, tools, resources, information on parking ordinances, provisions of the Americans with Disabilities Act (ADA) accessible standards, signage, maintenance, EV policies, examples of EV zoning regulations, along with helpful links to additional resources. The EV Zoning Regulations Boot Camp is an interactive, virtual 9-month program that guides participants through the entire EV zoning regulations process. The Boot Camp also encourages members of the cohort to interact between sessions and to collaborate with each other on solutions.

We have implemented an EV Zoning Regulations Toolkit Pilot Program in Fairfield County, Connecticut which comprises 23 municipalities, including two environmental

justice communities, as defined by the Connecticut Department of Energy and Environmental Protection as “distressed communities.” The pilot program is intended for community leaders, municipal staff, planning and zoning staff, and planning and zoning commissioners. Stage I of the pilot program has captured 100% participation from Fairfield County, CT municipalities.

METHHODOLOGY

When developing the Municipal EV Readiness Toolkit, our team used a blended approach of gathering information from municipalities that have already passed EV Zoning regulations, interviews with subject matter experts, best practices, as well as using both our experience in the field, along with previous, relevant program work. Practical information gathering and research served the purpose of identifying a proven EV zoning regulations process that could be easily understood and followed by planning and zoning staff and commissioners. Our methodology addressed both the technical aspects of EV zoning regulations as well as the process of EV zoning regulation implementation. As a part of our pilot program, we continuously track all participant engagement. We monitor the progress that all municipalities demonstrate towards EV zoning regulation implementation.

EV ZONING REGULATIONS TOOLKIT OBJECTIVES:

- 1) To provide step-by-step communication and coaching on EVSE zoning regulations required to facilitate rapid deployment of EVSE infrastructure in support of rapid adoption of EV's.
- 2) To provide model zoning regulations consistent with Connecticut state regulations, to cities and towns statewide.
- 3) To increase the pool of experienced advisors, partners and EVSE champions available to rapidly spread adoption of updated zoning regulations statewide.
- 4) To engage policy advocates focused on equitable opportunities for access to electrified transportation with concomitant improvements in air quality, specifically in underserved and minority neighborhoods.
- 5) To increase understanding of how urban densities afford opportunities for multi-modal electrification of transportation.
- 6.) To ensure EVSE is installed in an equitable manner.

BLUEPRINT- SUMMARY OF MODULE HIGHLIGHTS

Module 1 The Impact of Zoning Regulations and the CT PURA Decision

The State of Connecticut Public Utilities Regulatory Authority (CT PURA) is working on their high priority Equitable Modern Grid initiative with multiple components. As part of this initiative, in July 2021, CT PURA issued a final decision that establishes a nine-year program to support the installation of electric vehicle charging infrastructure across the state, focusing on equity and inclusion.

To satisfy the Zero-Emission Vehicle Memorandum of Understanding, Connecticut has committed to adopting 125,000 EVs on the road by 2025. To foster this pace of EV adoption, towns and cities must update their zoning regulations to allow siting EVSE in appropriately identified places.

We note three distinct challenges to be addressed in considering distribution of EVSE infrastructure:

1. We need to allocate clean energy vehicle resources in areas currently plagued disproportionately with excess air pollutants from vehicle exhaust. This is a public health equity mandate we need to take seriously in Connecticut. Because we are creating a new system of fueling transportation, we have an opportunity to redress past inequities by addressing concerns from distressed communities at the outset of creating this process.
2. As importantly, we need to understand how “driving electric” differs behaviorally from “driving ICE.” Siting considerations will need to address EV drivers’ and operators’ behavioral needs in response to the difference between EV and ICE technologies and infrastructure.
3. Municipalities need to have clear regulations for siting, using, and supporting delivery of EV Service infrastructure within their public service boundaries, in full accordance with ADA accessibility regulations; in alignment with traffic and parking enforcement practices and imperatives; and with a clear eye towards equitable access to this infrastructure in all neighborhoods.

Module 2 Building the EV Zoning Regulations Core Team

People, and the passion they bring to this exciting municipal development, will ensure that EV zoning regulations are in place for the 21st Century! One way to look at your team is to consider individuals with clear interests in EV infrastructure that cover all three “sectors” of community influence:

PUBLIC SECTOR: local government concern is with regulations and policies adopted and enforcement of those:

- Elected/appointed officials as above: Mayor/First Selectmen/Senior Staff, Planning/Zoning Department; Planning/Zoning Commission; Sustainability/Energy Taskforce.
- Also consider Traffic/Parking Authority (signage and parking enforcement), Energy Commission (design engineering and advocacy); Conservation/Recreation Land Use Commission (advocacy); Public Works (maintenance); Human Rights Commission (equitable access); and more. Think about how your town government is organized around various functions and interests.

PRIVATE SECTOR: concern with infrastructure and incentives for new and ongoing business operations.

- Note: Engage your Economic Development Director and Equity Director in this part of the conversation.
- Businesses
 - established businesses with large parking areas or dependence on adequate public on-street or off-street parking, including employee and customer parking access.
 - developers interested in additional commercial, industrial, or multi-unit dwelling complexes on available open spaces.
- Business Organizations—Chamber of Commerce, Rotary Club, and others.

CIVIC SECTOR: concern with gaps in attention to important consumer/citizen interests

- Neighborhood groups; land conservation and environmental groups; climate change mitigation interest groups; underserved communities interest groups.
- Non-profit sector may include local professional associations; civic associations; land trusts; houses of worship with community action focus; social justice groups focused on transportation equity.

Key Team Functions:

- Leadership: convene meetings; assign tasks; track overall progress; report out
- Regulations review: key professional expertise required
- Outreach: public meetings and public inputs to be organized and managed
- Writing/Drafting: summarizing, collating, systematizing information gathered
- Advocating: active, outspoken support at critical points in process

Module 3 Reviewing Existing EV Zoning Regulations in CT and Analyzing Current Zoning Regulations to Identify EV Zoning Opportunities

- Look at sample Connecticut municipal zoning regulations – Hartford, Middletown, South Windsor. These regulations align with CT state requirements and the complete regulations are included in the Appendix.
 - Investigate how your municipal needs are similar or how they are different.
 - Notice what is standard, such as dimensions of parking spaces to include EVSE equipment and safety barrier, and signage to reserve spaces for EV's only.
 - Notice what else seems beneficial for your town as modeled by other towns: Requirements for spaces in new developments; EVSE installations on municipal properties.
 - Notice the variety of approaches—a short policy statement, a few paragraphs appended to existing regulations, or a deep-dive modification throughout the regulations.
- Make a list of the scope, priorities and needs for your community based on the investigations above. What format will create success in your community?
 - A simple policy to get started?
 - A short addendum to zoning regulations?
 - A deep dive into the whole array of zoning regulations?
 - Something else?
- Now review your existing zoning regulations to see how the scope selected above is required to be moved consistently through your governing process to support the EVSE infrastructure development for your town.
- Create a list of opportunities to share with elected and appointed officials, with department heads impacted by proposed changes, and with interest groups in the business and civic community.
- Following, please see Hartford, Middletown, and South Windsor EV Zoning Regulation's Case Studies. See Appendices for complete EV Zoning Regulations for Hartford, Middletown, and South Windsor and for a draft of West Haven's EV administrative policy.

Module 4 How to Develop and Execute Your Public Outreach Plan, Gathering Feedback and Collaborating with Team Members, Town Leaders, and Business Leaders

PLAN

When you assembled your team with an eye to diversity of representation across sectors and organizations, you created your first step of the outreach plan. Each team member has their network of associates OR an idea of who has such a network and can be asked to use it for this outreach purpose.

Now review with all team members their lead contacts for:

- 1) Productive input to the list of ideas you have generated and leadership support for moving the process forward.
- 2) Identifying possible sources of objection, clarifying those objections, and discerning how best to respond and incorporate OR simply counter with other voices of support.
- 3) Prospective “converts” willing to participate at this stage, yet did not want to join the team at the beginning of the process. Some people want to join the project once it is taking off—welcome them!

CREATE TIMELINE

Be sure you understand the process for getting an item on the P & Z Agenda.

ALLOCATE TASKS

Module 5 Consulting Town Leaders, and Gathering Feedback from Business, Community, and Organizational Leaders

Review the notes you created in Module 2 from the process of reviewing current zoning regulations and analyzing your town’s regulations to identify opportunities.

First round feedback:

- Town Planner
- Planning and Zoning Commissioners
- Economic Development Director and Economic Development Commission
- Council of Governments (COG) official(s)
- Important: collect names for additional people to contact from each above source of input

Identify the “scope of action” your team thinks works best for achieving success at this time. Success may look like adding minor EV regulation updates, overhauling the current regulations, and drafting new ones that integrate EV zoning into every aspect of the municipality or something in between. Whatever EV Zoning Regulations actions that are implemented will be a victory.

Second round feedback:

- Civic association leaders
- Social equity group leaders
- EV driver/user group leaders

In each conversation with a local leader, identify how they will help you convene the meeting to present a proposed draft to members of the public. Share your proposed timeline with them so they understand clearly what you are asking for. Use your time

allocation for this process effectively, then meet as team to aggregate feedback. Summarize sources of objection.

Evaluate as a team:

- specific content suggestions from both rounds of feedback.
- adequacy of “scope of action” decision, and any need to reconsider.
- specific pieces of feedback that must be added to the “list of opportunities” for regulation

Module 6 Developing the EV Zoning Regulations Draft

You have now collected a list of ideas drawn from:

- existing updated regulations from other CT towns
- an analysis of opportunities in your regulations
- ideas from rounds of feedback

You also have these parameters:

- “scope of action” to guide your drafting process
- deadline for making your presentation to the public
- date for making your presentation to P & Z Commission with support from Planner

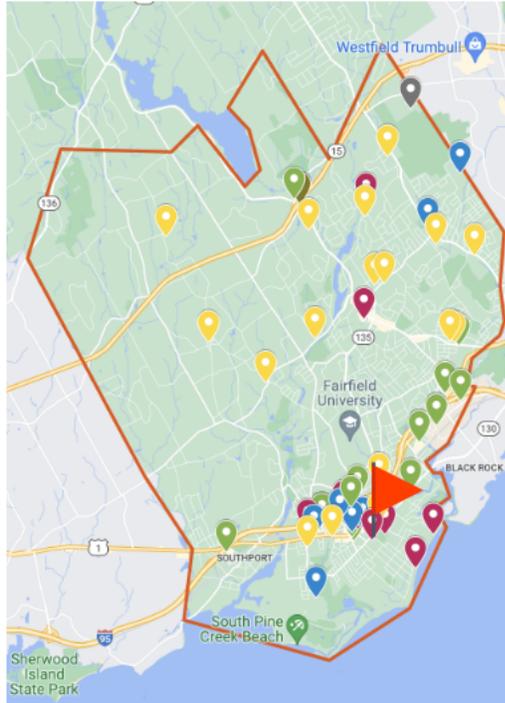
You want to assure inclusion of priority items in collaboration with Traffic and Parking Authority, Public Works and other enforcing authorities. These priorities include:

- Specify number of spaces designed and located to comply with Americans with Disabilities Act (ADA), in addition to compliance with any specific state codes; may specify circumstances in which the space must adhere to these standards.
- Specify signage design and messaging related to restricted parking for EV charging only, any time limits on parking and limits for unique vehicle remaining in the space for charging (others need to use the EVSE); monetary charges for EVSE connectivity and any overtime charges; and specify consequences of non-compliance (towing and/or ticketing) in cases of EV overtime and/or non-EV parking.
- Specify maintenance requirements and responsibility for routine maintenance; also specify legal timeframe for service restoration with specific requirements by zone or type of location of EVSE, along with consequences for failure to maintain equipment or restore service within legal timeframe.

Create your draft

Borrow from regulations already in place in Connecticut—you do not need to start from scratch! When you have questions, talk with those friendly sources in Connecticut municipalities with whom you have a natural alliance in this process.

Electric Vehicle Supply Equipment (EVSE) Planning Map Fairfield, CT



Legend

- Attractions
- Colleges
- Existing Charging Stations
- Government
- Multi-Unit Dwellings
- Park and Ride
- Place of Worship
- Transportation

Fleet Inventory

Total number of light duty passenger electric vehicles
729

Propane municipal vehicles

1

Electric-police vehicles

0

Electric School Buses

0

Hybrid municipal vehicles

0

Hybrid-police vehicles

1

Electric Shuttles

0



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We have provided EVSE Planning Maps to all municipalities in Fairfield County to help identify their biggest EVSE needs and to ensure the equity of installations.

Module 7 Sharing Draft EV Zoning Regulations with Public

The public meeting is an opportunity to befriend and enroll public voices of support for this change to town infrastructure and town zoning regulations. Be sure you are prepared for public interest issues related to infrastructure:

- 1) Equity of access for historically under-served communities.
- 2) Provision for ADA accessibility.
- 3) Parking requirements, locations, enforcement possibilities (though not part of zoning, these issues are likely to come up!)
- 4) Make the clear case for public need to develop EVSE infrastructure—including economic development; cleaner air from fewer vehicular pollutants; access to cost-savings from EV use for households, businesses, and government; competitive appeal to travelers and shoppers—whatever is crucial to align charging stations with your town's values and the way your town prides itself on being uniquely attractive!

Your well-facilitated public meeting will result in:

- clarity about public support and public resistance
- identification of supporters you might recruit to give testimony to P & Z Commission,
as needed
- detailed fine-tuning you may need to do before presenting to the P & Z Commission

Regardless of how the public meeting goes, hold fast to your plan to present to the P & Z Commission if you have a date. Getting this on their agenda for consideration is a major accomplishment for your team!

Module 8 Presenting Proposed EV Zoning Regulations to the Zoning Commission

You have built into your timeline this date. You have a lot of information about supporters, resisters, leadership voices, and more. Your Town Planner will need to “have your back” for this presentation, so review what you have garnered from all sources, share that with Planner, and find out how they want team members to be involved.

- How to distribute the draft regulations to Commissioners and to the public in advance?
- How to brief members of the public who want to give testimony if needed?
- How to listen to P&Z Commissioners for objections your team may need to answer if the resolution fails?

Have a draft press release available to:

- 1) Laud the Commission lavishly for passing the regulations, OR
- 2) Laud the Commission lavishly for providing great insights into changes and agreeing to take this up again at their next meeting.
 - 3G Shutdown
 - Network Connections

Guidelines on EVSE size and advertising options

1. EVSE Hardware manufacturers vary in technological neutrality. Please be sure to make specific inquiries into software options that meet your installation needs as you interview contractors for EVSE hardware installations.
2. Aesthetic considerations should be included as desired. Design variability in EVSE hardware allows for selection in keeping with your community needs and may vary by location.
3. Some EVSE/Charging Station producers prefer to offset hosts' costs with advertising displayed on the hardware as it sits in the parking area. Zoning

regulations may need to address allowances/prohibitions on advertising in some EVSE/charging station locations.

Module 9 Managing Setbacks and Obstacles

P & Z Commissioners may not all agree that these regulatory changes OR the scope you have proposed are right for your municipality.

- Regulations may not be approved the first time they are presented to the P & Z Commission.
- Be prepared to view the presentation process as another stage of feedback.

Remember:

- You have identified your strong bases of support and your team is the leadership group they look to for the final step.
- Persevere in the knowledge that your team is on the right side of history for your municipality.
- Work with the Planner and the friendly members of P&Z Commission to address required changes.
- Mark your calendar with the date for the P&Z Commission meeting to which this resolution has been “continued”.

RESULTS

Every municipality that was targeted for the pilot program participated in some way. Although the speed and ability to adopt EV zoning regulations varies widely, and is in process, we are demonstrating that working with 23 municipalities at once, while creating a cohort that supports each other, was an outstanding method to scale EV zoning regulations. Our results are encouraging.

CONCLUSION

By following the direction provided in the Municipal EV Zoning Regulations Blueprint, municipalities will be able to adopt and implement EV zoning regulations which will inevitably increase the percentage of charging station parking spaces.

The Municipal EV Zoning Regulations Blueprint is part of Live Green/CT Southwestern Area Clean Cities Coalition’s Municipal EV Readiness Toolkit, which is a process-oriented resource, meant for those who are committed to municipal EV readiness implementation. The EV Zoning Regulations Blueprint is intended to solve the problem of not knowing the practical steps and knowledge needed to implement EV zoning regulations, and to provide a clear path of action for those who want to see equitable EV zoning regulations adopted in their municipality. Planning and zoning boards and commissions that go through the process of implementing EV zoning regulations play a critical role in supporting EV readiness in their municipality. And their leadership is invaluable.

The EV Zoning Regulations 9 – Month Boot Camp, is an essential component to the Toolkit, as bringing people together in a learning community, that collaborates over time, provides the necessary support, encouragement, and energy that is essential to scale EV zoning regulations implementation.