

Zoning for Climate Resilience

Municipal Land Use Commission Training

Offered by the Connecticut Institute for Resilience and
Climate Adaptation (CIRCA)



State Training Requirements

In 2021 the state adopted *Public Act 21-29*, now Conn. Gen. Stat. Sec. 8-4c

- Land Use commissioners shall complete at least four hours of training.
- At least one hour addressing affordable housing.
- Additional 3 hours may include (1) process and procedural matters, including the conduct of effective meetings and public hearings...(2) the interpretation of site plans, surveys, maps and architectural conventions, and (3) **the impact of zoning on the environment**, agriculture and historic resources.

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CLEAR

For land use training calendar, basic and advanced land use training opportunities.



Zoning for Climate Resilience

Targeting regulations to:

- Protect natural buffering features and green infrastructure (Low Impact Development).
- Incentivize development density in specific areas or limit development in vulnerable areas.
- Specify resilient design to reduce impacts of storms, sea level rise, and increasing heat.



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Climate Resilient Zoning

Zoning is one tool communities can use to enhance local resilience to climate change impacts like flooding, sea level rise, and increased heat.

Towns in Connecticut are authorized by the state government to regulate how land can be used through zoning under C.G.S. §§ 8-2 to 13a. Each town's legislative body can adopt the provisions in the statute detailing the powers of a zoning commission, make up, and the extent of the zoning commission's authority. Guided by planning and development staff, and consistent with the town Plan of Conservation and Development, zoning commissions pass regulations to describe what uses land can be put to and in what areas, with the intent to protect the health and safety of all. As climate change threatens people and the environment, municipalities can implement strategic land use planning and zoning regulations to improve local climate adaptation and resilience and direct development away from vulnerable areas.

“Regulations can be targeted to protect natural buffering features and green infrastructure, incentivize development density in specific areas, and specify resilient design to reduce impacts of storms, sea level rise, and increasing heat.”

As the changing climate increases vulnerability and intensifies risk, zoning commissions should be aware of state, regional, and local hazard mitigation plans and localized vulnerability assessments when determining land uses. Policies like transportation-oriented development can help climate change mitigation by reducing transportation needs (and thus fossil fuel use) while furthering housing and development goals. Adaptation policies can avoid sprawl and site development away from climate-vulnerable areas like flood zones. By evaluating current and future climate vulnerability, development can be sited in appropriate, low hazard areas, and be designed and built to standards to withstand predicted climate risks.

Zoning regulation can also be used to meet overlapping municipal priorities, like increasing affordable housing options while minimizing hazard risk. For example, reducing minimum lot size in certain zones can help concentrate density in less climate risky places while increasing affordability for lower income property buyers. Affordable housing options can be integrated into projects that also meet resilient design criteria helping municipalities avoid climate risk and meet obligations under C.G.S. 8-30g's affordable housing land use appeals procedure.

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Zoning for Municipal Resilience
Connecticut Institute for Resilience and Climate Adaptation
Zoning Fact Sheet Series

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ZONING FOR CLIMATE RESILIENCE LIBRARY AND TRAINING FOR LAND USE OFFICIALS



Zoning for Climate Resilience Library

Fact sheets on zoning concepts that can be used to increase climate resilience:

- **Transferable Development Rights**
- **Maximum Lot Coverage**
- **Minimum Lot Size Reduction**
- **Overlay Zones**
- **Reducing Parking Minimums**
- **Energy Standards**
- Prohibit Substantial Improvement in Flood Zones
- Policies to Address Increased Urban Heat
- Tree Protections/ Landscape Standards



Transfer of Development Rights and Resilience



Transfer of Development Rights and Resilience

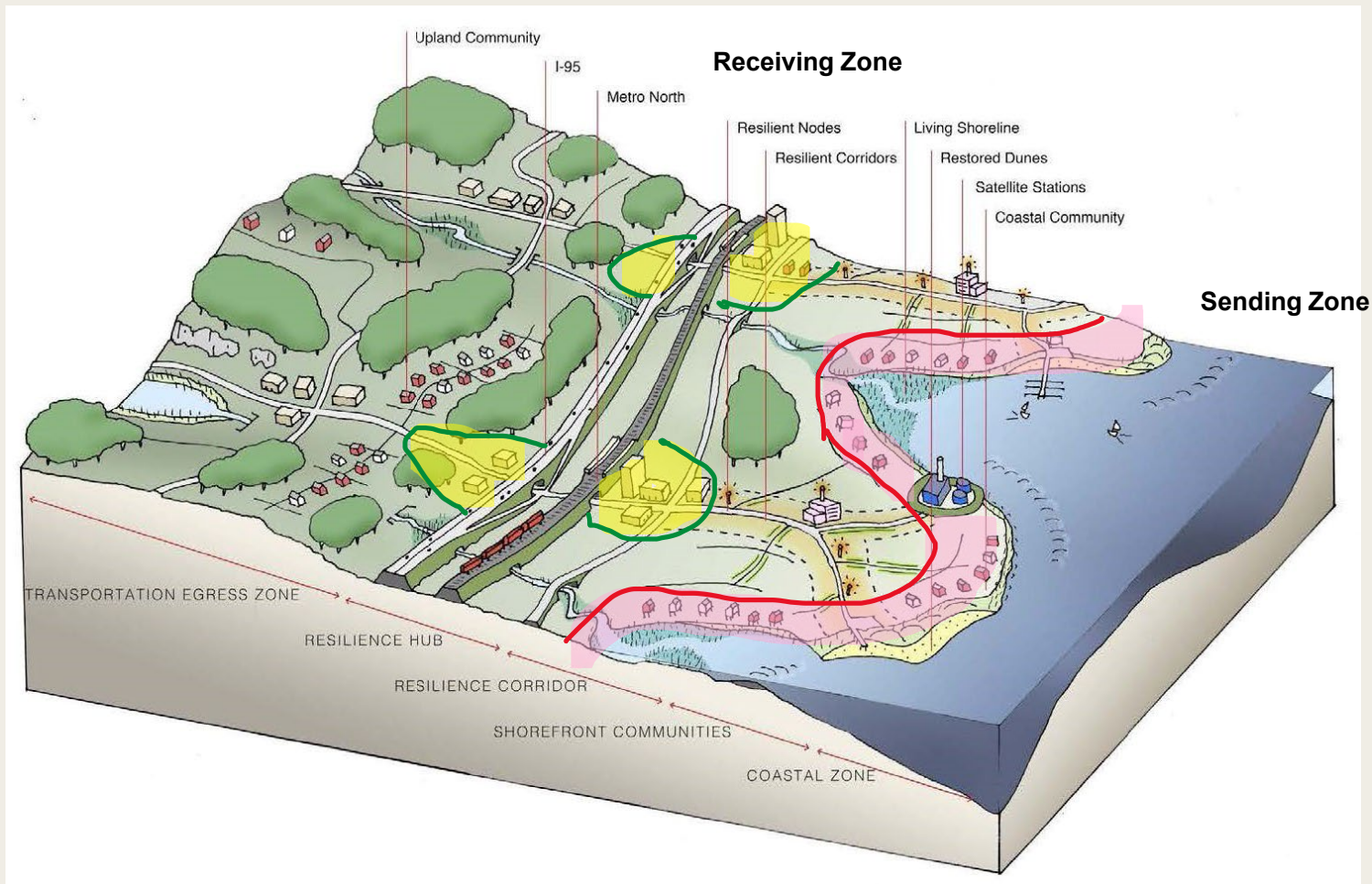
Transferable Development Rights (TDR) is a regulatory technique allowing development rights to a property to be severed, transferred, and relocated to another parcel of land.

- Landowner retains the title and other rights to the property.
- Expressed as a conservation easement in land records.

TDRs can preserve and protect:

- Natural resources
- Ecological functions
- Open space
- Agricultural and historic areas





Sending Zones direct development out of vulnerable areas and allows the development rights to be utilized in **Receiving Zones**; permitting more density than authorized by typical zoning ordinance.



Transfer of Development Rights and Resilience

Challenges and Resolutions to Connecticut TDR Statutes

C.G.S. Sec. 8-2 Regulations (a)...Such regulations may provide for a municipal system for the creation of development rights and the permanent transfer of such development rights, which may include a system for the variance of density limits in connection with any such transfer....

C.G.S. Sec. 8-2f. Joint applications necessary for transfer of development rights. Any zoning regulations adopted pursuant to section 8-2 concerning development rights shall authorize the transfer of the development rights to land only upon joint application of the transferor and transferee.

C.G.S. Sec. 8-2e. Municipal agreements regarding development rights. Any two or more municipalities which have adopted the provisions of this chapter or chapter 125a or which are exercising zoning power pursuant to any special act may, with the approval of the legislative body of each municipality, execute an agreement providing for a system of development rights and the transfer of development rights across the boundaries of the municipalities which are parties to the agreement. Such system shall be implemented in a manner approved by the legislative body of each municipality and by the commission or other body which adopts zoning regulations of each municipality.



Transfer of Development Rights and Resilience

City Spotlight... Stamford, CT

- Adopted a modified TDR program to manage development densities and encourage historic preservation.
- Ordinance allows for redefining boundaries of adjacent lots for zoning purposes in a few of the city's densest zoning districts.



Tabernacle of Grace Church Stamford, CT., photographed May 25, 2021. Tyler Sizemore / Hearst Connecticut Media

This application could be applied to promoting **climate resilience** in areas where protection of micro-resources would be of value, like shade islands, greenspace, or creating stormwater retention swales.



Minimum Lot Size Reduction and Resilience

"Connecticut's large lot sizes are larger than other states, which is one big reason Connecticut is one of the most expensive states to live in (Desegregate CT)."

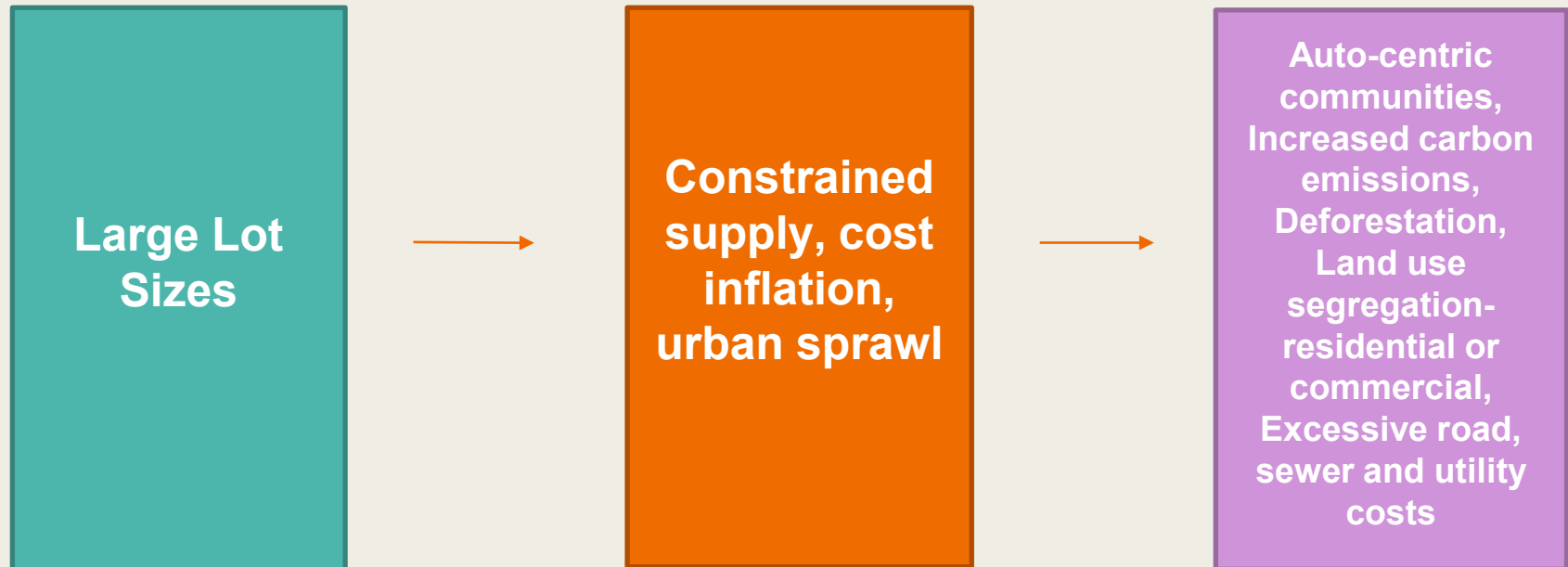


Image courtesy Desegregate CT



Minimum Lot Size Reduction and Resilience

Minimum Lot size requirements are zoning codes that require developable land parcels to be a minimum size.



Minimum Lot Size Reduction and Resilience

Smaller lot sizes promote climate resilience by...

- ✓ Influencing cluster development.
- ✓ Limiting urban sprawl.
- ✓ Capitalizing open space.
- ✓ Lessen impervious surfaces.

Open space can be used to control flooding, preserve natural resources, enhance tree canopy, create community space, and increase wildlife habitat, biodiversity and ecological services.



Impervious surface removal Photo credit Department of Energy and Environment DC River Smart Homes Project



Minimum Lot Size Reduction and Resilience



Photo courtesy Desegregate CT

Minimum Lot Size reduction can create diverse housing opportunities that appeal to various demographic populations, leading to more affordable and obtainable housing, and addresses historic racial and economic injustice.



Minimum Lot Size Reduction and Resilience

Thinking ahead...



Scituate, MA – January 8: MBTA commuter rail train (Staff Photo By Stuart Cahill/Boston Herald)

Massachusetts has adopted smaller lot sizes in areas close to public transit to better influence Transit-Oriented Communities and create housing opportunities.

Prospect for CT?

- Carbon emission goals.
- Climate initiatives.

Learn more about the [2021 Massachusetts Housing Choice Act](#) by following:

<https://www.mass.gov/info-details/multi-family-zoning-requirement-for-mbta-communities>



Maximum Lot Coverage and Resilience



Maximum Lot Coverage and Resilience

Maximum Lot Coverage is the maximum area of a lot allowed by regulation to be covered by **impervious surfaces**, including the building, driveways and parking areas, and other surfaces that do not allow for natural water infiltration.

$$\text{Impervious surface} \div \text{Total Lot area}$$



Maximum Lot Coverage and Resilience

Impervious Surfaces

- Buildings/Structures
- Asphalt driveways
- Patios
- Pools
- Sheds
- Roof overhangs
- Decks
- Parking Lots
- Concrete pavers

Approach

- Restrictive
- Moderate
- Inclusive

Any surface where water cannot effectively infiltrate to the underlying soil!



Maximum Lot Coverage and Resilience

Methods of Impervious Mitigation

Tree Planting

- Planting trees in highly impervious areas can reduce flooding as well as intercept heavy rainfall, thus retaining stormwater runoff. Tree canopy cover can also offer urban heat relief and reduce cooling costs.
- [*New York Model Local Laws to Increase Resilience*](#) suggest that property owners should plant one tree for every 200 sq ft of impervious surface created.

Permeable Pavement

- Alternative porous surface
 - Use in lower traffic areas to make an impact on water drainage.



Photo courtesy CT DEEP



Maximum Lot Coverage and Resilience

Promote Climate Resilience by...

- Reducing flood risks
 - Stormwater management
- Preventing water quality threats
- Mitigating Urban Heat
- Open space opportunity
 - Flood control
 - Public recreation
 - Tree canopy growth



Parking Minimum Reduction and Resilience

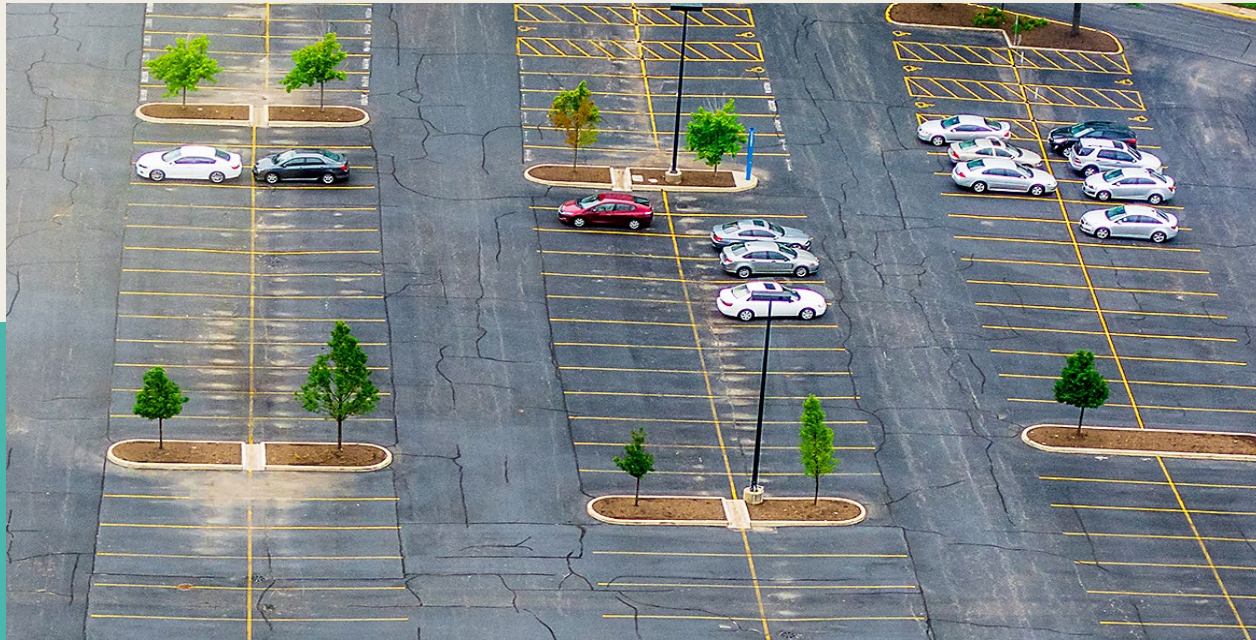
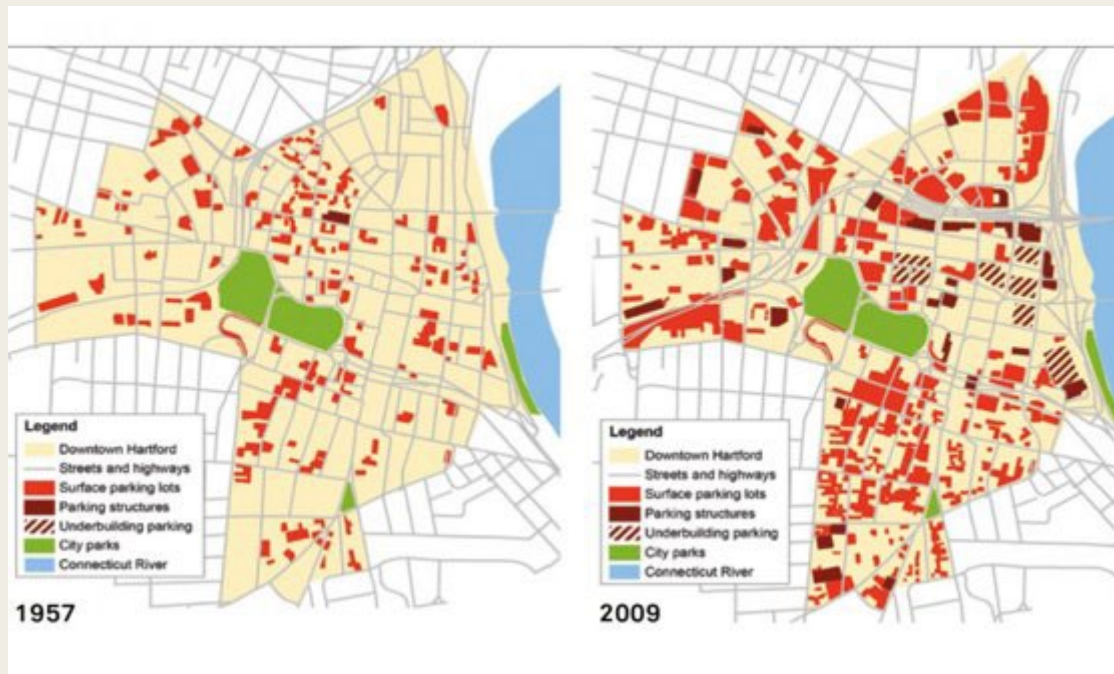


Photo by eyfoto/iStock/Getty Images Plus



Parking Minimum Reduction and Resilience

Parking Minimums are municipal zoning ordinances that mandate a certain number of off-street parking spaces for private property owners to provide and maintain. They are usually determined by the square footage of a pertaining structure or number of residential units.



Researchers have determined that the land dedicated to surface parking lots in downtown Hartford, CT, tripled between 1960 and 2000.

Credit: Christopher McCahil and Norman Garrick.



Parking Minimum Reduction and Resilience

Why are Parking Minimums problematic?

Damaging to the economy and resiliency of our communities by:

- Adding profitless value to urban businesses.
- Creating auto-centric communities and contributing to GHG emissions.
- Cost inflation passed on to consumer and residents.
- Dramatically shaping the structure and function of urban spaces.



Hartford, CT Picture sourced from: <https://www.strongtowns.org/journal/2018/6/14/3-lessons-in-people-centered-transportation-from-the-first-us-city-to-completely-eliminate-parking-minimums>



Parking Minimum Reduction and Resilience

Promote Climate Resilience by...

- ✓ Reducing impervious cover
 - Convert to Green Space
 - Mitigates Urban Heat Island Effect
 - Enhances Stormwater Management
- ✓ Decrease GHG emissions
 - Influence walk-able cities by decreasing large gaps between business

Other benefits...

- ✓ Businesses can utilize their spaces as a valuable resource
- ✓ Better land use
 - Increased housing
 - Recreational space
 - Better public transportation systems
 - Greenspace-Mitigation of climate impacts



Parking Minimum Reduction and Resilience

2021 Connecticut Zoning Reform

Public Act 21-29

“may not require a minimum number of parking spaces for new housing units in excess of one space for studio and one-bedroom homes or two spaces for two-plus-bedroom homes.”

Municipalities can reduce Parking requirements in their cities further, abolish all together, or set parking maximums.

****Context specific!** What is appropriate for one town or zone, may not be appropriate for others. Requires data evaluation, nuance. This is why many communities chose to opt-out of the above provision in PA 21-29.**



Parking Minimum Reduction and Resilience

City Spotlight...

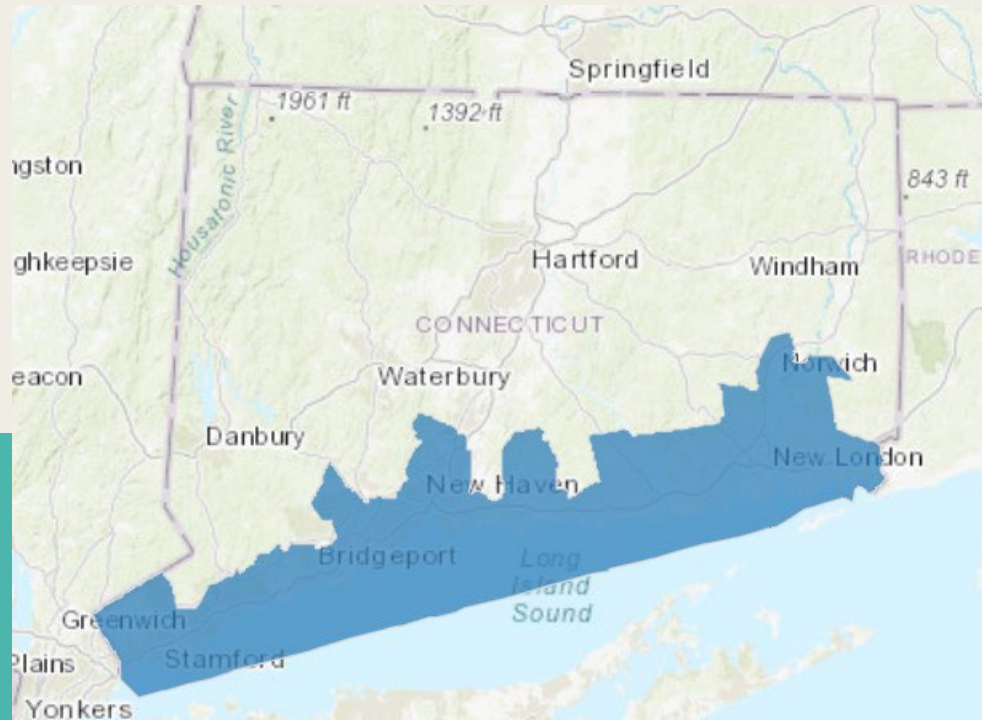
- Hartford CT eliminated parking minimums citywide.
- Enacted use-specific parking maximums.
- Has *cycle* parking minimums!



This building was converted to apartments in downtown Hartford after parking mandates were eliminated. Photo: [Google Maps https://usa.streetsblog.org/2017/12/13/hartford-eliminates-parking-minimums-citywide/](https://usa.streetsblog.org/2017/12/13/hartford-eliminates-parking-minimums-citywide/)



Overlay Zones and Resilience



Connecticut Coastal Area and Boundary Polygon Map photo courtesy of CT DEEP GIS





Overlay Districts and Resilience

Overlay Districts are additional layers of regulation for site-specific concerns. Commonly used for:

- Historic Preservation
- Flood protection zones and waterfronts
- Riparian corridors
- Pedestrian friendly zoning
- Transportation oriented development



Overlay Districts and Resilience

- In 2021, **Connecticut Public Act 21-29** revised the zoning enabling act to specifically authorize municipalities to adopt zoning regulations to allow overlay zones, floating zones, planned development districts, and cluster zones.
- Overlay zones can now be used for a wider range of purposes, like fostering **climate resilience**, without concern of legal challenge.
- Overlay zone standards can be implemented by right or permit to provide a targeted layer of protection for vulnerable areas.



Overlay Districts and Resilience

In Connecticut...

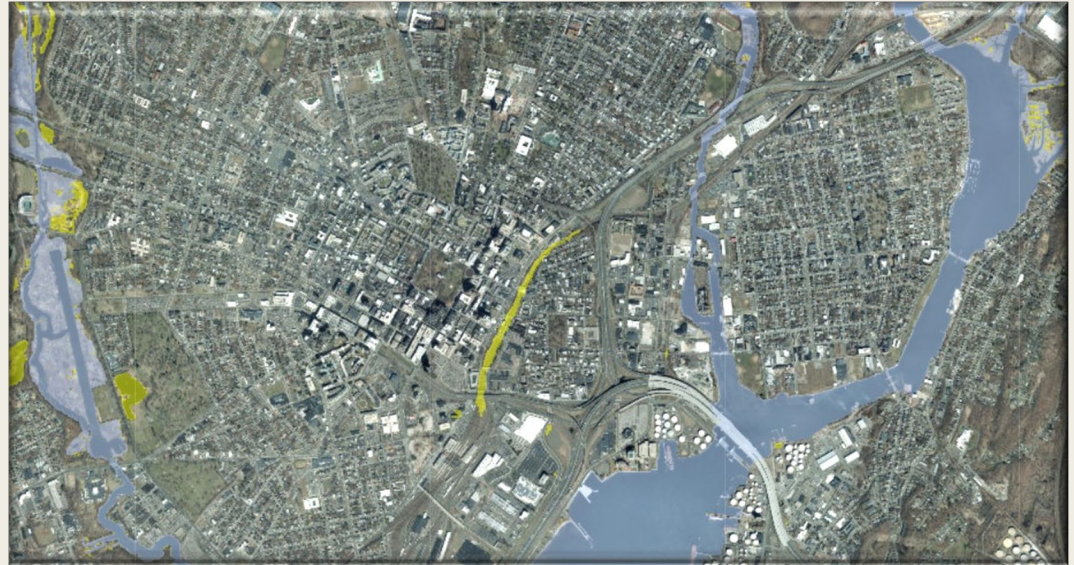
Connecticut Coastal Management Act (P.A. 79-535) authorized creation of Coastal Overlay Zones to regulate coastal development and limit the impact of flooding and erosion. While the Act does not specifically refer to climate resilience, the purpose and criteria are consistent with fostering a **climate resilient coastal area**.

- Greenwich Connecticut Coastal Overlay Zone has:
 - Strict criteria for project approvals, requires site plan review and prioritizes protection of the natural environment and coastal resources.
 - Address climate resilience more directly by adding resilient design requirements.

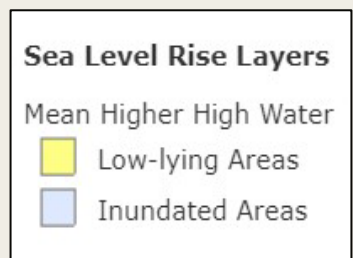


Overlay Districts and Resilience

- Using best evidence sea level rise modeling to discern a Flood Overlay Zone boundary (inclusive of FEMA 100-year flood zones) would be best practice for a municipality to provide appropriate flood protection zoning regulations in coastal areas.
- Coastal overlay zones could be adapted to address climate resilience more directly by adding resilient design requirements.



Section of New Haven, CT CIRCA SLR/Storm Surge Viewer Tool



For Data Description and Usage, visit [CIRCA's SLR and Storm Surge Viewer Tool](#)



Overlay Districts and Resilience

Promote Climate Resilience by...

- Regulating adaptive strategies
 - Breakaway walls
 - Setbacks
 - Elevation standards
 - Impervious surface requirements
 - Development densities
 - Coastal sprawl management
 - Limit sensitive area development
- Flexibility in standards
 - Elevation of buildings in flood zones

Some municipalities have further expanded community resilience by increasing minimum flood protection requirements above state and federal standards with the use of Overlay Districts.



Overlay Districts and Resilience

A **Tiered Overlay Zoning Structure** can accommodate site-specific climate risks.

- ❖ **Protection Zone:** areas with critical infrastructure and dense development; reliance on hard armored flood protection infrastructure, but green infrastructure could be encouraged.
- ❖ **Accommodation Zone:** non-critical areas, future sea level rise is considered in future development i.e., setback, elevation, stronger building codes; downzoning appropriate for hazard reduction.
- ❖ **Conservation Zone:** areas with natural flood protection (marshes) or only non-critical structures at risk; downzoning to discourage development; rebuilding restrictions; overall goal of removing development and replacement with natural protection or open space.



Overlay Districts and Resilience

City Spotlight...

South Kingstown, Rhode Island – Coastal Resilience Overlay District

- Specifically addresses the effects of climate change by “promoting awareness of future projections of sea level rise and the associated impacts from flooding and storm surge to current and future property owners.”
- Susceptible to a one-hundred-year storm surge, in combination with a five-foot sea level rise that lies outside of FEMA Special Flood Hazard Area

Influences property owners to make decisions that are responsive to a changing climate and weather patterns.



Energy Standards



Energy Standards for Resilience

[Public Act 21-29](#) changed language about Renewable Energy.

New language now appears in CGS 8-2 (c) regulations may:

(3) Require or promote

- (A) energy-efficient patterns of development;**
- (B) the use of distributed generation or freestanding solar, wind and other renewable forms of energy;**
- (C) combined heat and power; and**
- (D) energy conservation;**

(4) Provide for incentives for developers who use

- (A) solar and other renewable forms of energy;**
- (B) combined heat and power;**
- (C) water conservation, including demand offsets; and**
- (D) energy conservation techniques, including, but not limited to, cluster development, higher density development and performance standards for roads, sidewalks and underground facilities in the subdivision;**



Energy Efficiency Standards

Promotes resilience by...

- ✓ Reducing electric grid demands
- ✓ Decreasing GHG emissions
- ✓ Can be cost effective for consumers
- ✓ If developed into microgrids, local areas can be more resilient to storms and power outages.



Photo courtesy <https://www.energystar.gov/>



Solar by Right

- Regulation designed to increase renewable energy by permitting solar energy systems by-right in appropriate zones.
- Use specific regulations (height, set back, landscaping and others) still apply.
- Example: Hartford permits roof top solar in all zones as an accessory structure by right, subject to specific regulatory requirements.



NOTE:

- P.A. 22-25 prohibits home-owners associations from banning rooftop solar.
- Connecticut Siting Council has jurisdiction on solar siting for projects generating over one MW.



ZONING FOR CLIMATE RESILIENCE LIBRARY AND TRAINING FOR LAND USE OFFICIALS

FOUND HERE:



<https://resilientconnecticut.uconn.edu/zoning/>



Thank you!

Louanne Cooley
CIRCA Legal Fellow
louanne.cooley@uconn.edu

Kayla Vargas
CIRCA Research Assistant
kayla.vargas@uconn.edu



Connecticut Institute for Resilience
and Climate Adaptation

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