LOCAL ZONING INNOVATIONS FOR COASTAL FLOOD RESILIENCE

Responding to a Changing Environment through Flexible Strategies

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WESTERN CONNECTICUT COUNCIL OF GOVERNMENTS
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II. EXECUTIVE SUMMARY

Connecticut's coastal municipalities face increasing flood risk from sea level rise, higher tides, more intense storms, and the concentration of existing development along Long Island Sound. These risks are already reflected in flood insurance data: as of December 31, 2025, Connecticut's twenty-four coastal municipalities accounted for approximately 80% of the state's flood insurance policies and 80% of its flood insurance losses since 1978.

This report finds that municipalities are not passive in the face of these risks. Many are experimenting with zoning tools that can help property owners elevate, adapt, repair, or rebuild structures in flood-prone areas. The report organizes these innovations into four categories: flood elevation and freeboard standards, flexible building height limits, flexible setback standards, and community-wide alternatives to repeated variance applications.

The report identifies local innovation. Nineteen of the twenty-four coastal municipalities have adopted freeboard standards above base flood elevation. Fourteen have adopted some form of flexible building height standard for flood-prone areas. Ten have adopted flexible setback standards that may help property owners elevate structures, relocate buildings on a lot, accommodate exterior stairs and landings, repair septic systems, or otherwise comply with flood-resilience requirements.

A central finding is that these tools work best when coordinated. Freeboard standards can establish a safer elevation target, but higher elevation requirements may also cause existing structures to conflict with local height limits, setback rules, or nonconforming-structure provisions. Flexible height and setback standards can reduce these conflicts, while community-wide zoning standards can provide a clearer path where entire neighborhoods face similar flood hazards and similar dimensional constraints.

The traditional variance process remains important, but it may not be well suited to neighborhood-scale flood risk. Variances are designed for unusual hardship affecting a specific property. Coastal flood risk, by contrast, often affects entire neighborhoods with similar exposure, lot constraints, and nonconforming conditions. In these situations, zoning text amendments, overlay zones, or other community-wide standards can provide a more predictable and efficient path.

Public Act 25-33 creates an opportunity to build on this local experimentation by connecting municipal plans and regulations more explicitly to sea level rise projections and flood-risk science. The challenge is not to impose a single statewide zoning answer, but to learn from municipal practice, identify transferable tools, and accelerate the diffusion of workable approaches fast enough to matter as sea levels rise.

III. INTRODUCTION

Connecticut's coastal municipalities face increasing flood risk from sea level rise, higher tides, more intense storms, and the concentration of existing development along Long Island Sound. These risks affect homes, neighborhoods, public infrastructure, municipal tax bases, and the long-term ability of coastal communities to recover after major flood events. If the state is to reduce

future flood losses, priority must be placed on understanding and addressing the vulnerabilities of the state's coastal municipalities.

There are twenty-four Connecticut municipalities with shorefront on Long Island Sound. In addition, there are six special purpose political subdivisions within the Connecticut coastline municipalities that have their own independent zoning authority, including three in Groton — the City of Groton, Noank Fire District, and Groton Long Point Association — one in Old Saybrook, the Borough of Fenwick, one in East Lyme, the Crescent Beach Association, and one in Branford, the Pine Island Association.

Federal Emergency Management Agency (FEMA) flood maps identify Special Flood Hazard Areas where there is at least a 1% annual chance of flooding. Along the coast, these include A zones, which identify high-risk flood areas, and VE zones, which identify coastal high-hazard areas subject to additional risk from high-velocity storm waves. Thousands of buildings fall within these A and VE coastal floodplain zones. As of December 31, 2025, there were 17,233 flood insurance policy holders in coastal municipalities, including 7,424 policies within the VE and A zones. Nearly 80% of all flood insurance policies in Connecticut are for properties located in the twenty-four coastal municipalities. Coastal municipalities also accounted for approximately 80% of the $553 million in state flood losses during the period from 1978 to December 31, 2025. These losses reflect the combined risks of rising tides and sea levels, dense development along the Connecticut coastline, and riverine flooding affected by inconsistent stormwater and flood-prevention standards across watersheds.

Table 1. National Flood Insurance Program Report for Connecticut's Coastal Municipalities: as of December 31, 2025

Municipality (excluding districts)	Total Losses Paid Since 1978
Branford	$12,626,233
Bridgeport	$15,134,918
Clinton	$8,425,288
Darien	$21,973,811
East Haven	$34,858,582
East Lyme	$4,508,044
Fairfield	$56,568,163
Fenwick, Borough of	$196,449
Greenwich	$38,646,946
Groton Long Point Association	$2,121,911
Groton, City of	$1,072,821
Groton, Town of	$1,726,875
Guilford	$8,386,174
Madison	$11,379,669
Milford	$76,426,423
New Haven	$4,815,165
New London	$2,415,130

Municipality (excluding districts)	Total Losses Paid Since 1978
Noank Fire District	$510,143
Norwalk	$45,989,713
Old Lyme	$7,991,004
Old Saybrook	$15,236,999
Stamford	$29,706,976
Stonington, Borough of	$907,625
Stonington, Town of	$3,947,978
Stratford	$11,838,285
Waterford	$1,521,056
West Haven	$5,099,123
Westbrook	$8,528,053
Westport	$44,323,783
Grand Total	**$476,883,340**

Note: Fenwick is a borough within the town of Old Saybrook; Noank Fire District, Groton Long Point Association and City of Groton are located within the town of Groton; and the Borough of Stonington is located within the town of Stonington

Many of the buildings located in coastal flood hazard areas are single-family residences, and many are nonconforming with respect to zoning setbacks, building height, lot coverage, or other dimensional standards. These structures are often located in older coastal neighborhoods, on small lots, or in areas that predate modern zoning. These conditions can make it difficult for property owners to elevate buildings, relocate structures on a lot, accommodate exterior stairs, repair or replace septic systems, or otherwise improve flood resistance while remaining in compliance with local zoning requirements.

A major factor in flood adaptation is whether local regulations make it practical for property owners to take reasonable steps to reduce their own risk. Regulatory flexibility does not, by itself, reduce future flood damage. If poorly designed, it could allow development patterns that increase exposure or shift risk to neighboring properties. The focus of this report is narrower: identifying ways municipalities can create pathways that make it easier for property owners to elevate buildings, relocate structures to safer portions of a lot, accommodate flood-compliant access, repair septic systems, or otherwise bring existing development into closer alignment with floodplain management objectives.

Zoning regulations, floodplain management regulations, and coastal zone management standards should therefore be understood not simply as constraints, but as tools for directing adaptation toward safer outcomes. The question is not whether coastal development should be made less regulated. The question is whether local regulations can be calibrated so that doing the safer thing is also the clearer, more predictable, and more administratively feasible thing.

Traditionally, property owners seeking relief from dimensional zoning standards have relied on the variance process. Zoning boards of appeal can vary a zoning regulation when the regulation creates a unique hardship arising from the application of the zoning regulations to a specific parcel. However, coastal flood risk often affects entire neighborhoods with similar exposure, similar lot

constraints, and similar nonconforming conditions. When many properties in a neighborhood face the same flood hazard threat, case-by-case relief may be less efficient than community-wide zoning text revisions, overlay zones, or other generally applicable standards.

Connecticut's coastal municipalities are not passive actors in the face of rising flood risk. Many are already testing freeboard requirements, flexible height standards, setback relief, and alternatives to case-by-case variances. These approaches are not simply deregulatory. At their best, they reduce local barriers to risk-reducing adaptation while preserving the underlying public purposes of zoning, floodplain management, coastal resource protection, and neighborhood planning.

This report identifies municipal efforts to address rising tides and higher coastal flooding events through flexible zoning regulations for building heights and setbacks. The purpose of the report is to learn from local experimentation, identify transferable practices, and accelerate the diffusion of workable tools. The municipal tools identified in this report generally fall into several categories:

1. freeboard standards above FEMA base flood elevation;
2. flexible building-height standards;
3. flexible setback standards; and
4. community-wide alternatives to repeated variance applications, including zoning text amendments and overlay approaches.

Together, these innovative tools can help communities reduce barriers to safer property adaptation while preserving existing neighborhoods and providing clearer pathways for property owners to respond to flood risk.

Public Act 25-33 supports this work by requiring municipal plans of conservation and development to address sea level rise and related climate-resilience considerations. As municipalities update their plans and regulations, there is an opportunity to connect local zoning standards more explicitly to flood-risk science, sea level rise projections, and practical adaptation strategies.

IV. MUNICIPAL TOOLS

The following sections organize the municipal approaches identified in this report into four general tool types. These tools are not mutually exclusive. In many cases, they work best when coordinated: freeboard establishes the elevation target, height flexibility allows buildings to reach that elevation, setback flexibility addresses site constraints, and community-wide standards reduce reliance on repeated variances where similar conditions affect entire neighborhoods.

Flood Elevation and Freeboard Standards

The first category of local regulatory innovation is the adoption of freeboard standards above FEMA base flood elevation. Base flood elevation, or BFE, is the elevation that floodwaters are expected to reach during the 1% annual chance flood. It is established through FEMA flood insurance studies and shown on flood insurance rate maps. Local floodplain regulations use BFE to determine how high new construction or substantially improved structures must be elevated.

Freeboard is the additional height required above BFE. For example, if a municipality requires new residential construction to be elevated to BFE plus two feet, the additional two feet is the freeboard requirement. Freeboard provides a margin of safety above the minimum FEMA

elevation. It recognizes that flood elevations are based on models, that flood maps cannot predict the precise height or horizontal extent of future floods, and that future conditions may differ from the past conditions reflected in existing flood insurance studies.

Five coastal municipalities continue to rely on BFE as the standard for determining the elevation of new residential construction. The remaining nineteen coastal municipalities have adopted freeboard standards of one to two feet above BFE. These local standards represent an important form of municipal adaptation. Rather than relying exclusively on the minimum FEMA elevation, these municipalities have chosen to build in an additional margin of protection. Table 2 summarizes required freeboard standards for new residential construction in Connecticut's twenty-four coastal municipalities as of March 24, 2026.

Table 2. Required Freeboard for New Residential Construction on the Connecticut Coast: March 24, 2026

Municipality	Freeboard (Feet above BFE)
Branford	1
Bridgeport	0
Clinton	1
Darien	1
East Haven	0
East Lyme	1
Fairfield	1.1
Greenwich	1
Groton	1
Guilford	1
Madison	2
Milford	2
New Haven	1
New London	2
Norwalk	2
Old Lyme	1
Old Saybrook	2
Stamford	0
Stonington	1
Stratford	0
Waterford	1
West Haven	0
Westbrook	1
Westport	1

Source: WestCOG analysis of coastal municipal zoning and flood prevention ordinances, March 24, 2026

The adoption of freeboard standards reflects the uncertainty inherent in flood-risk planning. Current base flood elevations for the four coastal counties range from 11 to 20 feet based on the

North American Vertical Datum of 1988 (NAVD 88). NAVD 88 is the official vertical datum for measuring orthometric heights in the United States, Canada, and Mexico. It provides FEMA with a standardized zero-elevation reference point for surveying, engineering, and flood mapping.

While FEMA BFEs provide the regulatory baseline, they are based largely on past flood conditions. They do not fully account for future sea level rise, higher tides, more intense storms, or the combined effects of these changes. A freeboard requirement allows municipalities to account for some of this uncertainty without attempting to redraw the FEMA flood maps themselves.

The amount of freeboard required is ultimately a risk-management decision. It may be influenced by flood science, construction cost, building design, neighborhood context, aesthetic considerations, and local tolerance for future flood risk. FEMA studies have determined that elevating a building four feet above the base flood elevation may increase construction costs by about two percent. This suggests that additional elevation can be a cost-effective risk-reduction measure in many cases, particularly when considered against the potential cost of repeated flood damage.

Public Act 25-33 makes these local freeboard decisions more consequential by requiring municipal plans of conservation and development to consider the latest sea level rise projections developed by the National Oceanic and Atmospheric Administration (NOAA), the Connecticut Institute for Resilience and Climate Adaptation (CIRCA), or the University of Connecticut (UConn). CIRCA has estimated that sea level rise of 20 inches should be expected by 2050. Using that estimate, one possible approach would be for coastal municipalities to reestablish local flood elevation standards 20 inches higher than those found in current Flood Insurance Studies. None of the coastal municipalities have chosen to take this approach. Instead, five municipalities have increased the freeboard requirement two feet above BFE.

However, freeboard standards cannot be considered in isolation. Requiring additional elevation may reduce flood risk for new construction or substantially improved structures, but it may also make it harder for owners of existing buildings to adapt if local zoning standards are not adjusted at the same time. A property owner seeking to elevate a structure above BFE may encounter maximum height limits, story limits, setback requirements, lot coverage rules, stair and landing constraints, or nonconforming-structure provisions. In these cases, a higher freeboard standard can unintentionally create a conflict between floodplain management objectives and dimensional zoning requirements.

For this reason, local freeboard standards are best understood as part of a broader suite of coordinated regulatory tools. Freeboard establishes the target elevation for safer construction, but height, setback, access, septic, lot coverage, and nonconforming-structure provisions determine whether property owners can practically reach that elevation. As freeboard requirements increase, the need for corresponding zoning adjustment becomes more important. Without that coordination, property owners may be required or encouraged to elevate structures for flood safety while also needing discretionary relief from local zoning standards to do so. Flexible building-height standards, flexible setback standards, and community-wide alternatives to

repeated variance applications can help reduce that conflict where entire neighborhoods face similar flood hazards and similar zoning constraints.

Flexible Building Height Limits

The second category of local regulatory innovation is flexible building height limits for structures in flood-prone areas. Freeboard standards establish the target elevation for safer construction, but building height limits can determine how much property owners may raise their home. A structure that is elevated to meet BFE or freeboard requirements may exceed a local maximum height limit, story limit, or rule governing nonconforming structures. In these cases, the property owner may be required to seek a variance even when the proposed elevation would better align the building with floodplain management objectives.

Flexible building height limits are intended to reduce this conflict. They do not eliminate the need for zoning standards. Rather, they adjust how height is measured or applied so that local height limits do not unnecessarily prevent property owners from elevating buildings, rebuilding after flood damage, or bringing existing structures into closer compliance with flood-elevation requirements.

Fourteen of the twenty-four coastal municipalities allow some form of flexible building height limit to address threats posed by coastal flooding. Not all fourteen municipalities apply these standards to all zoning districts or all flood-prone areas. Across the Connecticut shoreline, 185 land use zones abut Long Island Sound, and local approaches vary. This variation reflects the fact that flexible building height provisions have developed through local experimentation rather than through a single model floodplain regulation.

The approaches identified in Connecticut's coastal municipalities fall into several general types.

1. **Adjusting how stories or basements are counted.** Some municipalities provide flexibility by excluding certain below-BFE or floodable spaces from the calculation of building stories. In Bridgeport, where height is measured in stories rather than feet, a story below BFE counts as a half story. Norwalk excludes two types of basements from the calculation of stories in flood zones, including certain basements where more than 50% of the floor-to-ceiling height is below BFE and certain areas below elevated buildings on pilings within the Special Flood Hazard Area. Old Saybrook also provides flexibility by not counting certain basement spaces as stories, while also allowing nonconforming buildings in flood hazard areas to be raised up to 12 feet above existing grade, provided the elevation does not violate floodplain management requirements.
2. **Measuring building height from BFE or a BFE-related elevation.** Some municipalities address the problem directly by changing the starting point for measuring height. Stamford measures building height from BFE plus three feet rather than from the actual grade of the land surrounding the building. Waterford measures building height from BFE plus two feet. Stonington limits building height in the 100-year coastal flood zone to 24 feet above BFE. These approaches allow building height limits to respond to flood-elevation requirements rather than treating existing grade as the only relevant reference point.

3. **Using the higher of BFE or grade plane.** Greenwich has adopted an approach that considers whether BFE or the grade plane for the site is higher. Where BFE is higher, it becomes the basis for determining maximum building height. The regulations also exclude basements as a story if there is no more than seven feet from the top of the basement to BFE. This approach recognizes that maximum building height in a flood-prone zone may be influenced by both flood elevation and site grading conditions.

4. **Providing incremental height relief tied to flood elevation.** Some municipalities allow additional height only to the extent needed to meet flood-elevation requirements. Fairfield ties maximum height standards to the number of feet the building is raised above BFE. Westport limits the additional height allowance to the amount needed to bring the first floor above BFE, up to five feet. These approaches are targeted because they provide flexibility for flood adaptation without creating unlimited height relief.

5. **Providing fixed additional height or higher maximum height in flood-prone areas.** Groton allows a building in a flood-prone area to be raised five feet regardless of its current relationship to BFE. Guilford establishes a maximum building height of 40 feet in flood-prone areas. These approaches are simpler to administer because they provide a fixed height allowance or fixed height limit for affected areas.

6. **Providing flexibility for nonconforming structures.** Madison allows nonconforming buildings to be raised two feet above BFE without a variance for setback or height limits. Old Saybrook also allows nonconforming structures to be elevated above BFE, subject to its limit of not more than 12 feet above existing grade. These provisions are particularly important in older coastal neighborhoods where many existing buildings may already be nonconforming under current zoning standards.

7. **Targeting flexibility to specific uses or development types.** New London allows flexible building height standards for water-dependent uses in waterfront zones. Clinton uses an incentive approach for multifamily development, allowing higher building heights that comply with BFE standards if ecological protections, waterfront amenities, and green building concepts are incorporated. These approaches are narrower than townwide flood-zone standards but may be useful where municipalities wish to align height flexibility with specific waterfront, economic development, housing, or environmental objectives.

These examples show that flexible building height limits can be structured in different ways. Some approaches are broad and apply across flood-prone areas. Others are limited to specific zones, uses, development types, or nonconforming structures. Some are tied directly to BFE or freeboard. Others modify story calculations or provide fixed additional height.

The advantage of BFE-based approaches, such as those used in Stamford, Waterford, and Stonington, is that height limits can adjust with the flood elevation standard rather than requiring repeated amendments as flood-elevation assumptions change. The advantage of targeted incremental approaches, such as those used in Fairfield and Westport, is that they provide only the additional height needed to achieve flood compliance. The advantage of story and basement exclusions, such as those used in Bridgeport, Norwalk, Old Saybrook, and Greenwich, is that they

address the technical problem created when floodable or below-BFE space is counted against a building's permitted height or number of stories. Table 3 summarizes flexible building height standards for flood-prone areas adopted by Connecticut coastal municipalities as of March 2026.

Table 3. Summary of Flexible Building Height Standards for Flood Prone Areas Adopted by Fourteen Connecticut Coastal Municipalities: March 2026

Standard	Applies to All Zones?	Stipulate Max. Bldg Height	Max. Bldg Height Varies with BFE	Max. Bldg Height Varies Based on Floor Below BFE
Flexible Bldg Heights Limited to Water Dependent Uses (New London)	No	No	No	No
Development Bonuses for Increased Bldg Heights for Multi-family (Clinton)	No	No	No	No
Sliding Scale Height tied to Increment Above BFE (Fairfield)	No	No	Yes	Yes
Fixed Higher Incremental Height in Flood Prone Zone (Groton)	Yes	Yes	No	No
Fixed Higher Height Limit in Flood Prone Zone (Guilford)	Yes	Yes	No	No
Sliding Scale Height if Bldg Below BFE up to 5' (Westport)	Yes	No	No	Yes
Exclude Two Types of Basements from Calculation of Stories (Norwalk)	Yes	No	No	No
Exclude Basements from number of Stories. Also Limit Nonconforming Bldgs to 12' above Existing grade. (Old Saybrook)	Yes	No	No	No
Bldg Height Varies Based on Higher of BFE or Grade Plane (Greenwich)	Yes	No	No	Yes
Measure Bldg Height from BFE +3' (Stamford)	Yes	Yes	Yes	No
Measure Bldg Height from BFE + 2' (Waterford)	Yes	Yes	Yes	No
Limit Bldg Height 24' Above BFE (Stonington)	Yes	Yes	Yes	No
Allow Bldg Height 2' Above BFE (Madison)	Yes	No	Yes	No

Standard	Applies to All Zones?	Stipulate Max. Bldg Height	Max. Bldg Height Varies with BFE	Max. Bldg Height Varies Based on Floor Below BFE
Floor below BFE is defined as a half story (Bridgeport)	Yes	No	No	No
Total Yes	**12**	**5**	**6**	**3**

The popularity of these provisions shows that flexible building height limits are already diffusing through local practice. In 2018, the University of Connecticut School of Law identified eight coastal municipalities with flexible height restrictions for buildings located in coastal flood zones.[1] Since that time, this report has identified six additional municipalities with flexible height restrictions: Clinton, Groton, Madison, New London, Old Saybrook, and Stonington. Bridgeport also revised its zoning regulations in 2024, shifting to an approach based on how space below BFE is counted as a story.

The Law School report did not address the zoning regulations of the six special purpose political subdivisions along the Connecticut coastline. This report found that three of those six political subdivisions have also adopted flexible building height limits: the City of Groton and Groton Long Point Association within the Town of Groton, and the Borough of Fenwick within the Town of Old Saybrook. The three remaining political subdivisions with zoning authority — Noank Fire District, Crescent Beach Association, and Pine Island Association — do not have flexible building height standards for their flood zones.[2]

This pattern of local adoption is important. The question is no longer whether municipalities can adopt flexible building height limits; many already have. The more useful question is which approaches are most transferable, easiest to administer, and best calibrated to help property owners elevate structures for flood safety without creating unintended conflicts with local zoning objectives.

Flexible Building Setbacks

The third category of local regulatory innovation is flexible building setback standards for structures in flood-prone areas. If flexible building height limits address the vertical consequences of elevating a structure, flexible setbacks address the horizontal and site-design consequences. This is especially important along the Connecticut coastline, where many flood-prone properties are located on small lots, in older neighborhoods, or in areas where existing buildings are already nonconforming.

[1] William R. Rath, Christopher P. Kelly, Kristie A. Beahm, University of Connecticut School of Law, Height Restrictions on Elevated Residential Buildings in Connecticut Coastal Floodplains, May 1, 2018.

[2] These three political subdivisions are relatively small in size with the City of Groton encompassing 3.1 square miles, Groton Long Point Association is about 0.4 square miles, and the Borough of Fenwick is also about 0.4 square miles. The three remaining political subdivisions with zoning authority do not have flexible building height standards for their flood zones (Noank Fire District, Crescent Beach Association and Pine Island Association).

Of the 185 zoning districts abutting Long Island Sound, 59% require lots of less than 25,000 square feet, including 31% that require lots of 10,000 square feet or less. With so much small-lot development on the coast, setback standards can determine whether flood adaptation is practical. Flood risk may vary significantly across a single property. One portion of a lot may be lower, closer to the mean high tide line, more exposed to wave action, constrained by steep slopes or rock formations, or otherwise less suitable for rebuilding or elevation. Another portion of the same lot may provide higher ground or a safer location for a structure. Moving a building landward from the mean high tide line may therefore allow a property owner to reduce flood exposure, use higher terrain, avoid site constraints, or place the structure in a safer and more practical location on the lot. Elevating a building to meet BFE and freeboard requirements may also require exterior stairs, landings, or other access improvements. Repairing or replacing septic systems on small coastal lots may require some flexibility in how setback standards are applied.

As with height limits, the issue is not whether setback standards should simply be relaxed. Setbacks serve important public purposes, including light, air, access, privacy, fire separation, architectural character, environmental protection, and coastal resource protection. The question is whether local setback standards can be calibrated so they do not unintentionally prevent property owners from taking reasonable steps to reduce flood risk or comply with floodplain management requirements.

Ten of the twenty-four coastal municipalities provide some form of flexible setback standard for property owners seeking to elevate or adapt buildings in flood-prone areas. In the remaining municipalities, property owners may need to request a variance from setback standards if elevation, relocation, stairs, landings, or other flood-adaptation measures cannot fit within the existing dimensional rules. The flexible setback approaches identified in Connecticut's coastal municipalities fall into several general types.

1. **Reduced setbacks for nonconforming lots.** Darien allows a 75% reduction in setbacks for nonconforming lots. This approach recognizes that nonconforming lots are still buildable lots and that small or preexisting lots may require dimensional flexibility if property owners are to adapt buildings to flood conditions.
2. **Contextual setbacks based on nearby development.** Greenwich allows the average setback of nearby nonconforming lots to help determine the appropriate setback for a new dwelling. This approach is commonly used in small-lot areas with varying front-yard setbacks and can help align flood adaptation with existing neighborhood patterns.
3. **Setback flexibility for septic systems.** Old Saybrook recognizes the need for flexibility where repair or replacement of existing septic systems is required on small coastal lots. Because space is limited, allowing septic system leach fields to encroach into setback areas may be necessary. Setbacks from property lines are also governed by the Connecticut Public Health Code and require approval from the applicable local or regional health district.
4. **Eliminating the need for variances to elevate buildings to meet BFE.** Madison provides one of the clearest examples of setback flexibility tied directly to flood adaptation. It

eliminates the need for a variance to elevate a building or infringe on a required setback area when necessary to comply with BFE and freeboard requirements. This approach is important because it reduces the need for case-by-case discretionary relief when the purpose of the project is to meet flood-elevation standards.

5. **Allowing setback flexibility for stairs and access improvements.** Fairfield and Westport allow flexible setbacks for stairs, landings, and related access improvements required because a building has been elevated. This addresses a common practical problem: even where a building can be elevated, the stairs and landings needed to enter and exit the building may not fit within existing setback rules.
6. **Flexible setbacks for waterfront development.** New London allows flexible setbacks for businesses along the waterfront, including the possibility of zero-lot-line development. This approach is more targeted than a townwide flood-zone standard, but it may be useful where municipalities are balancing flood adaptation with waterfront development objectives.
7. **Flexible setbacks for water-dependent uses.** East Lyme allows commercial water-dependent development along the waterfront to use a zero-lot-line setback option for buildings or structures. This recognizes that some coastal uses must be located near the water and may require a different dimensional framework than inland development.
8. **Flexible setbacks for coastal residential development.** Waterford allows flexible setbacks for residential development along the waterfront, including a zero-lot-line option, provided that adjacent property owners execute a party wall agreement. This approach provides flexibility while addressing the relationship between neighboring properties.
9. **Flexible setbacks for village districts.** Old Lyme allows flexible setbacks for small-lot development in village districts, including zero-lot-line options, if it can be demonstrated that the proposal will not adversely affect public health, safety, or abutting uses. This approach recognizes that older village patterns may require a different setback framework than conventional zoning districts.

The most transferable setback approaches are those that directly connect flexibility to flood-risk reduction or flood-compliance needs. Fairfield, Madison, Westport, Darien, and Old Saybrook provide useful examples because their provisions respond to common adaptation problems: elevating structures, accommodating stairs and landings, adapting nonconforming lots, and repairing or replacing septic systems. These are not open-ended exceptions from zoning. They are targeted tools that reduce local barriers to safer property adaptation.

Flexible setback standards are especially important because height flexibility alone may not be sufficient. A property owner may be allowed to elevate a structure but still be unable to construct code-compliant stairs, shift the building to a safer location, or make necessary septic improvements without setback relief. In that situation, the local zoning framework may encourage flood adaptation in one respect while obstructing it in another.

As with freeboard and flexible height limits, the strongest approaches are those that make safer adaptation clearer, more predictable, and easier to administer while preserving the underlying public purposes of zoning. Where entire coastal neighborhoods face similar flood hazards and similar small-lot or nonconforming conditions, broadly applicable setback standards may provide a more effective path than repeated individual variance applications. This neighborhood level approach to flood risk reduction has already been adopted as a best practice in numerous coastal municipalities.

From Variances to Community-Wide Standards

The fourth category of local regulatory innovation is the shift from repeated case-by-case variance applications toward community-wide zoning standards for neighborhoods facing similar flood hazards. Variances remain an important part of local land use regulation. They allow zoning boards of appeal to provide relief where the strict application of zoning regulations creates an unusual hardship affecting a specific property. However, the variance process was not designed to serve as the primary tool for addressing conditions shared by entire coastal neighborhoods.

This distinction is central to coastal flood adaptation. Many flood-prone neighborhoods contain older buildings, small lots, nonconforming structures, constrained setbacks, and similar exposure to sea level rise, higher tides, storm surge, or high-velocity wave action. Where many properties face the same flood hazard and the same dimensional zoning constraints, repeated individual variance applications can be cumbersome, unpredictable, and administratively inefficient. They can also place property owners in the position of seeking discretionary relief in order to take steps that floodplain management standards otherwise encourage.

Municipal floodplain regulations already recognize that some flood-zone conditions require specialized treatment. Nineteen of the twenty-four shoreline municipalities provide less rigid standards when variance requirements are triggered for National Register or state historic properties located in high-hazard flood zones. These provisions reflect the fact that strict application of ordinary standards may not always serve the public interest when other important policy objectives are also at stake.

The same logic can apply to neighborhood-scale flood adaptation. If a class of properties faces similar flood exposure, similar small-lot constraints, or similar nonconforming conditions, municipalities may wish to consider whether generally applicable zoning text amendments, overlay zones, or district-specific standards would provide a better tool than repeated variances. These approaches can establish predictable rules in advance, apply them uniformly to similarly situated properties, and reduce the need for property owners to prove hardship one parcel at a time.

Nineteen of the twenty-four coastal municipalities have adopted criteria that must be considered before a variance can be granted from strict compliance with floodplain regulations. These criteria are useful for evaluating individual properties. However, they may also provide a starting point for thinking about broader zoning reforms. Instead of using variance criteria only to decide individual cases, municipalities can use them as a template for identifying categories of properties or neighborhoods where zoning standards should be adjusted in advance to support safer adaptation.

Community-wide approaches may include zoning text amendments that allow elevation to BFE or freeboard without triggering height or setback variances; overlay zones for flood-prone neighborhoods; special provisions for nonconforming structures in coastal flood hazard areas; targeted rules for stairs, landings, and access improvements; or standards that allow structures to be shifted to safer portions of a lot. These tools do not eliminate regulation. Rather, they move the regulatory decision from ad hoc relief to planned standards that can be debated, adopted, and applied consistently.

The purpose of community-wide zoning standards is not to make flood-prone development less regulated. The purpose is to reduce unnecessary barriers to risk-reducing adaptation while preserving the public purposes of zoning, floodplain management, coastal resource protection, and neighborhood planning. Where entire neighborhoods face similar flood hazards and similar zoning constraints, planned regulatory tools can provide a clearer and more reliable path than repeated individual variance applications.

V. FROM LOCAL INNOVATION TO IMPLEMENTATION

The municipal tools described above show that Connecticut's coastal communities are already adapting zoning to changing flood conditions. The next question is how these local innovations can be implemented more systematically. That requires attention to three related issues: the need for multi-jurisdictional planning where flood risk extends beyond parcel and municipal boundaries; the zoning authority and legal principles that allow municipalities to adopt standards for similarly situated properties; and the new planning obligations created by Public Act 25-33.

Multi-Jurisdictional Flood Prevention Planning

The preceding sections focus on local regulatory tools that can reduce barriers to safer property adaptation. Freeboard standards, flexible building height limits, flexible setback standards, and community-wide alternatives to repeated variance applications can help property owners elevate, relocate, repair, or rebuild structures in ways that better account for flood risk. These tools are important, but they are only one part of coastal flood prevention.

Some flood-risk decisions cannot be resolved parcel by parcel or even municipality by municipality. Individual property adaptation does not determine which neighborhoods should be hardened in place, which areas may require long-term transition, which public infrastructure should be protected, which natural systems should be restored, or how the costs of adaptation should be shared among property owners and different levels of government. Those questions require a broader planning framework.

A master planning approach should be used to evaluate long-term flood risk and recovery strategies for affected coastal neighborhoods. This framework should consider different development options, including where hardening in place may be feasible, where strategic retreat may eventually be necessary, and where intermediate adaptation strategies may be warranted. These decisions should be informed by neighborhood conditions, infrastructure needs, environmental constraints, flood exposure, property values, municipal fiscal impacts, and the expected useful life of public and private investments.

Determining which areas are suitable for hardening, transition, or retreat requires multi-jurisdictional planning because many agencies and levels of government have responsibility for Connecticut's coastline. At the federal level, relevant agencies include FEMA, NOAA, the U.S. Army Corps of Engineers, the U.S. Environmental Protection Agency, the U.S. Fish and Wildlife Service, and the U.S. Coast Guard. At the state level, key agencies include the Connecticut Department of Energy and Environmental Protection, the Connecticut Department of Public Health, and the Division of Emergency Management and Homeland Security. Five regional councils of governments also have planning responsibilities along the Connecticut coastline. CIRCA and the Center for Land Use Education and Research (CLEAR), both affiliated with the University of Connecticut, are also important technical partners.

A multi-jurisdictional flood prevention framework should begin with a shared understanding of flood risk. Flood hazard planning zones should be defined based on factors such as site-specific base flood elevations, sea level rise estimates, changes in the frequency of higher tides, storm surge exposure, wave action, erosion risk, drainage conditions, impervious land cover, and the fiscal and engineering feasibility of hardening in place versus retreat. These zones should not be understood merely as regulatory labels. They should help organize decisions about infrastructure, land use, public investment, property adaptation, emergency management, environmental protection, and long-term fiscal responsibility.

For each flood hazard planning zone, the next steps should include:

1. identifying critical infrastructure and public facilities that may need to be protected under a harden-in-place strategy;
2. determining the long-term costs, benefits, and limits of each flood-threat mitigation scenario; and
3. allocating responsibilities among municipal, regional, state, and federal entities for planning, funding, implementation, maintenance, and recovery.

This type of planning also requires fiscal analysis. Hardening in place may protect existing neighborhoods and infrastructure, but it can involve substantial public and private cost. Retreat may reduce long-term exposure, but it raises difficult questions about property value, municipal tax base, infrastructure abandonment, environmental restoration, and community identity. Intermediate strategies may reduce risk for a period of time but may not be sufficient under longer-term sea level rise scenarios. Without a shared fiscal framework, municipalities and property owners may be left to make decisions without a clear understanding of who will pay, who will benefit, and how long a given strategy is expected to remain viable.

Multi-jurisdictional planning does not diminish the importance of municipal zoning innovation. Instead, it gives local zoning reforms a larger context. Flexible height limits, setback standards, freeboard requirements, and overlay zones can be calibrated differently depending on whether an area is expected to harden in place, transition over time, or face more substantial long-term flood exposure. In this way, zoning can become part of a broader implementation strategy rather than a disconnected set of local exceptions.

Connecticut's coastline involves many players and no single controlling jurisdiction. A rapid intergovernmental implementation model may be necessary to match the scale and speed of coastal flood risk. Such a model should align federal, state, regional, and municipal responsibilities around shared flood-risk data, priority planning zones, regulatory tools, infrastructure decisions, and funding strategies. The goal should be to move from fragmented adaptation toward a coordinated framework that helps municipalities, property owners, and public agencies make decisions that are practical, defensible, and timely.

Zoning Authority, Uniformity, and the Courts

Municipal zoning commissions have authority to adopt zoning standards that address flood risk, including flexible building height limits, flexible setback standards, overlay zones, and provisions for nonconforming structures in flood-prone areas. These tools must be designed to comply with Connecticut's zoning framework, including the requirement that zoning standards apply uniformly to similarly situated properties within the same district or overlay area.

The uniformity rule does not prevent municipalities from adopting flood-related zoning standards. Rather, it requires that those standards be structured and applied consistently. If a municipality determines that properties in a defined flood hazard area share similar conditions, such as exposure to coastal flooding, small-lot constraints, nonconforming structures, or the need to elevate buildings above BFE, the zoning commission may consider standards that apply uniformly to that class of properties. The Connecticut Appellate Court's decision in *MacKenzie v. Planning and Zoning Commission of Monroe* underscores the importance of treating buildings and uses within the same zone consistently.[3] This means that flood-responsive zoning should be drafted carefully, but it does not require municipalities to rely exclusively on individual variances.

Overlay zones may be especially useful for this purpose. A flood resilience overlay can be delineated to include areas with shared flood-risk characteristics or shared adaptation objectives. One overlay zone might identify areas where hardening in place is likely to be feasible. Another might identify areas where long-term transition or additional review is warranted. Other overlays could address critical infrastructure, tide-influenced riparian buffers, small-lot coastal neighborhoods, or areas where nonconforming structures face recurring conflicts between floodplain management requirements and dimensional zoning standards.

The advantage of an overlay approach is that it allows municipalities to target standards to the conditions they are trying to address. It also makes the policy choice explicit. Instead of relying on repeated variance applications, a zoning commission can determine in advance which areas require special standards, what those standards should allow, and what safeguards should apply. This approach can provide clearer expectations for property owners, zoning staff, land use commissions, and neighbors.

Connecticut municipalities can also draw from a broader body of local zoning practice beyond the coastal communities reviewed in detail in this report. WestCOG has identified additional non-coastal municipalities that use flexible height, setback, buildable area, or related dimensional standards to respond to constrained lots, environmental conditions, neighborhood context, or

[3] MacKenzie v. Planning and Zoning Commission of Monroe, 146 Conn. App. 406 (2013).

redevelopment challenges. These examples are not necessarily flood-specific and should not be copied without local review. However, they show that flexible dimensional standards are not unique to coastal floodplain management. They are part of a wider set of zoning techniques that municipalities already use to adapt general zoning rules to specific local conditions.

This broader practice is relevant to coastal flood resilience because it helps demonstrate that flood-responsive zoning can be built from familiar land use tools. A municipality considering flexible height limits, setback relief for stairs and landings, nonconforming-structure provisions, or overlay standards does not need to invent an entirely new zoning model. It can draw from both coastal floodplain examples and other Connecticut zoning approaches that apply dimensional standards more precisely to defined classes of properties.

Courts have an important role in reviewing land use decisions, but they are not land use planners. Their role is to evaluate whether municipal decisions are arbitrary, capricious, unsupported by the record, or otherwise inconsistent with law. Courts can resolve individual disputes, but they cannot provide a comprehensive local adaptation strategy for neighborhoods facing sea level rise, higher tides, storm surge, and changing flood conditions.

Several Connecticut cases illustrate why proactive zoning reform matters. Courts have often given substantial weight to compliance with floodplain management standards, including where property owners seek to rebuild, elevate, or modify structures in coastal flood hazard areas. At the same time, case law cannot reliably solve the broader problem created when existing buildings must be elevated to meet flood standards, but local zoning standards continue to measure height, setbacks, or nonconformities in ways that make compliance difficult.

A Connecticut Supreme Court case involving post-storm rebuilding illustrates this tension.[4] There, the applicant sought to increase the height of a dwelling in a flood zone to meet base flood elevation requirements after storm damage, but the proposed rebuilding conflicted with local maximum building height provisions. The lesson is not that courts should become climate adaptation planners. The lesson is that zoning commissions are better positioned to revise local standards in advance so that flood-compliant rebuilding does not depend on uncertain case-by-case relief.

Other land use doctrines also show that Connecticut zoning can account for environmental constraints. Courts have upheld approaches such as buildable lot concepts that exclude flood-prone or environmentally constrained land from the buildable portion of a parcel.[5] Connecticut courts have not invalidated riparian buffer zones or special setbacks for uses that generate water pollution near rivers. These examples support the broader point that zoning can incorporate

[4] Jack E. Turek et al. v. Zoning Board of Appeals for the City of Milford, 196 Conn. App. 122 (2020), which denied the applicant the right to increase the height of his dwelling in the flood zone to meet BFE after being damaged during Hurricane Sandy in October 2012. Rebuilding the damaged building would have resulted in an exceedance of the maximum building height provisions of Milford's zoning regulations.

[5] Western Connecticut Council of Governments, The Buildable Square: An Innovative Way to Protect Inland Wetlands and Reduce System Failures, August 9, 2023.

environmental and flood-risk considerations when standards are rationally related to legitimate public purposes and are applied consistently.

Nonconforming buildings remain an important part of Connecticut's coastal development pattern. Many coastal neighborhoods predate modern zoning, and many existing buildings do not conform to current dimensional standards. Flood adaptation policy therefore cannot assume a blank slate. In some cases, preserving existing neighborhoods while reducing future flood risk may require standards that allow elevation, relocation on a lot, flood-compliant access, or other adaptation measures without forcing every property owner into the variance process.

A systematic zoning approach is stronger than relying on courts or repeated variances to resolve the same problem one parcel at a time. Zoning commissions can evaluate neighborhood-wide conditions, consider public safety, property protection, coastal resources, infrastructure, and neighborhood character, and adopt standards that apply uniformly to similarly situated properties. This is the proper role of zoning: to establish planned rules for classes of properties, rather than leaving recurring policy questions to ad hoc adjudication.

The legal foundation for flood-responsive zoning is therefore not a departure from zoning principles. It is an application of them. Where coastal neighborhoods face shared flood hazards and shared dimensional constraints, municipalities can use text amendments, overlay zones, flexible height and setback provisions, and nonconforming-structure standards to reduce barriers to safer adaptation while preserving the public purposes of zoning and floodplain management.

Rising Sea Levels and Public Act 25-33

Public Act 25-33 places sea level rise and climate resilience more directly into municipal planning. It requires municipal plans of conservation and development to consider the latest sea level rise projections developed by NOAA, CIRCA, or the University of Connecticut. This requirement strengthens the connection between local planning, floodplain management, zoning, and long-term coastal adaptation.

The challenge is that sea level rise planning requires municipalities to make decisions under conditions of uncertainty. Sea level projections are not fixed predictions. They reflect assumptions about future greenhouse gas emissions, ocean warming, storm intensity, melting ice, and other changing environmental conditions. Different scenarios can produce different estimates, and those estimates are periodically revised as the science changes. Connecticut requires sea level rise estimates to be reevaluated every ten years.[6]

CIRCA has estimated that sea level rise of 20 inches should be expected by 2050. That estimate was not based on either the lowest or highest scenario but reflected an averaging of multiple scenarios using a consensus-based approach. For municipal planning purposes, the significance of the estimate is not only the number itself, but the fact that local plans and regulations must now grapple with changing flood conditions over time.

[6] The first estimates prepared by CIRCA were issued in 2017 and were, in part, based on federal sea level rise estimates from NOAA. The availability or reliability of future federal agency estimates is unknown given that climate change studies and data tracking efforts have been stopped under the Trump administration.

This creates a practical question for coastal municipalities: what planning horizon should be used when evaluating flood risk? A 30-year mortgage is one relevant timeframe for homeowners and lenders, but the useful life of a building may extend well beyond 30 years. If the goal is to protect the coastal housing stock and public infrastructure over the life of buildings and neighborhoods, then planning should also consider longer-term conditions, including potential sea level rise and flood risk through 2100.

Under longer-term scenarios, sea levels may rise several feet by 2100. That possibility does not mean every local regulation should immediately be rewritten around the most severe scenario. It does mean that municipalities should be explicit about the level of risk they are planning for, the timeframe they are using, and the kinds of adaptation strategies they expect to support. A community planning for 2050 may make different regulatory and infrastructure choices than a community planning for 2100.

One possible approach would be to adjust local flood elevation standards upward to reflect sea level rise projections. For example, using CIRCA's 2050 estimate, coastal municipalities could consider local flood elevation standards that are 20 inches higher than those found in current FEMA Flood Insurance Studies. None of the coastal municipalities have chosen to take this approach. Instead, several municipalities have adopted freeboard requirements above BFE. This may be a more administratively practical approach, but it also underscores the need to coordinate freeboard standards with local height, setback, and nonconforming-structure provisions.

Public Act 25-33 also highlights the importance of documenting the scientific basis for local planning and regulatory choices. Many coastal municipalities have adopted practical flood-resilience tools, but local zoning and floodplain provisions do not always clearly identify the sea level rise projections, flood-risk studies, stormwater assumptions, or impervious-cover considerations that inform those standards. Stronger documentation can help municipalities explain why particular freeboard, height, setback, overlay, or nonconforming-structure provisions are needed and how they relate to anticipated future conditions.

This does not mean every municipality must produce its own flood science. Municipal plans and regulations can rely on credible state, federal, university, and regional sources, including projections developed by NOAA, CIRCA, and the University of Connecticut. The value is in connecting those sources to local regulatory choices. When a municipality adopts a freeboard requirement, creates a flood resilience overlay, modifies height standards, or allows setback flexibility for flood-compliant access, the record should make clear how the regulation supports risk reduction under current and future flood conditions.

Public Act 25-33 therefore should not be understood only as a planning requirement. It is also an opportunity to align plans of conservation and development with the local regulatory tools discussed in this report. Municipalities updating their plans can use sea level rise projections and flood-risk science to identify flood-prone neighborhoods, evaluate where hardening in place may be feasible, consider where longer-term transition may be necessary, and determine whether zoning standards create unnecessary barriers to safer property adaptation.

The statute also creates an opportunity for shared learning among municipalities. Connecticut's coastal municipalities are already experimenting with freeboard standards, flexible height limits, setback flexibility, overlay approaches, and alternatives to repeated variance applications. As PA 25-33 is implemented, these local examples can help inform model language, regional guidance, and technical assistance. The goal should not be to impose one uniform coastal zoning rule on every municipality, but to help communities choose tools that fit their local conditions while accounting for a rising and changing coastline.

VI. CONCLUSION

Connecticut's coastal municipalities face a growing and changing flood risk. Sea level rise, higher tides, more intense storms, storm surge, wave action, riverine flooding, and dense existing development along Long Island Sound create risks for homes, neighborhoods, infrastructure, municipal tax bases, and long-term community recovery. These risks are already reflected in flood insurance data. The twenty-four coastal municipalities account for nearly 80 percent of Connecticut's flood insurance policies and approximately 80 percent of the state's flood insurance losses since 1978.

This report finds that coastal municipalities are not passive in the face of these risks. They are already developing and testing local regulatory tools to help property owners and communities adapt. These tools include freeboard standards above FEMA base flood elevation, flexible building height limits, flexible setback standards, and community-wide alternatives to repeated variance applications. Taken together, these approaches show that Connecticut already has a growing body of municipal practice from which other communities can learn.

Freeboard standards are an important first step because they establish a margin of safety above FEMA base flood elevation. Nineteen of the twenty-four coastal municipalities have adopted freeboard standards of one to two feet above BFE for new residential construction. These standards recognize the uncertainty inherent in flood modeling and the limits of relying exclusively on past conditions to plan for future flood risk. However, freeboard standards cannot be considered in isolation. Higher elevation requirements may reduce risk for new or substantially improved structures, but they may also create conflicts with local height limits, story limits, setback requirements, stairs, landings, and nonconforming-structure rules. Freeboard therefore works best as part of a coordinated regulatory framework.

Flexible building height limits address the vertical consequences of flood adaptation. Fourteen coastal municipalities have adopted some form of flexible height standard for flood-prone areas. These approaches vary considerably. Some measure height from BFE or a BFE-related elevation. Some allow incremental height relief only to the extent needed for flood compliance. Some exclude below-BFE or floodable space from story calculations. Others provide special treatment for nonconforming structures or targeted flexibility for specific waterfront uses or development types. This variation shows that municipalities have multiple ways to reduce conflicts between floodplain management objectives and dimensional zoning standards.

Flexible setback standards address the horizontal and site-design consequences of flood adaptation. Ten coastal municipalities have adopted some form of flexible setback standard.

These provisions can help property owners elevate structures, accommodate stairs and landings, move buildings to safer portions of a lot, repair or replace septic systems, or adapt small and nonconforming coastal lots. This is especially important because flood risk may vary across a single property. The safest or most practical location for a structure may not be the location permitted by the existing zoning envelope.

The traditional variance process remains important, but it is poorly suited to neighborhood-scale flood risk. Variances are designed to address unusual hardship affecting individual properties. Coastal flood risk often affects entire neighborhoods with similar exposure, lot constraints, nonconforming conditions, and adaptation needs. Where many properties face the same flood hazard and the same zoning barriers, zoning text amendments, overlay zones, or other community-wide standards provide a clearer, more predictable, and more administratively efficient path than repeated case-by-case variance applications.

The purpose of these tools is not to make flood-prone development less regulated. Regulatory flexibility, by itself, does not reduce future flood damage. Poorly designed flexibility could increase exposure or shift risk to neighboring properties. The goal is more precise: to reduce local barriers that may prevent or discourage property owners from taking reasonable steps to reduce their own risk, while preserving the underlying public purposes of zoning, floodplain management, coastal resource protection, and neighborhood planning.

Local zoning innovation must also fit within a broader planning framework. Some decisions cannot be resolved parcel by parcel or municipality by municipality. Connecticut will need coordinated planning to determine which areas may be suitable for hardening in place, which areas may require long-term transition, which infrastructure should be protected, how natural systems should be restored, and how costs should be shared among property owners and municipal, regional, state, and federal entities. Zoning tools can support these decisions, but they cannot substitute for multi-jurisdictional flood prevention planning.

Public Act 25-33 adds urgency to this work by requiring municipal plans of conservation and development to consider sea level rise projections developed by NOAA, CIRCA, or the University of Connecticut. As municipalities update their plans and regulations, they will need to consider whether existing BFE, freeboard, height, setback, nonconformity, and variance standards are sufficient for the expected life of buildings and neighborhoods. The relevant planning horizon may easily be extended beyond a 30-year mortgage and toward the longer useful life of coastal housing, infrastructure, and community assets.

The next step is not to impose a single statewide zoning answer on every coastal municipality. Connecticut's coastline includes dense urban waterfronts, older small-lot neighborhoods, historic areas, beaches, tidal wetlands, water-dependent uses, critical infrastructure, and varied local development patterns. Different places will require different tools. The immediate opportunity is to learn from the experimentation already underway, identify which approaches are most transferable, provide model zoning language and technical assistance, and accelerate the diffusion of workable practices.

Yet the 24 coastal municipalities are equally affected by flood risk science, sea level rise projections and practical adaptation strategies. Zoning revisions should be based on well- documented flood risks. By relying on science-based flood standards, zoning commissions create objective measures of risk protection that can withstand judicial scrutiny and improve public safety.

Connecticut's coastal municipalities have already begun adapting their regulations to a changing coastline. The challenge now is to make that learning shared, practical, and fast enough to matter.

VII. APPENDICES

Appendix 1: Total FEMA Flood Insurance Policies by Zone: 2026

Municipality or District	FEMA VE Zone Policies	FEMA A Zone Policies	Total FEMA Policies
Branford	9	276	669
Bridgeport	4	223	870
Clinton	3	124	336
Darien	1	177	392
East Haven	12	238	442
East Lyme	5	73	251
Fairfield	17	1,075	1,453
Fenwick, Borough of	1	6	14
Greenwich	7	472	1,103
Groton Long Point Association	5	145	175
Groton, Town of	0	24	59
Groton City of	6	64	227
Guilford	4	143	397
Madison	11	143	309
Milford	44	719	1,767
New Haven	10	216	606
New London	3	22	204
Noank Fire District	3	21	58
Norwalk	5	555	1,402
Old Lyme	13	102	290
Old Saybrook	13	381	814
Stamford	11	359	1,704
Stonington, Borough of	9	49	137
Stonington, Town of	14	248	466
Stratford	9	425	1,031
Waterford	2	68	168
West Haven	4	151	772
Westbrook	8	133	305
Westport	2	557	812
Total Coastal Municipalities	235	7,189	17,233
Total Non-Coastal Municipalities	0	1,570	4,340

Zone VE is a high-risk Coastal High Hazard Area designated by FEMA, representing coastal locations with a 1% or greater annual chance of flooding and an additional hazard from high-velocity storm waves (3 feet or higher). These zones are Special Flood Hazard Areas (SFHAs) where flood insurance is mandatory, and they include base flood elevations (BFEs) derived from detailed hydraulic analyses. "A" zones (Special Flood Hazard Areas) refer to inland high-risk areas with a 1% annual chance of flooding (100-year flood) and include Zone A, AE, A1-A30, AH, AO, AR, & A99. Source: FEMA Database provided by Diane Ifkovic, State NFIP Coordinator, CTDEEP, March 12, 2026

Appendix 2: Minimum Lot Sizes Along the Connecticut Coastline

Minimum Lot Size	Number of Zoning Districts	Percent of Total
5,000 Sq. Ft & Under	18	9.7%
>5,000 to 7,500 Sq. Ft.	16	8.6%
>7,500 to 10,000 Sq Ft.	24	13.0%
>10,000 to 15,000 Sq. Ft.	15	8.1%
>15,000 to 25,000 Sq. Ft.	36	19.5%
>25,000 To 60,000 Sq. Ft.	27	14.6%
>60,000 To 90,000 Sq. Ft.	13	7.0%
>90,000 to 130,000 Sq Ft.	5	2.7%
>130,000 Sq Ft.	3	1.6%
No Minimum Lot Size	28	15.1%
Total Coastal Zones	185	100.0%
Minimum Lot Size of 25,000 Square Feet or Less	109	58.9%

Source: WestCOG analysis of the zoning regulations for 185 zoning districts in the twenty-four coastal municipalities and the six political subdivisions that have zoning authority along the Connecticut coastline, March 30, 2026.

Appendix 3: Variance Standards Applied to Coastal Flood Zones in Connecticut

Variance Standards	Darien	Greenwich	Norwalk	Stamford	Westport	Fairfield	Bridgeport	Stratford	Milford	West Haven	New Haven	East Haven	Branford	Guilford	Madison	Clinton	Westbrook	Old Saybrook	Old Lyme	East Lyme	Waterford	New London	Groton	Stonington	Total Yes
Variance includes notice of higher flood insurance rates	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	22
Stipulate a variance increases insurance rates of $25 for $100 in insurance coverage	Yes	Yes	No	Yes	No	Yes	Yes	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	17
Variance Procedure for Lots less than 1/2 acre for new construction	Yes	Yes	No	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	Yes	No	Yes	No	No	Yes	No	No	No	13
Establish conditions on issuance of Variance in flood zones	Yes	Yes	No	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	20
Stipulated variance conditions specified	11	12	0	11	11	0	11	11	11	12	11	11	11	11	11	11	11	12	11	12	5	0	0	12	19
Prohibit variances in floodway if it would result in flood level increase	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	22
Special variance rules for buildings listed on the National Register	Yes	Yes	No	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	20
Have specific variance standards unique to National Register properties	Yes	Yes	No	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	19
Exempt National Register properties from some variance considerations	Yes	Yes	No	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	19
Stipulate functional dependent use variance	No	Yes	No	Yes	Yes	Yes	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	No	Yes	No	Yes	Yes	15
A determination that failure to grant variance would result in exceptional hardship	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	22
A determination that granting a variance shall not result in increased flood heights, additional threats to public safety, extraordinary public expense, creation of nuisances, fraud or victimization of public or conflict with existing local laws or ordinances	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Partial	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	21
A showing of good and sufficient cause for granting variance	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	22
Total Yes	11	12	2	10	11	7	9	9	9	10	10	10	12	11	11	11	11	12	10	10	9	5	10	10	

Note: Norwalk variance procedures are also found elsewhere (more research needed). West Haven has a limited definition of the determination concerning increased flooding. East Haven has a unique definition concerning what is exceptional hardship related to the property owner OR the adjoining property with the hardship not being shared with adjoining property owners