Date: 2/29/2024

Recommendation 1: Increase Freeboard Requirement

Purpose: Increase protection from flood hazard events both inland and along coastal areas. Respond to a documented increase in storm frequency and severity and projected sea level rise.

Description: The existing regulations establish a base flood elevation plus 1 foot for the lowest floor of new construction and other building features in flood hazard areas. This recommendation would increase the requirement to 3 feet above base flood elevation (BFE) to provide additional "freeboard" to better protect structures during storm events. This recommendation also prohibits the use of structural fills to achieve the elevation requirement in all flood hazard areas. The use of structural fills is currently prohibited only in the VE and Coastal AE flood zones.

Geographic Extents: All areas within Flood Hazard Overlay District.

Potential Impacts: An increase in the freeboard requirement is likely to add cost to the construction of new structures and the improvement of existing structures that are required to comply with the requirement. This may act as a deterrent to new construction, reconstruction, or investment in flood hazard areas that are subject to the base flood elevation construction standards. The additional freeboard requirement will also be visually impactful to existing at-grade properties adjacent to or in proximity of structures constructed or elevated above the freeboard. The expansion of the prohibition on the use of structural fills to the entire AE zone and X zone will be restrictive to the type of development in those zones.

Context: According to the Town's Hazard Mitigation Plan, there are 1,381 homes located within the 1% annual chance floodplain (100-year floodplain) in Stonington. A total of 140 of these properties are located within Zone VE, and nearly 1,000 properties are located within Zone AE and are vulnerable to coastal flooding.

Sea level rise, coupled with more severe and frequent storm and flooding events exposes properties in coastal areas to more risk than in the past. The Fifth National Climate Assessment (conducted by the US Global Change Research Program) projects sea level rise of between 9 and 13 inches by 2050 and between 1 foot and 6.6 feet by 2100. The report also states that "there is high confidence and it is very likely that the probability of minor, moderate, and major coastal flooding will occur 5–10 times more often by 2050". Research conducted by UCONN (O'Donnell, 2019) indicates that an intermediate level of Sea Level Rise could result in approximately 20 inches of sea level rise along Connecticut's shore by 2050. The Connecticut Institute for Resilience and Climate Adaptation (CIRCA) recommends that Connecticut plan for sea level rise of up to 20 inches by 2050. CIRCA also estimates that the return rate of 100-year floods at the eastern end of Long Island Sound will be 8 times more frequent than currently experienced. Stonington's Coastal Resilience Plan (2017) recommends that floodplain policies and regulations be amended to include flood resilience considerations for new construction.

Most coastal communities in Connecticut have a BFE or BFE+1 foot freeboard requirement. Eighteen communities have a BFE+2 feet freeboard requirement including New London and Old Saybrook. Two communities in Connecticut have a BFE+4 feet freeboard requirement. A BFE+3 feet freeboard is required

by multiple cities outside of Connecticut including New York City, Miami Beach, Norfolk, VA, Charleston, SC, and Galveston, TX.

Recommended Zoning Amendments:

- Amend Section 9.3.10.A.3 (materials and utility equipment) to increase freeboard requirement from 1 foot to 3 feet.
- Amend Section 9.3.10.A.8 (manufactured homes) to increase freeboard requirement from 1 foot to 3 feet.
- Amend Section 9.3.10.A.13 (Aboveground Storage Tanks) to increase freeboard requirement from 1 foot to 3 feet.
- Amend Section 9.3.10.B.1 (Residential Construction) to increase freeboard requirement from 1 foot to 3 feet.
- Amend Section 9.3.10.B.2 (Non-Residential Construction) to increase freeboard requirement from 1 foot to 3 feet.
- Amend Section 9.3.10.B.3.b (mechanical equipment) to increase freeboard requirement from 1 foot to 3 feet.
- Amend Section 9.3.10.C.2 (VE and Coastal AE Zones) to increase freeboard requirement from 1 foot to 3 feet.
- Relocate Section 9.3.10.C.5 to Section 9.3.10.A General Standards so as to prohibit the use of fill as a structural support in all flood zones (not just the VE and Coastal AE zones).

Date: 1/4/2024

Recommendation 2: Remove Single-Family Home Exemption from CAMOD

Purpose: Increase regulation of development in coastal areas to better protect coastal resources and protect development from coastal hazards.

Description: Construction of an individual conforming single-family residential structures are currently exempt from Coastal Site Plan Review except in or within 100 feet of the following coastal areas: tidal wetlands, coastal bluffs and escarpments, and beaches and dunes. Removal of this exemption would allow for the review of all development in coastal areas and better protect those areas from development.

Geographic Extents: All areas within the Coastal Area Management Overlay District (CAMOD)

Potential Impacts: The requirement of a coastal site plan review for single-family homes may add cost to the development of a home and may lengthen the approval process. However, much of the information required for a coastal site plan review is also required for zoning permits and site plans.

Context: The Connecticut Coastal Management Act allows but does not require specific activities such as the construction of single-family homes to be exempt from Coastal Site Plan review.

Recommended Zoning Amendments:

- Eliminate Section 9.2.9.D, which exempts single-family residences from coastal site plan review.

Date: 2/29/2024

Recommendation 3: Adopt a Transfer of Development Rights regulation

Purpose: Provide incentives for shifting development away from coastal high hazard areas.

Description: This recommended amendment would enable the transfer of development rights from VE and Coastal AE flood hazard zones (sending areas) to areas outside of flood hazard areas (receiving areas). The development rights that may be transferred include buildable area or dwelling units.

Geographic Extents: VE and Coastal AE areas are sending areas. Areas outside of the GB-130, RR-80, Flood Hazard Overlay District, Groundwater Protection Overlay District, islands, and other specified areas are the receiving areas.

Potential Impacts: Increase in residential density and/or lot coverage in the receiving areas.

Context: According to the Town's Hazard Mitigation Plan, a total of 140 properties in Stonington are located within Zone VE and nearly 1,000 properties are located within Zone AE and are vulnerable to coastal flooding.

Transfer of development rights is enabled as a zoning tool under Connecticut General Statutes Section 8-2(c)(4), which states that zoning 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".

Avon, Connecticut has a transfer of development rights zoning regulation that allows a transfer of development rights from priority areas for preservation (sending areas) to areas identified for multi-family development (receiving areas). The Town of Windsor, CT has a TDR regulation for both residential density and impervious coverage. The sending and receiving areas are not strictly defined.

Recommended Zoning Amendments:

- Add new section, Section 9.3.12 Transfer of Development Rights to the Flood Hazard Overlay District Regulations. (see next page)
- Add "Buildable Area" definition to Section 20 as follows:

> **Buildable Area:** The total area of a lot that is permitted to be covered by impervious surface, which is equal to the lot area multiplied by the permitted lot coverage, minus non-infringement areas.

9.3.12 Transfer of Development Rights

The purpose of this section is to provide an incentive to shift development away from coastal high hazard areas. This is accomplished through enabling the transfer of development rights from coastal high hazard areas (sending areas) to areas outside of flood hazard areas and other environmentally sensitive areas (receiving areas).

A. Sending and Receiving Areas
    1. Sending areas shall include properties located partially or entirely within the VE or Coastal AE flood hazard zones.
B. Receiving areas shall be all areas in Stonington excluding lots located partially or entirely:
    1. in the GB-130 and RR-80 districts;
    2. in the Flood Hazard Overlay District;
    3. in the Groundwater Protection Overlay District;
    4. on an island;
    5. on Latimer Point, Osbrook Point, Lords Point, or Wamphassuc Neck.
C. Rights Eligible for Transfer
    1. Buildable Area: The total buildable area permitted on the sending property may be transferred to one or more receiving properties. The maximum amount of buildable area that may be transferred to a receiving property shall be limited to 50% above the lot coverage permitted in the zoning district of the receiving property or up to 80% lot coverage, whichever is less. An increase in the buildable area does not allow development where not permitted by these regulations such as in required setbacks or non-infringement areas.
    2. Dwelling Units: The number of dwelling units permitted on the sending property may be transferred to a receiving property in the AHD, GDD, IHRD, NDD, and PV-5 districts, or for Open Space Developments, Residential Mixed-Use, and the Rehabilitation of Existing Buildings in districts where permitted. The number of dwelling units that may be received by a receiving property is limited to 50% of the maximum number of dwelling units permitted by the regulations for each district or use so as to result in an increase of no more than 50% above the maximum number of units permitted in each district or for each use.
D. Restrictions: Restrictions on the transfer of development rights shall include but not be limited to:
    1. Only full transfers of development rights from the sending property are permitted. Partial transfers of a share of the buildable area or a fraction of dwelling units is not allowed.
    2. Either buildable area or dwelling units may be transferred from a sending property. Both buildable area and dwelling units are not permitted to be transferred from a sending property.
E. Permit Requirements:
    1. All applications for properties receiving development rights that will be applied to an improvement or development proposal requiring a Zoning Permit or Site Plan Application shall require a Special Use Permit.
    2. An applicant must accurately define the sending area by preparing a survey meeting the requirements of a Class A-2 survey.
    3. In lieu of the actual ownership of land in either the receiving zone or the sending zone, an applicant may demonstrate to the Commission that they have an option to purchase such land or rights.
    4. In all instances, the owners of all properties in both the sending and receiving areas shall be required to sign all applications submitted to the Commission.
F. Documentation in the Stonington Land Records: Prior to the recording of the permit, the applicant must record in the office of the Town Clerk, notice of restriction indicating that no development of the sending property is possible. Restrictions shall be established that prevent the future development of the property except that land in the sending area may be sold and utilized for agricultural purposes or open space. This recorded notice shall be accompanied by the survey map, which accurately defines the area that is subject to the restriction. Such documents shall be reviewed and approved by the Town Attorney. Once recorded,

Date: 2/29/2024

Recommendation 4: Accommodate Required Increases in Building Elevation

Purpose: The elevation of structures as required by Flood Hazard regulations requires additional flexibility in the zoning regulations to accommodate features that may otherwise be prohibited by the regulations.

Description: Building features such as external stairs are not permitted in required setbacks, even if necessitated by elevation of a structure as required by the Flood Hazard regulations. The provision of design exceptions would allow for flexibility in the standards when necessitated by the elevation of a structure to comply with the Flood Hazard regulations.

Geographic Extents: Flood Hazard Overlay District

Potential Impacts: May result in building features such as external stairs being located closer to the roadway or adjacent properties.

Context: Elevated structures commonly rely upon exterior stairs to provide first floor access from grade.

Recommended Zoning Amendments:

- Add new Section 9.3.10.D Design Exceptions as follows:

D. Design Exceptions. The following design exceptions are permitted for structures that are constructed above the base flood elevation as required by Section 9.3.10 of these regulations:

1. Exterior stairs and ADA compliant ramps may encroach upon required setbacks by a maximum of 5 feet except that no stairs or ramp shall encroach upon an adjacent property or right-of-way.

Date: 1/4/2024

Recommendation 5: Expand Non-Infringement Area Regulations

Purpose: Expand protections for riparian zones and other waterbodies to better protect those resources, the associated habitats, and water quality of the Long Island Sound.

Description: The existing regulations prohibit new construction and substantial improvements within 100 feet of the Coastal Jurisdiction Line. A 100-foot non-infringement area is required between all uses and wetlands, streams, ponds, and other significant resources in the GBR-130, RC-120, HI-60 (development abutting the Pawcatuck River). A 50-foot non-infringement area is required between all uses and wetlands, streams, ponds, and other significant resources in the IHRD and NDD. The intent of the recommendation is to expand the requirement of non-infringement areas to other districts across the Town with the exception of districts where development in close proximity of waterways is commonplace.

Geographic Extents: New non-infringement regulations would be applicable to the RR-80, RA-40, RM-20, RM-15, RH-10, RA-20, RA-15, CS-5, LS-5, GC-60, TC-80, M-1, LI-130, GDD, and AHD zoning districts.

Potential Impacts: Multiple properties/structures will become non-conforming thus limiting expansion of those properties within non-infringement areas. The improvement of existing structures that does not expand ground area coverage within the non-infringement area would be permitted.

Context: The State of Connecticut requires that communities take action to protect the water quality of the Long Island Sound and waterbodies with connections to the Sound. WestCOG's "The Case for Riparian Corridor Protection" documents the importance of protecting riparian zones and their role in the water quality of the Long Island Sound. In other states, such as Massachusetts, the Massachusetts Rivers Act establishes a 200-foot-wide riparian zone on each side of rivers and streams that restricts development in those areas with the exception of single-family homes and associated accessory uses. The riparian zone is 25 feet in a small number of urban communities.

Recommended Zoning Amendments:

- Organize existing and new non-infringement regulations in a new section: Section 12.12 Non-Infringement Areas. Relocate non-infringement regulations from Section 7.2.1, 7.3.1, 8.10.1.G, 10.1.7.G, and 10.3.7.C.3 to Section 12.12: (see next page)
- Revise the definition of non-infringement area in Section 20 to read as follows:

> Non-Infringement Area: The area adjoining a waterbody where uses are restricted as specified by Section 12.12 of these Regulations.

12.12 Non-Infringement Areas

These regulations establish non-infringement areas along waterbodies in the Town to protect the water quality of those bodies and the habitats associated with them.

12.12.1 Applicability

A. Non-infringement areas shall be provided adjacent to brooks, streams, rivers, ponds, lakes, inland and coastal wetlands, tidal marsh, estuaries, and ocean waters.
B. Intermittent streams and brooks shall not be subject to these regulations.
C. Non-infringement areas are required in the districts identified in Section 12.12.3 below.

12.12.2 Permitted and Prohibited Uses

All uses are prohibited in the non-infringement area with the exception of boat and yaht facilities, public trails, greenways, water quality restoration activities, and agricultural activities permitted by Connecticut General Statutes Section 22a-40. The non-infringement area may not be disturbed, filled, or improved except in support of a permitted use.

12.12.3 Existing Uses

Uses and structures within the required non-infringement area existing as of [insert date of adoption] shall be non-conforming to these regulations and may not be expanded in ground area.

12.12.4 Non-Infringement Distance

The distance of the non-infringement area shall be measured from the mean annual high-water line or from the visible edge of the wetland or waterbody if a mean annual high water line cannot be determined.

District	Non-Infringement Area Distance (ft)	District	Non-Infringement Area Distance (ft)
RR-80	50	LS-5	50
RA-40	50	GC-60	50
RM-20	50	TC-80	50
RM-15	50	M-1	50
RH-10	50	LI-130	50
RA-20	50	HI-60	100
RA-15	50	IHRD	50
GBR-130	100	NDD	50
RC-120	100	GDD	50
CS-5	50	AHD	50

12.12.5 Setbacks from the Connecticut Coastal Jurisdiction Line

New construction and substantial improvements may be subject to a setback from the Connecticut Coastal Jurisdiction Line as specified in Section 9.3.10.C.

Date: 1/4/2024

Recommendation 5: Expand Non-Infringement Area Regulations

Purpose: Expand protections for riparian zones and other waterbodies to better protect those resources, the associated habitats, and water quality of the Long Island Sound.

Description: The existing regulations prohibit new construction and substantial improvements within 100 feet of the Coastal Jurisdiction Line. A 100-foot non-infringement area is required between all uses and wetlands, streams, ponds, and other significant resources in the GBR-130, RC-120, HI-60 (development abutting the Pawcatuck River). A 50-foot non-infringement area is required between all uses and wetlands, streams, ponds, and other significant resources in the IHRD and NDD. The intent of the recommendation is to expand the requirement of non-infringement areas to other districts across the Town with the exception of districts where development in close proximity of waterways is commonplace.

Geographic Extents: New non-infringement regulations would be applicable to the RR-80, RA-40, RM-20, RM-15, RH-10, RA-20, RA-15, CS-5, LS-5, GC-60, TC-80, M-1, LI-130, GDD, and AHD zoning districts.

Potential Impacts: Multiple properties/structures will become non-conforming thus limiting expansion of those properties within non-infringement areas. The improvement of existing structures that does not expand ground area coverage within the non-infringement area would be permitted.

Context: The State of Connecticut requires that communities take action to protect the water quality of the Long Island Sound and waterbodies with connections to the Sound. WestCOG's "The Case for Riparian Corridor Protection" documents the importance of protecting riparian zones and their role in the water quality of the Long Island Sound. In other states, such as Massachusetts, the Massachusetts Rivers Act establishes a 200-foot-wide riparian zone on each side of rivers and streams that restricts development in those areas with the exception of single-family homes and associated accessory uses. The riparian zone is 25 feet in a small number of urban communities.

Recommended Zoning Amendments:

- Organize existing and new non-infringement regulations in a new section: Section 12.12 Non-Infringement Areas. Relocate non-infringement regulations from Section 7.2.1, 7.3.1, 8.10.1.G, 10.1.7.G, and 10.3.7.C.3 to Section 12.12: (see next page)
- Revise the definition of non-infringement area in Section 20 to read as follows:

> Non-Infringement Area: The area adjoining a wetland waterbody where activities and uses are restricted as specified by Section 12.12 of these Regulations.

12.12 Non-Infringement Areas

These regulations establish non-infringement areas along waterbodies in the Town to protect the water quality of those bodies and the habitats associated with them.

12.12.1 Applicability

A. Non-infringement areas shall be provided adjacent to brooks, streams, rivers, ponds, lakes, inland and coastal wetlands, tidal marsh, estuaries, and ocean waters.
B. Intermittent streams and brooks shall not be subject to these regulations unless identified as a wetland.
C. Non-infringement areas are required in the districts identified in Section 12.12.3 below.

12.12.2 Permitted and Prohibited Uses

All uses are prohibited in the non-infringement area with the exception of boat and yacht facilities, public trails, greenways, water quality restoration activities, and agricultural activities permitted by Connecticut General Statutes Section 22a-40. The non-infringement area may not be disturbed, filled, or improved except in support of a permitted use.

12.12.3 Existing Uses

Uses and structures within the required non-infringement area existing as of [insert date of adoption] shall be non-conforming to these regulations and may not be expanded in ground area.

12.12.4 Non-Infringement Distance

The distance of the non-infringement area shall be measured from the mean annual high-water line or from the visible edge of the wetland or waterbody if a mean annual high water line cannot be determined.

District	Non-Infringement Area Distance (ft)	District	Non-Infringement Area Distance (ft)
RR-80	50	LS-5	50
RA-40	50	GC-60	50
RM-20	50	TC-80	50
RM-15	50	M-1	50
RH-10	50	LI-130	50
RA-20	50	HI-60	100
RA-15	50	IHRD	50
GBR-130	100	NDD	50
RC-120	100	GDD	50
CS-5	50	AHD	50

12.12.5 Setbacks from the Connecticut Coastal Jurisdiction Line

New construction and substantial improvements may be subject to a setback from the Connecticut Coastal Jurisdiction Line as specified in Section 9.3.10.C.

Date: 1/4/2024

Recommendation 6: Require a setback from the Coastal Jurisdiction Line in all AE zone flood hazard areas

Purpose: Protect properties from coastal flood hazards and protect coastal resources from development.

Description: The proposed amendment would require a 100-foot setback for all new construction or substantial improvements from the Coastal Jurisdiction Line for properties in the anywhere in the AE flood zone. The zoning regulations currently require a 100-foot setback from the Coastal Jurisdiction Line for all new construction or substantial improvements in the VE and Coastal AE zones. Non-coastal AE zones are currently exempt from this requirement.

Geographic Extents: AE Flood Hazard Zones

Potential Impacts: The amendment would render multiple properties located within 100 feet of the coastal jurisdiction line, that are located in inland AE zones, non-conforming with the regulations and would result in limitations on the expansion of structures on those properties.

Context: In Connecticut, there is no statewide minimum development setback requirement from coastal resources, however, most coastal towns have such setbacks in their zoning regulations. Many states across the country have statewide mandatory setback requirements from the shoreline including Rhode Island, which requires that structures be set back a minimum of 25 to 50 feet from the inland boundary of a coastal feature. Maine requires a setback of 25 to 75 feet from the shoreline for all development except for water-dependent uses. New Hampshire requires a minimum setback of 50 feet from the high tide line in all coastal communities. New Jersey requires single-family homes to be setback a minimum of 150 feet from the mean high-water line of and tidal waters or the landward limit of any beach or dune.

Recommended Zoning Amendments:

- Add new section, Section 9.3.10.D Other Flood Hazard Areas

Section 9.3.10.D: Other Flood Hazard Areas

All new construction or substantial improvement located in an AE flood zone (in addition to Coastal AE zones specified in Section 9.3.10.C) shall be located a minimum of 100 feet landward of the Connecticut Coastal Jurisdiction Line as defined in CGS 22a-359 as amended by Public Act 12-101.

Date: 1/4/2024

Recommendation 7: Update the Flood Hazard Overlay District regulations to ensure consistency with state and federal guidelines.

Purpose: Ensure that the zoning regulations require best practices in accordance with both CTDEEP guidance and the National Flood Insurance Program (NFIP) for the purpose of protecting residents and development from flooding hazards.

Description: Section 9.3 of Stonington's zoning regulations regulates development in all flood hazards across the Town. The regulations are comprehensive but are not up to date with recent changes to state building code and may not be sufficient as currently written to adequately address increased risk posed by a changing climate. The recommended amendments build upon the existing Flood Hazard Overlay District and supplement those regulations to ensure consistency with the best practices documented in CT DEEP's 2018 Model Floodplain Management Regulations for Coastal Communities. These recommended amendments are based upon the existing BFE+1 foot freeboard requirement. If the freeboard requirement is increased (as proposed in Recommendation 1) the 1.0-foot freeboard requirement in these recommended amendments would need to be revised to match any new freeboard requirement approved.

Geographic Extents: Flood Hazard Overlay District, which is comprised of all flood hazard areas designated on FIRM maps.

Potential Impacts: The recommended amendments place additional requirements on development in flood hazard areas but will not prohibit development that is currently permitted. The recommended amendments also authorize and specify procedures for enforcement, which may result in stricter enforcement of the flood hazard regulations.

Context: Sea level rise, coupled with more severe and frequent storm and flooding events exposes properties in flood hazard areas to more risk than in the past. The Fifth National Climate Assessment (conducted by the US Global Change Research Program) projects sea level rise of 11 inches (intermediate projection) by 2050. Research conducted by UCONN (O'Donnell, 2019) indicates that an intermediate level of Sea Level Rise could result in approximately 20 inches of sea level rise along Connecticut's shore by 2050. The Connecticut Institute for Resilience and Climate Adaptation (CIRCA) recommends that Connecticut plan for sea level rise of up to 20 inches by 2050. Stonington's Coastal Resilience Plan (2017) recommends that floodplain policies and regulations be amended to include flood resilience considerations for new construction.

In 2018 the Connecticut Office of the State Building Inspector (OSBI) amended the current state building code to adopt the 2015 International Residential Code (IRC). The adoption of the 2015 IRC has made significant changes to the elevation and construction requirements for new construction and substantially improved structures in both coastal and inland floodplains, which differ slightly from the standards currently contained in Stonington's Flood Hazard Overlay District regulations. These amendments are documented in CT DEEP's 2018 Model Floodplain Management Regulations for Coastal Communities.

Recommended Zoning Amendments:

- Change all references to "all new construction or substantial improvement" to "all new construction, substantial improvement and repair to structures that have sustained substantial damage". When structures inside the Flood Hazard Area are damaged, National Flood Insurance Program requires that the structure be brought into compliance with current local floodplain management standards.
- Add Section 9.3.5 Standards for Watercourses without Established Base Flood Elevations, Adopted Floodways, and/or Flood Mapping (and renumber proceeding sections) as follows:

9.3.5 Standards for Watercourses without Established Base Flood Elevations, Adopted Floodways, and/or Flood Mapping.

A. The Planning and Zoning Commission shall require base flood elevation (BFE) data be provided with any application for new construction, substantial improvement, repair to structures which have sustained substantial damage or other development in Zone A without a FEMA-published BFE (un-numbered A Zone). A registered professional engineer must determine the BFE in accordance with accepted hydrologic and hydraulic engineering practices and document the technical methods used. Studies, analyses and computations shall be submitted in sufficient detail to allow thorough review and approval. The Planning and Zoning Commission shall obtain, review and reasonably utilize any BFE and floodway data available from a federal, state or other source, including data developed for subdivision proposals, as criteria for requiring that new construction, substantial improvements, repair to structures which have sustained substantial damage or other development in un-numbered A Zones on the community's Flood Insurance Rate Map (FIRM) meet the standards in Section 9.3.6 and Section 9.3.10. If no BFE can be determined, the lowest floor, including basement, must be elevated to 3 feet above the highest adjacent grade next to the structure.

B. When BFEs have been determined within Zone AE on the Town's FIRM but a regulatory floodway has not been designated, the Planning and Zoning Commission must require that no new construction, substantial improvements, repair to structures which have sustained substantial damage or other development, including fill, shall be permitted which will increase the water surface elevation of the base flood more than 1.0 foot at any point within the community when all existing and anticipated development is considered cumulatively with the proposed development.

C. The Planning and Zoning Commission may request floodway data of an applicant for watercourses without FEMA-published floodways. When such data is provided by an applicant or whenever such data is available from any other source (in response to the municipality's request or not), the community shall adopt a regulatory floodway based on the principle that the floodway must be able to convey the waters of the base flood without increasing the water surface elevation more than 1.0 foot at any point within the community.

D. The Planning and Zoning Commission shall obtain, review and reasonably utilize any BFE and floodway data available from a federal, state or other source, as criteria for requiring that new construction, substantial improvements, repair to structures which have sustained substantial damage or other development in any area of potential, demonstrable or historical flooding within the community meet the standards in Section 9.3.6 and Section 9.3.10.

- Relocate Section 9.3.7 to Section 9.3.10.A and renumber that section accordingly. Section 9.3.7 is a general standard for development and is more appropriate as a subsection of 9.3.10.A.
- Update Section 9.3.9 Duties and Responsibilities of the Planning and Zoning Commission to specifically designate the Planning and Zoning Commission as the authority to administer, implement, and enforce the regulations. Add additional duties specified in the model floodplain management regulations as follows:

9.3.9 Duties and Responsibilities of the Planning and Zoning Commission

The Planning and Zoning Commission is hereby appointed to administer, implement and enforce the provisions of this regulation. The duties of the Commission or its designated agent shall include but not be limited to:

A. Review all permit applications for completeness, particularly with the requirements of Section 9.3.6.
B. Review all permit applications to determine whether the proposed development and building sites will be reasonably safe from flooding.
C. Review all permit applications to ensure that the permit requirements of this regulation have been satisfied.
D. Review all permit applications to ensure that all necessary federal and state permits have been received. Require that copies of such permits be provided and maintained on file with the permit application. Such permits include, but are not limited to, Wetlands Permit, Coastal Area Management (CAM) Permit, Water Diversion Permit, Dam Safety Permit, and Army Corps of Engineers 401 and 404 Permits.
E. Notify the regional planning agency and affected municipality at least thirty-five (35) days prior to a public hearing if any change of regulation or use of a flood zone will affect an area within five hundred (500) feet of another municipality.
F. Notify the adjacent communities and the Connecticut Department of Energy and Environmental Protection (CTDEEP), Land and Water Resources Division, prior to any alteration or relocation of a watercourse, and submit evidence of such notification to the Federal Emergency Management Agency.
G. Ensure that maintenance is provided within the altered or relocated portion of said watercourse so that the flood carrying capacity is not diminished.
H. Obtain, record and maintain the elevation (in relation to mean sea level) of the lowest floor (including basement) of all new construction, substantial improvement or repair to a structure that has sustained substantial damage.
I. Obtain, record and maintain the elevation (in relation to mean sea level) to which all new construction, substantial improvement or repair to a structure that has sustained substantial damage has been flood proofed.
J. In coastal high hazard areas (VE and Coastal AE Zones), obtain, record and maintain the elevation of the bottom of the lowest horizontal structural member for all new construction, substantial improvement or repair to a structure that has sustained substantial damage.
K. When flood-proofing is utilized for a particular structure, the Planning and Zoning Commission shall obtain certification from a registered professional engineer or architect, in accordance with Section 9.3.10.B.2.

9.3.9 Duties and Responsibilities of the Planning and Zoning Commission (continued)

L. Where interpretation is needed as to the exact location of boundaries of the special flood hazard area (for example, where there appears to be a conflict between a mapped boundary and actual field conditions) the Planning and Zoning Commission shall make the necessary interpretation utilizing any data available to render a decision. The person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation as provided in this regulation.

M. Require the applicant to provide base flood elevation data for all proposed development, including manufactured home parks and subdivisions.

N. When base flood elevation data or floodway data have not been provided in accordance with Section 9.3.3, 9.3.4, and 9.3.6, the Planning and Zoning Commission shall obtain, review and reasonably utilize any base flood elevation and floodway data available from a federal, state or other source in order to administer the provisions of this regulation.

O. In Coastal High Hazard Areas (VE and Coastal AE Zones), certification shall be obtained from a registered professional engineer or architect that the structure is designed to be securely anchored to adequately anchored pilings or columns in order to withstand velocity waters and hurricane wave wash, in accordance with Section 9.3.10.C.

P. In Coastal High Hazard Areas (VE and Coastal AE Zones), the Planning and Zoning Commission shall review plans for adequacy of breakaway walls, in accordance with Section 9.3.10.C.

Q. All records pertaining to the provisions of this regulation shall be obtained and maintained in the Planning Department office for public inspection.

R. Upon completion of the permitted development and prior to issuance of a Certificate of Occupancy (CO), necessary as-built surveys (prepared by a Connecticut Licensed Professional as per Connecticut State Statutes) and engineering and architectural certifications shall be provided to the Planning and Zoning Commission demonstrating compliance with the approved plans and standards set forth in Section 9.3.6.

- Replace Section 9.3.10.A.3 with the following to ensure conformance with FEMA design guidelines:

3. New construction, substantial improvements, and repair to structures that have sustained substantial damage shall be constructed with materials and utility equipment that are flood-damage resistant and conform to the provisions of FEMA Technical Bulletin 2, Flood Damage-Resistant Material Requirements. This includes, but is not limited to, flooring, interior and exterior walls, wall coverings and other materials installed below the BFE plus 1.0 foot.

- Replace Section 9.3.10.A.4 with the following to provide specific guidance on the location and installation of mechanical equipment:

> 4. The bottom of all electrical, heating, plumbing, ventilation and air conditioning equipment, appliances, fixtures and components, HVAC duct work and duct systems, and any other utility service equipment, facilities, machinery, or connections servicing a structure shall be elevated 1.0 foot above the BFE. This includes, but is not limited to, furnaces, oil or propane tanks, air conditioners, heat pumps, hot water heaters, ventilation duct work, washer and dryer hook-ups, electrical junction boxes, and circuit breaker boxes. Systems, fixtures, equipment and components shall not be mounted on or penetrate through breakaway walls intended to fail under flood loads. Connections or other equipment that must be located below the BFE plus 1.0 foot elevation are permitted only when no other elevation alternative is available and provided they are designed and installed to prevent water from entering or accumulating within the components and to resist hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during the occurrence of the base flood event. Electrical wiring systems that must be located below the BFE plus 1.0 foot shall conform to the standards for wet locations.

- Replace Section 9.3.10.A.9 with the following to provide a more complete description of the required compliance:

> 9. A structure or development already in compliance with this regulation shall not be made non-compliant by any alteration, modification, repair, reconstruction or improvement and must also comply with other applicable local, state, and federal regulations. No structure or land shall hereafter be located, extended, converted, modified or structurally altered without full compliance with the terms of this regulation and other applicable regulations.

- Add new Section 9.3.10.A.17 to address underground tanks:

> 17. Underground tanks shall be anchored to prevent flotation, collapse and lateral movement under conditions of the base flood. Anchored tanks must have the top of the fill pipe located at least 1.0 feet above the BFE and have a screw fill cap that does not allow for the infiltration of flood water.

- Add new Section 9.3.10.A.18 to stipulate noticing requirements:

> 18. In any portion of a watercourse that is altered or relocated, the flood carrying capacity must be maintained. Notice shall be provided to adjacent communities and the Connecticut Department of Energy and Environmental Protection (DEEP), Land and Water Resources Division prior to any alteration or relocation of a watercourse.

- Replace Section 9.3.10.B with the following to provide standards on the location and installation of mechanical equipment and to reference the required FEMA Floodproofing Certificate:

B. Specific Standards. In all areas of Special Flood Hazard Zone A and AE, where base flood elevation data has been provided, as set forth in Sections 9.3.3 and 9.3.4, the following provisions are required:

1. Residential Construction. All new construction, substantial improvements, and repair to structures that have sustained substantial damage which are residential structures shall have the bottom of the lowest floor, including basement, elevated one (1.0) foot above the base flood elevation (BFE). Electrical, plumbing, machinery or other utility equipment that service the structure must be elevated one (1.0) foot above the BFE.
2. Non-Residential Construction. All new construction, substantial improvements, and repair to structures that have sustained substantial damage which are commercial, industrial or nonresidential structures shall:
    a. Have the bottom of the lowest floor, including basement, elevated 1.0 foot above the base flood elevation (BFE); or
    b. In lieu of being elevated, non-residential structures may be dry floodproofed to one 1.0 foot above the BFE provided that together with all attendant utilities and sanitary facilities the areas of the structure below the required elevation are watertight with walls substantially impermeable to the passage of water, and provided that such structures are composed of structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effects of buoyancy. A registered professional engineer or architect shall review and/or develop structural design specifications and plans for the construction and shall certify that the design and methods of construction are in accordance with acceptable standards of practice for meeting the provisions of this section. Such certification shall be provided to the Planning and Zoning Commission on the FEMA Floodproofing Certificate, Form 81-65.
    c. Electrical, plumbing, machinery or other utility equipment that service the structure must be elevated 1.0 foot above the BFE.

- Replace Section 9.3.10.B.3 with the following to provide more specific design guidance:

3. Elevated Buildings. All new construction, substantial improvements, or repair to structures that have sustained substantial damage, whether residential or nonresidential, that include fully enclosed areas formed by a foundation and other exterior walls shall have the lowest floor elevated to 1.0 foot above the base flood elevation (BFE). The elevated building shall be designed to preclude finished living space below the lowest floor and be designed to allow for the entry and exit of flood waters to automatically equalize hydrostatic flood forces on exterior walls (wet flood-proofing). Designs for complying with this requirement must either be certified by a registered professional engineer or architect as meeting the requirements of ASCE 24 Section 2.6.2.2, or meet the following minimum criteria listed below:

a. Provide a minimum of two openings (hydraulic flood vents) having a total net area of not less than one square inch for every one square foot of enclosed area subject to flooding. The enclosed area is measured on the exterior of the enclosure walls. These hydraulic openings must be located on at least two different exterior walls of each enclosed area. If the structure has more than one enclosed area, openings must be installed in the exterior walls of each enclosed area so that flood waters can enter directly from the outside;
b. The bottom of all openings shall be no higher than 1.0 foot above the higher of either the final interior grade or floor elevation, or the finished exterior grade adjacent to the outside of the foundation wall. At least one entire side of the structure's fully enclosed area must be at or above grade. Fill placed around the foundation walls must be graded so that the elevation inside the enclosed area is equal to or higher than the adjacent outside elevation on at least one side of the building. The finished floor of the enclosed area shall be no lower than the bottom of the foundation openings. The foundation slab of a residential structure, including the slab of a crawlspace, must be set equal to the outside finished grade on at least one side of the building;
c. The openings may be equipped with screens, louvers, valves or other coverings or devices provided they permit the automatic entry and exit of flood waters in both directions without any external influence or control such as human intervention, including the use of electrical and other non-automatic mechanical means. These coverings must not block or impede the automatic flow of floodwaters into and out of the enclosed area. Other coverings may be designed and certified by a registered professional engineer or approved by the [title of local administrator];
d. Openings shall not be less than 3 inches in any direction in the plane of the wall;
e. The area cannot be used as finished living space. Use of the enclosed area shall be the minimum necessary and shall only be used for the parking of vehicles, building access or limited storage. Access to the enclosed area shall be the minimum necessary to allow for the parking of vehicles (garage door) or limited storage of maintenance equipment used in connection with the premises (standard exterior door) or entry to the living area (stairway or elevator). The enclosed area shall not be used for human habitation;
f. All interior walls, floor, and ceiling materials located below 1.0 foot above the BFE shall be unfinished and flood damage-resistant in accordance with FEMA Technical Bulletin 2, Flood Damage-Resistant Requirements.
g. Electrical, plumbing, HV AC duct work, machinery or other utility equipment and connections that service the structure (including, but not limited to, furnaces, oil or propane tanks, air conditioners, heat pumps, hot water heaters, ventilation, washer and dryer hook-ups, electrical junction boxes, circuit breaker boxes and food freezers) are prohibited in the fully enclosed area below the BFE plus 1.0 foot. Utilities or service equipment located in this enclosed area, even if elevated to 1.0 foot above the BFE in the space, may subject the structure to increased flood insurance rates.

h. A residential building with a structurally attached garage having the floor slab below the BFE is considered an enclosed area below the BFE and must meet the standards of items 1 through 7 above. A garage attached to a residential structure, constructed with the garage floor slab below the BFE, must be designed to allow for the automatic entry and exit of floodwaters in both directions. Flood openings or vents are required in the exterior walls of the garage or in the garage doors. Garage doors that must be manually opened do not meet the flood vent opening requirements in items 1 through 3 above. In addition to the automatic entry of floodwaters, the areas of the garage below BFE plus 1.0 foot must be constructed with flood damage-resistant materials per the requirements of FEMA Technical Bulletin 2. Garages attached to non-residential structures must also meet the aforementioned requirements or be dry floodproofed as per the requirements of Section 9.3.10.B.2.

- Add the following items to Section 9.3.10.C to provide design standards for mechanical equipment, exterior doors, and chimneys.

11. The bottom of all electrical, plumbing, machinery or other utility equipment that service the structure must be elevated 1.0 foot above the BFE and cannot be located below the structure. Any service equipment that must be located below the BFE must be floodproofed to prevent water from entering during conditions of flooding. Electrical, mechanical and plumbing system components are not to be mounted on or penetrate through walls designed to breakaway under flood loads.
12. To protect the building envelope, an exterior door shall be installed at the top of the stairs that provides access to the lowest (habitable) floor of the structure.
13. The base of a chimney or fireplace shall not extend below the BFE plus one foot. When vertical support is required, a chimney or fireplace shall be vertically supported on pile or column foundations embedded at least as deep as the rest of the structure foundation or deeper where needed to support the chimney against water and wind loads. The chimney and fireplace system shall be designed to minimize transfer of water and wind loads to the structure or structure foundation.

Add Section 9.3.12 as follows to provide a mechanism for enforcing the flood hazard regulations:

9.3.12 Enforcement

A. Each Zoning Permit shall authorize, as a condition of approval, the Planning and Zoning Commission or designated agents to make regular inspections of the subject property. The Planning and Zoning Commission or designated agents are also authorized to inspect any property in a Special Flood Hazard Area (SFHA) where it appears that violations of these regulations may be taking place.

B. If the Planning and Zoning Commission or designated agents finds that any person is undertaking any construction, substantial improvement, filling, or any other activity or maintaining a condition which in violation of these regulations, the Planning and Zoning Commission or designated agents shall:
   1. Issue a written order by certified mail, return receipt requested, to the subject property owner, ordering that the prohibited activity cease and ordering the property owner to either seek to obtain a Zoning Permit prior to continuing with the activity or, if appropriate, ordering that all violations and/or obstructions be removed from the Special Flood Hazard Area (SFHA) immediately.
   2. Notify the building official and request that any building permit(s) in force be revoked or suspended and that a stop work order be issued.

C. The Planning and Zoning Commission or designated agents may suspend or revoke a Zoning Permit if it is found that the applicant has not complied with the terms, conditions or limitations set forth in the permit or has exceeded the scope of work as set forth in the application, including application plans. Prior to revoking any permit, the Planning and Zoning Commission or designated agents shall issue notice to the permittee, personally or by certified mail, return receipt requested, setting forth the facts or conduct which warrants the intended action.

D. Failure to comply with any written order issued under this section shall be considered a violation of these regulations.

E. In the event violations or obstructions are not promptly removed from the Special Flood Hazard Area (SFHA), the Planning and Zoning Commission or designated agents may cause such removal and remediation work to be performed utilizing bond money if held in escrow pursuant to Section 15.4 of these regulations or may direct the Director of Public Works or other agent of the Town to cause such work to be done and to place a lien against the property.

F. Any person subject to enforcement action pursuant to this regulation, may appeal any requirement, decision, or determination of the Planning and Zoning Commission or designated agents to the Zoning Board of Appeals, in accordance with Section 9.3.11 of these regulations. Such person shall provide such information as necessary including appropriate certifications from a registered professional engineer or architect in order to substantiate the claim that the requirement, decision, or determination of the Planning and Zoning Commission or designated agents was in error or unwarranted.

- Add the following definitions to the Flood Terms of Section 20 Zoning Terminology Definitions:

Recreational Vehicle: For the purposes of Section 9.3 Flood Hazard Overlay District, recreational vehicle shall mean a vehicle which is: (a) built on a single chassis; (b) 400 square feet or less when measured at the largest horizontal projection; (c) designed to be self propelled or permanently towable by a light duty truck; and (d) designed primarily not for use as a permanent dwelling but as a temporary living quarters for recreational, camping, travel, or seasonal use.

Structure: A walled and roofed building which is principally above ground, including a manufactured home, a gas or liquid storage tank, or other man-made facilities or infrastructures.

- Relocate the following definitions from general zoning terminology of Section 20 to the Flood Terms section of Section 20 (these terms are specific to the Flood Hazard regulations):
    - Breakaway Wall
    - Cost
    - Development
    - Functionally Dependent Facility
    - Historic Structure
    - Lowest Floor
    - Manufactured Home
    - Manufactured Home Park
    - Market Value
    - Sand Dunes

Date: 1/4/2024

Recommendation 9: Update stormwater management standards and relocate technical standards from the regulations to the Town's Technical Standards document.

Purpose: Bring stormwater standards up to date with best practices as recommended by the Town's Stormwater Management Plan and the 2023 CT Stormwater Quality Manual.

Description: This amendment includes updates to the stormwater management regulations as recommended by the Town's stormwater management plan and based upon best practices established in the 2023 CT Stormwater Quality Manual. Specific technical standards are relocated from the zoning regulations to the Town's Technical Standards document by this amendment.

Geographic Extents: Townwide

Potential Impacts: No adverse impacts.

Context: A 2019 MS4 Land Use Regulatory Review Memorandum conducted for the Town recommends consolidating all requirements regarding stormwater BMP design and stormwater retention/reduction within the Town's Technical Standards and removing details from the Zoning Regulations. It also recommends that the Zoning Regulations refer applicants to Section 3 of the Technical Standards.

Recommended Zoning Amendments:

- Replace Section 13.8.7 Parking Lot Stormwater Drainage with the following:

> **13.8.7 Parking Lot Stormwater Drainage**
>
> Stormwater Drainage shall be provided, designed, and constructed in accordance with Section 3 of the Town of Stonington Technical Standards document.

- Amend Section 5.3.19.D.4 to reference the most current (2023) Connecticut Stormwater Quality Manual and to reference the Technical Standards document as follows:

> 4. Drainage. Use of "soft" (non-structural) stormwater management techniques that reduce impervious surface and enable infiltration is encouraged to reflect Best Management Practices (BMPs) contained in the 2023 Connecticut Stormwater Quality Manual. Stormwater detention ponds, although allowed within designated open space, shall not qualify towards the 50% minimum required open space. All stormwater detention structures shall be constructed in accordance with Section 3.16, 3.26, of the Town of Stonington Technical Standards document.

- Replace Section 8.10.4.F with the following to instead reference the Technical Standards document:

> F. Stormwater management systems within parking lots shall be designed, constructed, and maintained in accordance with Section 3 of the Town of Stonington Technical Standards document.

- Replace Section 9.1.9.A Stormwater Disposal and Management Facilities with the following to instead reference the Technical Standards document:

> A. Stormwater disposal and management facilities shall be provided, designed, constructed, and maintained in accordance with Section 3 of the Town of Stonington Technical Standards document.

- Amend Section 15.3.7.B.6 to reference the most current (2023) Connecticut Stormwater Quality Manual.
- Amend Section 15.3.7.F to reference the most current (2023) Connecticut Stormwater Quality Manual.

Remove Section 10.4.9.E.3 which is specific to the GDD and 10.5.7.F which is specific to the AHD and replace with the following regulation in a new section (Section 12.4.11), which would apply to all districts:

12.4.11 Stormwater Management

Stormwater management shall be provided, designed, constructed, and maintained to adequately handle run-off without adversely impacting natural resources or adjacent properties in accordance with Section 3 of the Town of Stonington Technical Standards document. The use of low impact development stormwater management solutions is strongly encouraged and best management practices identified in the 2023 Connecticut Stormwater Quality Manual should be employed.

Date: 1/4/2024

Recommendation 10: Provide more flexibility in the height and location of ground-mounted Small Solar Energy Systems.

Purpose: Remove barriers to the use of small solar energy collection systems.

Description: Small scale solar energy collection systems are a permitted accessory use, but ground mounted systems are limited in height to 15 feet, which restricts their use above parking areas. Ground mounted systems are also only allowed to cover 10% of a lot regardless of whether those systems are located above impervious surfaces such as parking lots. This recommendation would allow ground mounted systems to be up to 20 feet in height to allow for use over parking areas and allow an increase in coverage if located above parking areas.

Geographic Extents: All zoning districts.

Potential Impacts: The deployment of ground mounted systems of large parking areas may have an adverse visual impact in some contexts.

Context: Ground mounted solar energy systems are increasingly being deployed over larger parking areas. According to a 2021 study published in the official journal of the International Solar Energy Society, Connecticut could generate more than one third of the state's annual electricity consumption with solar canopies built over large, existing parking lots. Examples in Connecticut include at Westfarms Mall, which recently constructed a four-acre array over an existing parking lot.

Recommended Zoning Amendments:

- Section 6.3.14.D.3: Change the 15-foot height limit to 20 feet.
- Section 6.3.14.D.4: Amend to read as follows:

> 4. Lot Coverage: Ground mounted small solar energy collection systems shall not cover more than 10% of the area of a lot (including space between panels and related equipment), except that systems constructed over existing parking areas shall be exempted. Systems located over newly constructed parking areas shall be exempted up to the amount of area commensurate with the off-street parking required by these regulations.

Date: 2/29/2024

Recommendation #11: Provide a Sustainability Incentive

Purpose: Provide an incentive for sustainable development to conserve resources, reduce stormwater runoff, reduce light pollution, reduce urban heat island effect, and encourage low-carbon forms of transportation.

Description: This recommended amendment would provide a coverage incentive for a non-single-family or duplex development that scores above a specified level by providing sustainable features.

Geographic Extents: All districts

Potential Impacts: No adverse impacts

Context: Connecticut General Statutes Section 8-2(c)(4) enables municipalities to provide incentives in their zoning regulations for: solar and other renewable forms of energy; combined heat and power; water conservation, including demand offsets; and energy conservation techniques.

Recommended Zoning Amendments:

- Add Section 12.13 Sustainability Incentives as follows (see next page):

12.13 Sustainability Incentives

The inclusion of sustainable elements may be applied to increase the maximum lot coverage permitted.

12.13.1 Eligibility

All proposed uses except for single-family and duplex uses that are not included in a subdivision application shall be eligible for a lot coverage increase as permitted by this section.

12.13.2 Review

The review of project scoring and awarding of the incentive shall be conducted by the reviewing authority (Commission or Zoning Enforcement Officer) for the permit or application type required for the proposed use.

12.13.2 Coverage Increase

The maximum lot coverage shall be increased by the following amount based upon a project's score:

Points Earned	Coverage Increase Permitted
1,000-1,499	10%
1,500-1,999	15%
2,000-2,499	20%
2,500-3,000	25%
3,000+	30%

12.13.4 Maintenance and Improvements

A. Projects shall be built and maintained in good faith. Elements of the project receiving points shall be maintained for the life of the project but may be improved to a higher, more sustainable standard.
B. Failure to maintain elements of a project awarded points shall result in the project being non-conforming with the coverage standards of these regulations if the project exceeds the coverage limit of the zoning district in which it is located.
C. Projects shall be subject to periodic inspection by the Zoning Enforcement Officer to ensure adequate maintenance of sustainable elements for which points have been awarded.

12.13.3 Scoring

A. Calculation of Score: Scoring shall be conducted in accordance with the table below. Points earned shall be multiplied by the sustainability factor, which shall equal the score for each item. The award is based upon the total score, which is a sum of the score for each item.
B. Documentation: The applicant is responsible for providing documentation that confirms the performance of the proposal in accordance with the scoring matrix and shall submit a scoring matrix with calculations completed. The Commission or Zoning Enforcement Officer may request additional data, calculations, or professional certification to confirm the score(s) provided by the applicant prior to increasing the permitted lot coverage.

Sustainability Element	**Points**	**Sustainability Factor** (multiply points by this factor to determine score)
LEED	Points shall be awarded in accordance with projects designed to meet the following LEED certification levels: Certified=70, Silver=80, Gold=90, Platinum=100	5
Regenerative Design	5 points for each of the twenty Imperatives planned in accordance with the Living Building Challenge Living Certification standards International Living Future Institute) for projects that have received an LBC Ready Recognition ruling.	5
Lot Coverage	1 point for each 1% of buildable area covered by natural permeable materials	5
Tree Cover	1 point for each 1% of lot area with contiguous tree cover	5
Native Plants	1 point for each 1% of shrubs and trees that are CT native plants as listed on the UCONN Plant Database	1
On-Site Capture of Stormwater	1 point for each 1% of stormwater captured on-site during ten-year storm event.	2
On-Site Solar	1 point for each 1% of energy use to be supplied by solar	2
Geothermal Heating and Cooling	1 point for each 1% of heating and cooling to be supplied by a geothermal source.	2
Gray Water	1 point for each 1% of site water use provided by gray water	2
Pervious, Porous, or Permeable Pavement*	1 point for each 1% of pavement surface comprised of pervious, porous, or permeable pavement.	1
Green Roof*	1 point for each 1% of roof area covered by a green roof	1
Electric Vehicle Charging	1 point for each 1% of parking spaces provided with an electric vehicle charger	2
Bicycle Parking	1 point for each 1% of bicycle parking spaces (indoor or outdoor) relative to vehicular parking spaces (for example, if 100 parking spaces are provided and 10 bicycle spaces are provided, 10 points are awarded)	2
Public Sidewalks	1 point for each 1% of frontage with public sidewalks (includes driveway crossing if sidewalks remain at grade and the sidewalk material continues across the driveway)	1
Dark Sky Compliance	1 point for each 1% of outdoor fixtures that are Dark Sky Approved by Dark Sky International	1
*Projects claiming a coverage offset as permitted by Sections [insert reference to green roof and pervious surface coverage offsets if approved] shall not be awarded points for green roofs or pervious, porous, or permeable pavement.		

Date: 1/4/2024

Recommendation 12: Improve protection of trees and require planting of trees.

Purpose: Protect Stonington's tree cover and native trees and provide shade cover over areas of impervious surface to reduce heat-island effects.

Description: This recommendation seeks to strengthen the requirements for the preservation of trees, replacement of trees, and planting of new trees. It also distinguishes between native tree species and invasive species.

Geographic Extents: All zoning districts.

Potential Impacts: Planting of trees adds a marginal amount to development costs and increases maintenance costs (watering of trees, leaf removal, pruning, etc.).

Context: A mature tree canopy is characteristic of New England communities such as Stonington. Preserving that canopy and replacing trees lost to development important to preserving the identity of Stonington. Trees also play an important role in mitigating the causes and effects of climate change be absorbing carbon dioxide and replenishing oxygen and cooling the local environment. Tree replacement requirements are common to zoning regulations. Payment in-lieu-of programs and tree funds are more commonly used in large cities such as New York City, which has a Parks Tree Fund that receives payments from those required to plant new street trees by the City's zoning regulations but cannot plant on-site. The City of Hartford has a tree ordinance that requires the inch-per-inch replacement of trees 13 inches or more or payment into a tree account.

Recommended Zoning Amendments:

- By municipal ordinance, create a tree fund for receipt of payment in-lieu-of planting with funds used exclusively for the planting and maintenance of trees in rights-of-way and on Town land.
- Replace Section 12.4.1 with the following: (see next page)

12.4.1 Site Preservation and Tree Protection and Planting

A. To the extent possible, existing trees, vegetation and unique site features such as stone walls, ledge outcroppings and glacial erratics, shall be retained and protected.
B. Existing non-invasive plant materials including existing non-invasive, healthy, mature trees if properly located, shall be fully credited toward the open space and buffer yard planting requirements of these regulations.
C. Existing non-invasive trees in good condition over 12 inches in caliper in landscaped or undisturbed areas shall be preserved unless approved for removal by the Department of Planning. If such tree or trees are removed, the tree(s) shall be replaced with native trees on an inch-per-inch basis. Replacement trees shall be planted on-site. If on-site planting is demonstrated to be partially or wholly infeasible, required trees may be planted off-site. Newly planted trees shall be a minimum of 2 inches in caliper and shall be maintained until successfully established. Trees that are not successfully established within one year of planting shall be replaced with a tree of the same or greater caliper.
D. Payment in-lieu-of planting may be provided if the required planting of replacement trees cannot fully or partially be conducted on-site, or if planting cannot be conducted at an off-site location. A payment of $200 per inch of required tree not planted shall be provided to the Town of Stonington.

Date: 1/4/2024

Recommendation 14: Provide a reference to Stonington's Aquifer Protection Area Regulations in the Zoning Regulations and update the Aquifer Protection Area Regulations.

Purpose: Improve protection of Stonington's Aquifer Protection Area and the Community Wellhead Protection Area (designated by State of Rhode Island).

Description: This recommendation would provide reference to the Town's Aquifer Protection Area (APA) Regulations in the Zoning Regulations and specify that properties within the APA are subject to those regulations. It also provides recommended updates to the APA regulations. This recommendation would apply the Town's Aquifer Protection Area regulations to the Community Wellhead Protection Area established by the State of Rhode Island.

Geographic Extents: Aquifer Protection Area and Community Wellhead Protection Area

Potential Impacts: No adverse impacts anticipated.

Context: Stonington has an Aquifer Protection Area spanning the town boundary with Ledyard. Aquifer Protection Areas define the land area that contributes ground water to active public water supply wells (or well fields) that serve more than 1,000 people. The area falls within the Town's Groundwater Protection Overlay District but the zoning regulations make no reference to the Aquifer Protection Area regulations. Stonington has Aquifer Protection Regulations in a separate document. Stonington also has a Community Wellhead Protection area in proximity of Liberty Street and Route 78, directly east of the Elmridge Golf Course. This area is located in the Town's Groundwater Protection Overlay District. The Community Wellhead Protection Area is designated by Rhode Island and is comparable to Connecticut's Aquifer Protection Area.

The Aquifer Protection Area Regulations were adopted in 2005 and require minor updates to be consistent with Connecticut's Model Municipal Regulations for Aquifer Protection Areas (CT DEEP). Connecticut does not require towns and cities to extend protections to aquifer or wellhead protection areas of bordering states but Rhode Island requires its municipalities to regulate aquifer or wellhead protection areas of bordering states.

Recommended Zoning Amendments:

- Replace reference to "Watershed Protection Zone" in Section 9.1.2 and 9.1.3 of the Regulations to "Aquifer Protection Area". There is no delineated Watershed Protection Zone on the Groundwater Protection Overlay Map, nor is such a zone enabled by statute.

- Add new section 9.1.13 Aquifer Protection Area Regulations as follows:

9.1.13 Aquifer Protection and Community Wellhead Protection Areas

Properties located in the Aquifer Protection Area (the Final Adopted Level A Aquifer Protection Area (APA) mapped by CT DEEP and as amended) or the Community Wellhead Protection Area (as designated by the Rhode Island Department of Environmental Management) shall be subject to the Aquifer Protection Area Regulations of the Town of Stonington in addition to the above regulations of Section 9.1. The more restrictive standard shall apply.

Recommended Amendments to the Aquifer Protection Area Regulations:

- Add new section 4.2.3 to the Aquifer Protection Area Regulations, as recommended in the 2010 CT DEEP Model Municipal Regulations for Aquifer Protection Areas to be consistent with statutory amendments to Public Act No. 10-135, An Act Concerning Brownfield Remediation Liability:

4.2.3 A regulated activity which is on any municipally owned site undergoing remedial action pursuant to 40 CFR 271 at the time the applicable aquifer protection area is designated on a municipal zoning district map or inland wetland map, provided: (1) no such regulated activity substantially commenced or was in active operation for the five-year period preceding the date that at the applicable aquifer protection area is designated on a municipal zoning district map or inland wetland map, and (2) any person who engages in such regulated activity within the ten-year period commencing on the date that such applicable aquifer protection area is designated on a municipal zoning district map or inland wetland map registers such regulated activity on a form prescribed by the Commissioner of Environmental Protection and in accordance with the provisions of section 22a-354i-7 of the Regulations of Connecticut State Agencies.

- Revise section 8.1 of the Aquifer Protection Area Regulations, as recommended in the 2010 CT DEEP Model Municipal Regulations for Aquifer Protection Areas to be consistent with statutory amendments to Public Act No. 10-135, An Act Concerning Brownfield Remediation Liability to read as follows:

8.1 Any person engaged in a regulated activity which substantially commenced, or was in active operation within the past five (5) years, or with respect to which a municipal building permit was issued, either (A) before the effective date of the state aquifer protection regulations, or (B) before the date an applicable aquifer protection area is designated on a municipal zoning district map or inland wetland and watercourse areas map, whichever occurs later, or for any municipally owned site undergoing remedial action pursuant to 40 CFR 271, any person who engages in a regulated activity within the ten (10) year period commencing on the date the applicable aquifer protection area is designated on a municipal zoning district map or inland wetlands map, shall register the activity in accordance with this Section unless such person has pending an application for an exemption pursuant to §22a-354i-6 of the Regulations of Connecticut State Agencies.

- Revise section 8.1.2 of the Aquifer Protection Area Regulations, as recommended in the 2010 CT DEEP Model Municipal Regulations for Aquifer Protection Areas to be consistent with statutory amendments to Public Act No. 10-135, An Act Concerning Brownfield Remediation Liability to read as follows:

8.1.2 If the regulated activity is not specified in §22a-354p(g) of the Connecticut General Statutes, the person engaged in such activity shall submit a registration to the Agency not later than one hundred eighty (180) days after adoption of regulations pursuant to §22a-354p of the Connecticut General Statutes, or the designation the aquifer protection area pursuant to §22a-354i-2 of the Regulations of Connecticut State Agencies, whichever occurs later. Any municipally owned site undergoing remedial action pursuant to 40 CFR 271, the person engaged in such regulated activity shall submit a registration within the ten (10) year period commencing on the date the applicable aquifer protection area is designated on a municipal zoning district map or inland wetlands map. Any person submitting a registration pursuant to the requirements of this subsection shall simultaneously file a copy of the registration with the Commissioner, Commissioner of Public Health and the affected water company.

Date: 2/29/2024

Recommendation 15: Establish lot coverage limits and eliminate FAR standards.

Purpose: Regulate the amount of impervious surface on lots so as to avoid urban heat island effect, maintain rainwater infiltration and groundwater recharge, and minimize stormwater runoff to comply with the Town's stormwater management plan.

Description: This recommendation would eliminate the existing Floor Area Ratio (FAR) standards and replace them with a maximum lot coverage standard.

Geographic Extents: All base zoning districts and the MHD.

Potential Impacts: May restrict the amount of parking that may be provided on a site. Will favor multi-story construction over single-story construction. Some properties, particularly those in commercial districts, will become non-conforming with the regulations.

Context: Lot coverage regulations set a maximum amount (by percentage) of impervious surface that can be developed on a site. Impervious surface is comprised of buildings, structures, and impervious pavement materials. Lot coverage regulations are intended to control impervious surface, thereby preserving natural land cover for groundwater recharge, reduction of stormwater runoff, reduction of urban heat island effect, and for aesthetic purposes. In addition to controlling impervious surface, lot coverage limits provide a control on density and would allow the elimination of floor-area-ratio (FAR) standards, which are less effective in controlling the amount of impervious surface on a site.

Most communities in Connecticut have lot coverage limits in their zoning regulations. The Town of Groton and Town of North Stonington both regulate impervious coverage; neither regulates FAR. Townwide, Stonington has an impervious land cover of 19.2% (as of 2015, source: UCONN CLEAR).

Recommended Zoning Amendments:

- Provide the following lot coverage definition in Section 20:

> **Lot Coverage:** The percentage of a lot covered by impervious surfaces such as buildings, structures, concrete, asphalt, and impervious pavers.

- Replace the maximum floor area ratio standards of Section 7.1 with the following maximum lot coverage standards:

Zone	Maximum Lot Coverage (%)	Maximum Impervious Surface per Minimum Lot Size (For reference only, not for inclusion in regulations)
GBR-130	10%	13,000 sf
RC-120	10%	12,000 sf
RR-80	15%	12,000 sf
RA-40	25%	10,000 sf
RM-20	30%	6,000 sf
RM-15	40%	6,000 sf
RH-10	50%	5,000 sf
RA-20	30%	6,000 sf
RA-15	40%	6,000 sf

- Replace the maximum floor area ratio standards of Section 8.1 with the following maximum lot coverage standards:

Zone	Maximum Lot Coverage (%)	Maximum Impervious Surface per Minimum Lot Size (For reference only, not for inclusion in regulations)
DB-5	80%	4,000 sf
CS-5	80%	4,000 sf
LS-5	80%	4,000 sf
GC-60	50%	30,000 sf
HI-60	50%	30,000 sf
TC-80	80%	64,000 sf
MC-80	80%	64,000 sf
PV-5	100%	5,000 sf
LI-130	50%	65,000 sf
HM	80%	16,000 sf
M-1	60%	40,000 sf

- Replace the maximum floor area ratio standard of Section 10.2.7.A.6 (Maritime Heritage District) with the following maximum lot coverage standard: 80%.
- Remove all references to Floor Area Ratio including the definition in Section 20.

Date: 1/4/2024

Recommendation 16: Establish a green roof incentive.

Purpose: Encourage the development of green roofs to reduce stormwater runoff, reduce energy consumed in cooling structures, and reduce urban heat island effects.

Description: This recommendation would allow the use of green roofs to reduce lot coverage across all zoning districts with an established lot coverage limit.

Geographic Extents: Townwide

Potential Impacts: Allows for a higher lot coverage than would otherwise be permitted.

Context: Green roofs are currently defined in the zoning regulations and are permitted for use in the DB-5 district in meeting open space requirements. Multiple cities across the US (Chicago, Denver, New York, and others) and internationally have green roof mandates, or offer rebates, tax abatements, refunds, and zoning incentives for the construction of green roofs.

Recommended Zoning Amendments:

- Add Section 12.12 Green Roofs as follows:

12.12 Green Roofs

Green roofs may be used to offset lot coverage of a building or structure at a rate of 50% of the green roof area. By example, a 1,000 square foot green roof area would reduce the building coverage area by 500 square feet. To qualify for such a reduction a green roof shall:

A. Be designed in accordance with ASTM E2777-14 Standard Guide for Vegetative (Green) Roof Systems.
B. Cover a contiguous area of a minimum of 1,000 sf.
C. Be maintained for the life of the building.
D. Shall be subject to periodic inspection by the Zoning Enforcement Officer to ensure adequate maintenance.

Date: 1/4/2024

Recommendation 17: Establish porous, pervious, and permeable pavement incentive.

Purpose: Encourage the installation of porous, pervious, or permeable pavement surfaces to reduce stormwater runoff.

Description: This recommendation would allow the use of porous, pervious, and permeable pavement to reduce lot coverage across all zoning districts with an established lot coverage limit with the goal of reducing stormwater runoff and improving groundwater recharge.

Geographic Extents: Townwide, except within the Groundwater Protection Overlay District.

Potential Impacts: Allows for a higher lot coverage than would otherwise be permitted.

Context: Porous pavement is encouraged, but not required within the Section 13.3.5 Parking Surface regulations, but there is no incentive associated with its use. Multiple cities across the US (Los Angeles, San Antonio, Minneapolis, and others) encourage or require uses of porous, pervious, and permeable pavements.

Recommended Zoning Amendments:

- Add Section 12.4.11 Porous, Pervious, and Permeable Pavement as follows:

12.4.11 Porous, Pervious, and Permeable Pavement

Porous asphalt, pervious concrete, or permeable pavers may be used to offset lot coverage of paved surfaces at a rate of 50% of the porous, pervious, or permeable pavement area. By example, a 1,000-sf porous asphalt parking area would reduce the lot coverage area by 500 sf. To qualify for such a reduction a pervious pavement area shall:

A. Be located outside of the Groundwater Protection Overlay District.
B. Be designed and constructed in accordance with the Chapter 13 of the 2023 Connecticut Stormwater Quality Manual.
C. Cover a contiguous area of a minimum of 1,000 sf.
D. Be maintained for the life of the surface.
E. Shall be subject to periodic inspection by the Zoning Enforcement Officer to ensure adequate maintenance.