
Attachment 3: Town Facts, Plans Policies and Regulations

Old Saybrook Coastal Resilience and Adaptation Study **GZA**

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Town Facts



People

Population: +/- 10,160 people
Population Change since 2000: -1.2%
Percent female/male: 52.6%/47.4%
Land Area: about 15.3 square miles
Population density: about 681 people per square mile
Median age: about 50 years (compared to the median age of 39 for the State)

Ethnicity (2011-2015 American Community Survey:

+/-9,600 of residents are White (+/- 92%),
+/-330 residents are of Hispanic descent (+/- 3%),
+/-100 residents are of African American descent (<1%),
+/- 240 residents are of Asian descent (+/- 2%)

People cont.

Age (2010 census): +/- 2,500 Old Saybrook residents are elderly
+/- 2,000 residents 18 years old and younger (2010 US Census)

Disability (2010 census): age 5 to 15: 7
age 16 to 64: 296
age >65: 138

Households (2010 census): 4,247 households;
just under 24% children under the age of 18 living in them
average household size 2.21 people
average family size was 2.71 people per household
population density of about 682.8 people per square mile

Median household income: \$84,546 (compared to Connecticut average \$73,433)

Estimated per capita income: \$49,015

Education: High school or higher: +/-93%
Bachelors or higher: +/-38%
Graduate or professional: +/-15%

Unemployed: +/-4 to 6% (2015)

Buildings

Residential: 5,730
Commercial/industrial: 466

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Homes

Residential Buildings: 5,730

Building ownership (2011-2015 American Community Survey):

Owner-occupied: +/-81% (4,666 residences)

Renter: +/-16% (938; average rent \$1,622/month)

New, single family building permits (2004 – 2014):

2004: 58; average cost \$229,900

2005: 60; average costs \$234,600

2006: 22; average cost \$258,000

2007: 14; average cost \$340,000

2008: 12; average cost \$230,700

2009: 13; average cost \$283,100

2010: 8; average cost \$234,200

2011: 9; average cost \$214,100

2012: 18; average cost \$256,500

2013: 25; average cost \$273,100

2014: 10; average cost \$421,700

Median housing cost: \$369,300

Cost of living index: 140.8 (US average 100)

Motor Vehicles: 12,925

Schools

School Enrollment: +/- 1,344 students (based on 2016 Old Saybrook Annual Report)

Schools: 3

Essential Facilities

Hospitals: None

Healthcare Facilities: 3

Emergency Shelter: 1 (School)

Fire Station: 1

Lifeline Facilities

Water:

- Provider: Connecticut Water Company
- Guilford Water System (wells and reservoirs)
- Water Supply Source: Holbrook Wellfield
- Old Saybrook Aquifer Protection Zones: Holbrook and Saybrook well fields
- Individual Wells

Electrical:

- Provider: Eversource
- Overhead transmission
- Two substations:
Bokum Road
Elm Street

Wastewater (Sanitary):

- Decentralized Wastewater Management District (DWMD) – Not Completed
- On-Site Septic

High Loss Potential Facilities

Dams 11

Transportation Infrastructure

State Roads: +/- 47 miles

Municipal Roads: +/- 88 miles

Bridges: 22

Culverts: 111

Amtrak Rail Line

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Zoning

- Residential: AAA, AA-1, AA-2, AA-3, A, B, C (Conservation District)
- Commercial: Central Business B-1, Shopping Center Business B-2, Restricted Business B-3, Gateway Business B-4, Marine Industrial MI, Saybrook Point SP-1 through SP-3, Industrial District I-1
- Overlay Zones: Flood Plain Zone FP, Planned Residential Development Zone PRD, Aquifer Protection Zone APA, Gateway Conservation Zone GC, Coastal Area Management Zone CAM, Incentive Housing Zone IH

Town Budget

- Old Saybrook Budget (2018 Budget; 2016 mill rate; 2015 revenues):
- 2016 Grand List Mill Rate 19.66 mills (0.01966; \$19.66 per \$1,000 of taxable property assessed value)
 - 2015 general revenues:
 - Property taxes +/- \$40 million
 - Other +/- \$2.5 million
 - 2018 general expenses:
 - General government +/- \$19.7 million, including:
 - Public safety +/- \$5.7 million
 - Public works +/- \$4.2 million
 - Bond Indebtedness: +/- \$3.5 million
 - Education +/- \$25.6 million
- Moody’s Bond Rating: AA2

Town Map Overview

Figure 3-1 presents the distribution of assessed property value. Figure 3-2 presents the Town Zoning Map.

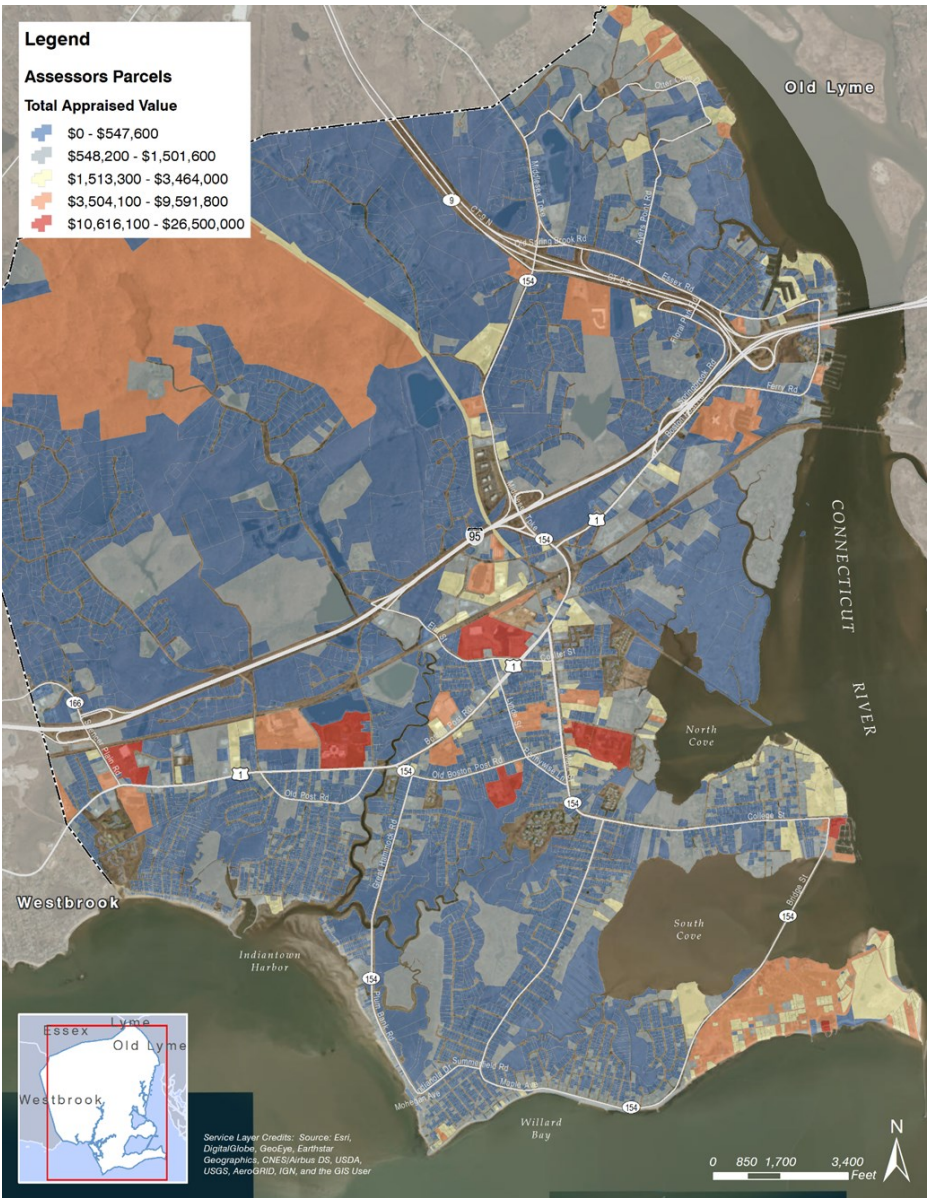


Figure 3-1 Property Appraisal Values throughout Old Saybrook

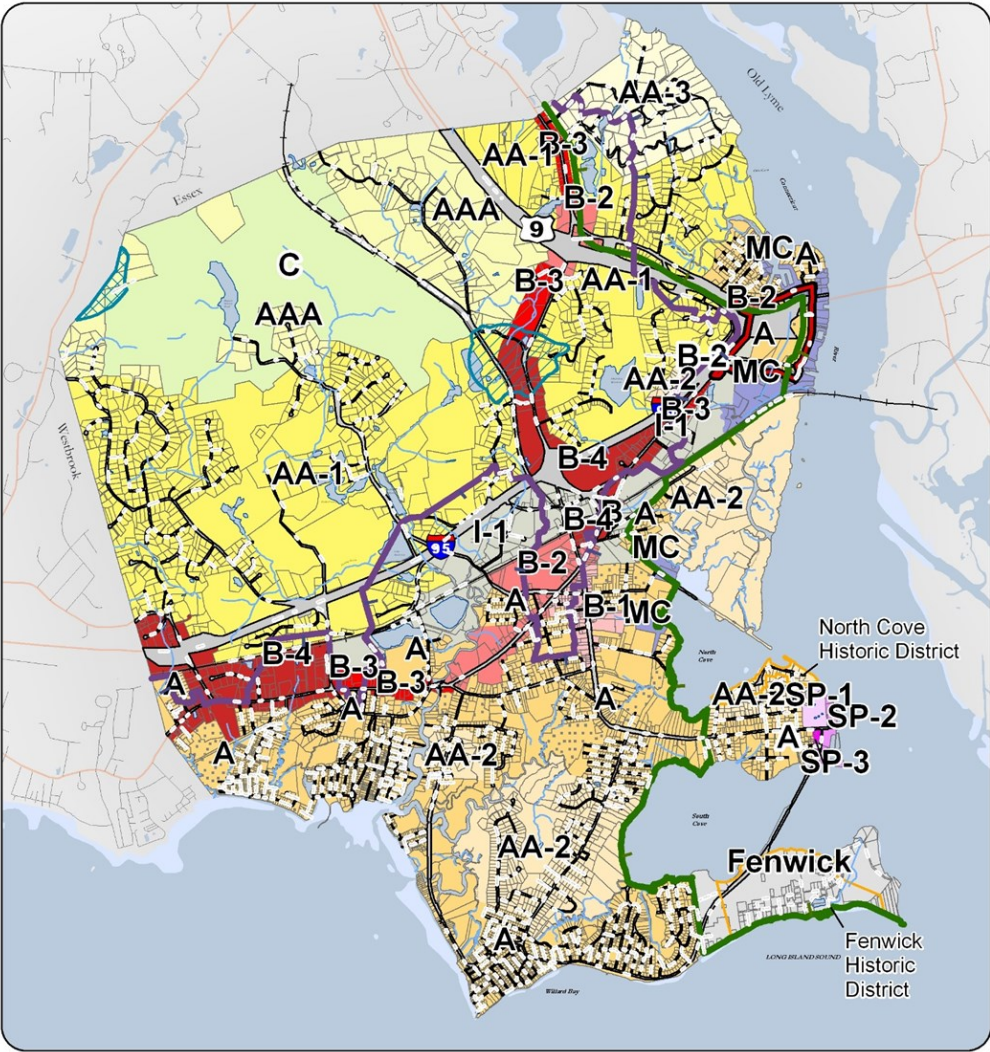
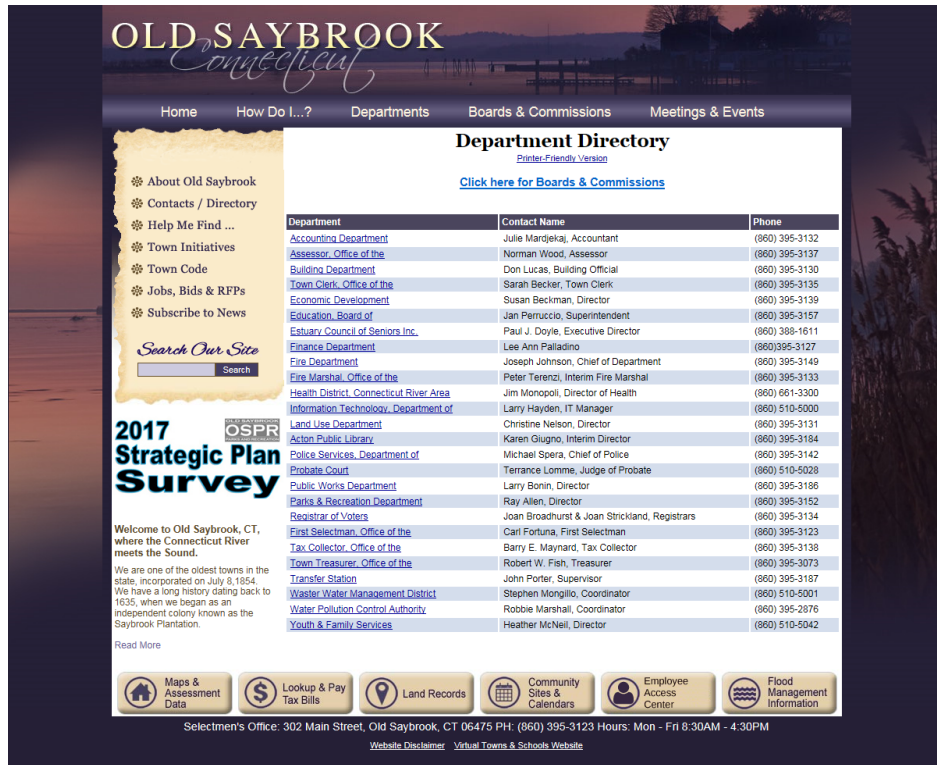


Figure 3-2 Town Zoning Map



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Relevant Plans, Policies and Regulations



Old Saybrook Coastal Planning Overview

The State and the Town have an established planning process that provides a potential framework for resilience and adaptation planning at Old Saybrook. Plans include: 1) the State Natural Hazard Mitigation Plan; 2) the Old Saybrook and Borough of Fenwick Natural Hazards Mitigation Plan; 3) the State of Connecticut Conservation and Development Plan; and 4) the Old Saybrook Plan of Conservation and Development. Old Saybrook is also a participating community under the National Flood Insurance Program (NFIP). The Town Planning Commission is responsible for the Old Saybrook Plan of Conservation and Development. The Town also has numerous supplemental plans that address issues relevant to resilience and adaptation planning.

Natural Hazard Mitigation Plans

The purpose of the State and Old Saybrook Natural Hazard Mitigation Plans is to identify natural hazard risks and prepare for natural disasters before they occur. Adoption of a FEMA-approved plan is also required to be eligible for federal disaster relief grants per the Disaster Mitigation Act of 2000. The State's Natural Hazards Mitigation Plan was most recently updated in January 2014. The State Plan establishes the hazard mitigation strategy for the State, including climate change and acknowledges that extreme weather events have already become more frequent over the past 50 years and that this trend is expected to continue into the future.

The State Plan includes three resilience and climate change adaptation strategies:

- Support and enhance State policy and legislative efforts to mitigate the effects of natural hazards and adapt to climate change;
- Identify, develop, and prioritize hazard mitigation projects including climate change adaptation strategies and relocation for State-owned facilities considered at risk to natural hazards; and
- Investigate climate change adaptation strategies as they affect natural hazard mitigation and State investment policies, and link hazard mitigation activities with climate adaptation strategies when appropriate and possible.

The State Plan affirms three mitigation goals for Connecticut:

- Promote implementation of sound floodplain management and other natural hazard mitigation principles on a state and local level;
- Implementation of effective natural hazard mitigation projects on a state and local level; and
- Increase research and planning activities for the mitigation of natural hazards on a state and local level.

The Town's Natural Hazard Mitigation Plan identifies coastal flooding and sea level rise as major natural hazard risks. The next Old Saybrook Natural Hazard Mitigation Plan update is in 2019. The Town Plan identifies Town-owned vulnerabilities and assets with respect to coastal flooding, inland and riverine flooding, winter storms and wind. The Plan also includes mitigation strategies to address the future impacts from coastal flooding.

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Plan of Conservation and Development

The State Conservation and Development Plan serves as the official policy for the State's Executive Branch in matters pertaining to land and water resources conservation and development. It is required by law and is revised every five years in consultation with regional councils of governments, municipalities, state agencies and the public. The current (December, 2017) plan covers the period of 2018 to 2023. Municipalities and regional planning organizations are also required by law to prepare and update their respective plans at least every 10 years, and must formally adopt their plan to be eligible for discretionary state funding. The date of the most recent plan adopted by Old Saybrook is July 2014, and that the Town is currently eligible for discretionary state funding.

The State plan has six Growth Management Principles:

1. Redevelop and Revitalize Regional Centers and Areas with Existing or Currently Planned Physical Infrastructure;
2. Expand Housing Opportunities and Design Choices to Accommodate a Variety of Household Types and Needs;
3. Concentrate Development Around Transportation Nodes and Along Major Transportation Corridors to Support the Viability of Transportation Options;
4. Conserve and Restore the Natural Environment, Cultural and Historical Resources, and Traditional Rural Lands;
5. Protect and Ensure the Integrity of Environmental Assets Critical to Public Health and Safety; and
6. Promote Integrated Planning Across all Levels of Government to Address Issues on a Statewide, Regional and Local Basis.

Connecticut Public Act 13-179 requires that the plan: 1) take into account risks associated with increased coastal erosion as anticipated by sea level rise projections published by the National Oceanic and Atmospheric Administration (NOAA) in Technical Report OAR CPO-1; 2) identify the impacts of such increased erosion on infrastructure and natural resources; and 3) make recommendations for the siting of future infrastructure and property development to minimize the use of areas prone to such erosion.

While all of the Old Saybrook Plan of Conservation and Development is relevant to coastal flooding and sea level rise resilience and adaptation, the chapter on Water Resources is particularly relevant, including sections on coastal management, protection of the undeveloped shorefront, beach erosion, use of developed shorefront and additional issues including wastewater management, water supply, surface and stormwater management and flood management. The Old Saybrook Plan includes the following relevant goals:

- Preservation, conservation, and development consistent with the Connecticut Coastal Management Act;
- Protection of water resources and groundwater quality;
- Prevention of destruction of valuable wetland systems and protection of native wetlands species and habitats;
- Conservation, restoration, and wise use of the shorefront to minimize erosion;
- Avoidance of flood problems;
- Consideration in the planning process of the potential impact of coastal flooding and erosion patterns on coastal development to minimize damage to and destruction of life and property and reduce the necessity of public expenditure to protect future development from such hazards;
- Maintenance and improvement of tidal and freshwater wetlands for their natural functions and social benefits;
- Preservation and enhancement of coastal resources in accordance with State policies concerning environmental protection, inland wetlands & watercourses, water resources, water pollution, parks and forest, and pollution, and flood control & beach erosion;
- Development of corridors of open space in "greenways", which protect natural resources, preserve scenic landscapes, and historical resources;
- Acquisition of land for municipal purposes, including recreation, habitat protection, economic development, historical and cultural preservation, and the public health, safety, and welfare;
- Implementation of an aggressive open space identification, acquisition and management program using outside funding sources to supplement town funds where feasible and appropriate;
- Protection of important natural resources, including the Connecticut River and Long Island Sound, tidal and inland wetlands, streams, ponds and lakes, forested ridges and hills, as well as open fields and farms, from degradation due to inappropriate development; and
- Preserve unique historical and cultural resources of the community to focus on Old Saybrook's past.

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Connecticut Public Act 12-101 requires that future revisions to the State Plan of Conservation and Development (SPOCD) consider risks associated with coastal erosion caused by sea level rise, evaluate the impacts of such erosion on infrastructure and natural resources, and make recommendations for future development and infrastructure siting to minimize the use of erosion-prone areas.

Supplemental Plans and Reports

Supplemental plans and reports include: 1) the Conservation Plan; 2) the Harbor Management Plan; 3) the Municipal Coastal Program; 4) the Saybrook Point Enhancement Plan; 5) the Stormwater Management Plan; and 6) the “Sea Level Rise Climate Adaptation Report of Findings” (2015 SLRCC).

The resilience and adaptation goals identified in the 2015 SLRCC:

- Charge an existing Town agency or a new Committee to continue the work started by this committee and to monitor changes to sea level rise forecasts based on new data or improved scientific models.
- Engage a consulting firm that specializes in coastal resilience planning to study the impacts and risks of sea level rise and climate change to identify areas of increased flooding, coastal erosion and shoreline change. The study should recommend specific adaptation and mitigation actions for the Town and residents.
- Consider sea level rise and climate change in long-range and current planning, particularly updates to the Town’s existing Natural Hazards Mitigation and Coastal Management Plans and to guide, where appropriate, future updates to the Town’s Plan of Conservation and Development.
- Budget for design and construction of physical solutions, especially those for which matching funds garner government or non-profit grants.
- Continue to keep sea level rise and climate change on the front burner of community dialog.

The 1982 Municipal Coastal Program (MCP) addressed the Town’s Coastal Boundary Area and resulted in the following:

- Identification and evaluation of local coastal resources;
- Consideration of local problems, needs and issues within the Coastal Boundary Area;
- Development of local goals and policies for the Coastal Boundary Area;
- Integration into the Town’s Plan of Development for the Town of Old Saybrook; and
- Establishment of the Old Saybrook Planning Commission as responsible

The development of the program was funded in part by NOAA under the 1972 Coastal Zone Management Act and was prepared in compliance with state of Connecticut’s Coastal Management Act as amended in 1979.

The MCP goals were:

- Coastal Hazards: in coastal hazard areas, to promote the public health, safety and general welfare and to minimize public and private losses due to flood conditions.
- Beach Erosion: to conserve, maintain, restore and wisely use the miles of beach available in Old Saybrook for recreation and for their natural resource advantages.
- Developed Shorefront (Limited): to continue the use and development of existing limited shorefront areas for marine-related uses, including recreational boating, recreational and commercial fishing and other uses which enable people to have contact with the resources of the shoreline.
- Wetlands: to maintain all existing viable wetlands and freshwater wetlands for their natural function and social benefits, providing for modification of tidal wetlands only to implement other established coastal goals and policies.
- Sewer Avoidance/Water Quality: to assure proper provision for sewage disposal and maintenance of water quality within the Coastal Boundary and in a manner, that meets established standards and supports coastal goals and policies.
- People to the Shore: to continue and increase opportunity for people to use and enjoy the amenities and resources of the shorefront in a variety of ways and in a manner, that conserves and replenishes coastal resources.
- Town Beach: to provide a suitable and sufficient beach and land support area for present and future Town of Old Saybrook residents.

While this program is no longer a part of the Town’s local charter, it assisted the community in setting the foundation for better management of the Town’s coastal resources. Many of the local problems and issues outlined in the MCP over 35 years ago continue to be at the forefront today, including beach erosion, sanitary sewer, wetlands, development along the coastal shoreline, and others. The legacy of the MCP continues to this day through the integration of many of its goals and policies into current plans and zoning regulations.

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Old Saybrook Coastal Regulatory Overview

Connecticut is a Home Rule State. As such, Old Saybrook has primary responsibility for regulating land use (per the Zoning Enabling Act). However, when regulating land use, Old Saybrook still needs to comply with State and federal coastal management and flood regulations, in particular:

TOWN OF OLD SAYBROOK
Building Department
302 Main Street • Old Saybrook, Connecticut 06475
Telephone (860) 395-3130 • FAX (860) 395-3125

APPLICATION for PLAN EXAMINATION and BUILDING PERMIT

FOR OFFICE USE: MAP: _____ LOT: _____ Date Received: ____/____/____ Permit # _____
Permit Fee Paid: \$ _____ Cash or Check # _____ FSI: _____ ZCR: _____ Flood Zone: Y or N
(Includes 1.5% per \$100 educational fee/school fee)

PROPERTY ADDRESS: _____ Old Saybrook, CT 06475

Proposed Use: Residence _____ Commercial _____ Store _____ Name of Business: _____
Description of work to be done: _____
Please note: Work must begin within 180 calendar days. Site plan must be included for all new construction.

Construction Costs: _____ Roofing: _____
Improvement: \$ _____ CRS #: _____ # of Sectors: _____
Electrical: \$ _____ Plumbing: \$ _____ RIP: Yes _____ No _____
Heating/A.C.: \$ _____ Total Valuation: \$ _____

Property Owner/Leasee: _____
Mailing Address: _____
City: _____ State: _____ Zip code: _____
Email Address: _____ Phone #: _____

Contractor Name & Company: _____
Address: _____
City: _____ State: _____ Zip code: _____
Email Address: _____ Phone #: _____
License Number: _____

CERTIFICATION
I hereby certify that I am the owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application in his authorized agent and I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the said official or the code official's authorized representative shall have the authority to enter areas covered by such permit at any reasonable hour to enforce provisions of the code(s) applicable to such permit.
Any application for which a permit has not been issued within 120 days of the date of application shall be considered void and any fees associated with that application will be forfeited.

Applicant: _____
Address: _____ City: _____ State: _____ Zip code: _____
Email Address: _____ Phone #: _____
Approved by: _____ Building Official _____ Date: _____
TYPE: _____ USE GROUP: _____

State Regulations:

1. the Connecticut Coastal Management Act (CCMA; CGS Sec. 22a-90 through 22a-112);
2. the Tidal Wetlands Acts (CGS Sec. 22a-28 through 22a-35); and 3) the Structures, Dredging and Fill Act (CGS Sec. 22a-359 through 22a-363f); and
3. the Connecticut State Building Code.

Federal Regulations:

1. Section 10 All Structures and Work within Navigable Waters (USACE);
2. Section 104 Discharge of Dredged or Fill Material (USACE);
3. Section 103 Ocean Disposal of Dredged Materials (USACE);

4. National Flood Insurance Program regulations (Code of Federal Register 44 CFR 59 through 80; and
5. Floodplain Management and Protection of Wetlands (44 CFR 9)

Regulatory Jurisdiction

The Town's regulates activities inland of the Coastal Jurisdiction Line (CJL). The coastal jurisdiction line for the Town includes: 1) Long Island Sound at Elevation 2.9 feet NAVD88; and 2) the Connecticut River at Elevation 2.9 feet NAVD88. The Connecticut Department of Energy and Environmental Protection (DEEP) has the primary authority to regulate tidelands seaward of the CJL (pursuant to the Tidal Wetlands Act and the Structures, Dredging and Fill Act). The Mean High Water (MHW) is the average shoreward extent of all high tides. The area between MHW and the CJL is co-regulated by both DEEP and Old Saybrook.

The US Army Corps of Engineers (USACE) has regulatory jurisdiction within "Navigable Waters" which are tidal waters located waterward of MHW and all waters that are, have been or may be used for the transport of interstate commerce. USACE regulatory jurisdiction extends 3 miles seaward for coastal waters and the area between 3 and 14 miles seaward for open ocean waters.

Under the Connecticut Coastal Management Act (CCMA), Coastal Site Plan review by the Town is required for all activities located within the Coastal Boundary, which is defined as: 1) a continuous line delineated on the landward side by the interior contour elevation of the FEMA FIRM 100-year recurrence interval flood; 2) a 1,000 linear foot setback from the Mean High Water Mark; or 3) a 1,000 linear foot setback from the inland boundary of tidal wetlands, whichever is farthest inland.

The Old Saybrook Zoning Commission regulates land use and is responsible for enforcement of the zoning regulations. The Old Saybrook Conservation Commission is responsible for the development, conservation, supervision and regulation of natural resources. The Town Inland Wetlands & Watercourses Commission is responsible for review of all regulated activities within 100 feet of a regulated area. The Town Building Department and Town Engineer are responsible for enforcement of the building codes. The Old Saybrook Planning Commission is responsible for Coastal Site Plan Review.

Coastal Zone Management Act (CZMA)

The federal Coastal Zone Management Act (CZMA) is administered by NOAA and provides for the management of the nation's coastal resources through three national programs:

- the National Coastal Zone Management Program;
- the National Estuarine Research Reserve System; and
- the Coastal and Estuarine Land Conservation program.

As part of the federal program, Connecticut's Coastal Management Program is administered by the Department of Energy and Environmental Protection's (DEEP) Bureau of Water Protection and Land Reuse's Office of Long Island Sound Programs (OLISP) and is approved by NOAA under the federal Coastal Zone Management Act.

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The Connecticut Coastal Management Act (CCMA) is intended to: 1) ensure balanced growth along the coast; 2) restore coastal habitat; 3) improve public access; 4) protect water-dependent uses, public trust waters and submerged lands; 5) promote harbor management; and 6) facilitate research. CCMA regulates work in tidal, coastal and navigable waters and tidal wetlands under: 1) Sections 22a-90 through 22a-112 of the Connecticut General Statutes (CGS); 2) the Structures Dredging and Fill statutes (Sections 22a-359 through 22a-363f); and 3) the Tidal Wetlands Act (Section 22a-28 through 22a-35). The Connecticut statutes include:

1. Conn. Gen. Stat §22a-90 to 22a-112 include:

- Coastal Hazard Areas (Conn. Gen. Stat §22a-92(b)(2)(F): Development to minimize hazards to life and property and promote nonstructural solutions to flood and erosion except where structural alternatives are necessary to protect existing inhabited structures, infrastructure and water-dependent uses.
- Coastal Hazard Areas (Conn. Gen. Stat §22a-92(b)(2)(J): Maintain natural relationship between eroding and depositional coastal landforms; minimize adverse impacts of erosion and sedimentation on coastal land uses through nonstructural mitigation; structural solutions are permissible when necessary and unavoidable for protection of infrastructure, water-dependent uses, existing inhabited structures, and where not feasible, less environmentally damaging alternative and where all reasonable mitigation measures and techniques minimize adverse environmental impacts.
- Tidal Wetlands (Conn. Gen. Stat §22a-92(c)(1)(B)): Disallows any filling of tidal wetlands and nearshore, offshore and intertidal waters for the purposes of creating new lands from existing wetlands or coastal waters unless adverse impacts on coastal resources are minimal.
- Coastal Structures and Filling (Conn. Gen. Stat §22a-92 (b)(1)(D), 22a-92 (c)(1)(D), 22a-359(a) as referenced by 22a- 92(a)(2)): requires that all structures in tidal wetlands and coastal waters are designed, constructed and maintained to minimize adverse impacts on coastal resources, circulation and sediment patterns, flooding and erosion, and to reduce to the maximum extent practicable the use of fill; filling of tidal wetlands and nearshore for the purpose of creating new land is disallowed; and, the commissioner of environmental protection shall regulate dredging and the placement of fill.
- Beaches and Dunes (Conn. Gen. Stat §22a-92(b)(2)(C)): Encourage the restoration and enhancement of disturbed or modified beach systems. Dune reshaping and beach scraping is generally allowed as part of beach/dune nourishment/filling.

2. Structures, Dredging and Filling (Conn. Gen. Stat §22a-359 to 22a-363f): regulates dredging and erection of structures and the placement of fill in the tidal and coastal waters to prevent or alleviate shore erosion, preserve wildlife habitat, development of adjoining uplands, etc.

3. Tidal Wetlands (Conn. Gen. Stat §22a-28 to 22a-35): regulates draining, dredging, excavation, or removal of soil, mud, sand, gravel, aggregate of any kind or rubbish from any wetland or the dumping, filling or depositing thereon of any soil, stones, sand, gravel, mud, aggregate of any kind, rubbish or similar material, either directly or otherwise, and the erection of structures, driving of pilings, or placing of obstructions, whether or not changing the tidal ebb and flow.

Changes to the CCMA during 2012 (through Public Act 12-101) launched new initiatives that are focused on sea level rise (SLR) and revisions to shoreline protection and shoreline protection regulatory procedures. SLR is now part of the CCMA's general goals and policies for coastal planning; in particular, consideration of the potential impacts from SLR, coastal flooding and erosion patterns on coastal development. The CCMA defines SLR based on published NOAA historic data (i.e., the trend observed in the historical period of record) to establish future sea levels [PA 12-101, section 2], but encourages the use of more conservative SLR projections. The State updates sea level rise projections every ten years, most recently during 2018.

The CCMA also revised policies related to shoreline flood and erosion control structures that encourage the protection of natural and nature-based shoreline protection and discourages the use of structural measures (e.g. seawalls, bulkheads and revetments) except in certain specified conditions. Under the CCMA, prior to approving projects the Town will need to consider two additional requirements:

Feasible, Less Environmentally Damaging Alternatives:

- Move the house landward away from floodwaters and wave action;
- Elevate the house vertically, preferably to the highest practical freeboard, at least as high as FEMA standards require;
- Restore or create a dune or vegetated slope between the house and the water to absorb storm waves and protect against erosion; and
- Create a Living Shoreline. "Living shorelines" involve restoration of waterfront habitats, often using fill to support tidal wetland vegetation.

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Reasonable Mitigation Measures and Techniques:

- Upland migration of tidal wetlands can be provided by establishing a structure setback or a rolling easement to ensure that wetlands can colonize upland areas as sea level rises;
- Beach re-nourishment to replace the sand supply that may be adversely affected by a seawall or groin; and
- Compensation for the hardening of one part of the shoreline by removing the equivalent extent of flood and erosion control structures from another part of the applicant's site or from another site. This approach can be conceptualized as "No-Net-Increase in Shoreline Armoring". PA 12-101, to encourage natural and nature-based features for shoreline protection, provides the Town with the ability to exempt "living shoreline" projects from the definition of shoreline flood and erosion control structures as long as the sole purpose or effect of the proposed project is the restoration or enhancement of tidal wetlands, beaches, dunes or intertidal flats. This gives the Town latitude to exempt such projects from the mandatory coastal site plan review process.

US Army Corps of Engineers

The following laws define the regulatory authorities and responsibilities of the Corps of Engineers:

- Section 10 of the Rivers and Harbors Act of 1899 (33U.S.C. 403) authorizes the Corps to regulate certain structures or work in or affecting navigable waters of the United States.
- Section 404 of the Clean Water Act (33 U.S.C 1344) authorizes the Corps to regulate the discharge of dredged or fill material into waters of the United States.
- Section 103 of the Marine Protection, Research, and Sanctuaries Act of 1972, as amended (33 U.S.C. 1413) authorizes the Corps of Engineers to regulate the transportation of dredged material for the purpose of disposal in the ocean.

The Corps also coordinates compliance with related federal laws. These include the National Environmental Policy Act, the Fish and Wildlife Coordination Act, the Endangered Species Act, the National Historic Preservation Act, the Deepwater Port Act, the Federal Power Act, the Marine Mammal Protection Act, the Wild and Scenic Rivers Act, the National Fishing Enhancement Act, the Magnuson-Stevens Fishery Conservation and Management Act, the National Flood Insurance Act of 1968 (as amended), and Executive Order 11988 on Flood Management.

Local Zoning Regulations

Old Saybrook has local zoning regulations and is authorized by Connecticut General Statutes to protect Old Saybrook against floods as well as consider future conditions (e.g., sea level rise) when enacting land use regulations, and to use specific ordinances to do so including size and height limitations, development density, use restrictions, setbacks, overlay zones and special use zones. Review of development within the Coastal Boundary at Old Saybrook is the responsibility of the Old Saybrook Planning Commission. While Old Saybrook has authority inland of the CJL, the CCMA requires that Old Saybrook refer all Flood and Erosion Control Structure (FECS) to DEEP for review and comment (including structures located inland of the CJL, if they are contrary to the intent of the CCMA). Implementation of the CCMA at Old Saybrook is through the Coastal Site Plan review process.

- **Section 59 Coastal Area Management (CAM):** In accordance with the provisions of C.G.S. §22a-105 through 22a-109, any application pertaining to a proposed *building*, other *structure*, *use*, site development, excavation or grading that is subject to these regulations and located fully or partially within the "Coastal Boundary" as defined by C.G.S. §22a-94 and as delineated on the Coastal Boundary map for the Town of Old Saybrook, will be accompanied by a Coastal Site Plan. 2012 changes to the Connecticut Coastal Area Management Act (CCMA) require that, at a minimum, SLR consistent with that observed over the historical record be addressed in design of shoreline flood and erosion control structures. More conservative assumptions of SLR are encouraged in the CCMA. The rate of SLR is increasing significantly in recent decades (relative to the mean during the entire record of data); therefore, it is recommended that the zoning recommendations define a more conservative SLR projection.
- **Section 67 Soil Erosion and Sediment Control:** When any use, building or structure or site development that is subject to these regulations involves a disturbed area of one-half (1/2) acre or more, or otherwise when provision for soil erosion and sediment control is required by these regulations, a certified Soil Erosion & Sediment Control Plan ("control plan") in connection therewith will be in effect prior to, during and upon completion of construction. A control plan certified by the Planning Commission in connection with approval of a subdivision under the Subdivision Regulations and in effect for the lot where the disturbed area is located, may constitute the control plan required by these regulations. Based on recent changes to the CCMA, the Town now has the latitude to exempt "living shoreline" and natural resource restoration (e.g. tidal wetlands, beaches, dunes or intertidal flats) from the coastal site plan review process as outlined in more detail in discussion presented below. Section 67 can be modified to encourage the use of natural and nature-based features.

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Federal Coastal Resources Barrier Act

Congress passed the Coastal Barrier Resources Act (CBRA) in 1982 and the Coastal Barrier Improvement Act (CBIA) in 1990, with the goal of discouraging future development in coastal barrier areas by not allowing the use of federal funds for development or reconstruction projects after a coastal storm or flooding event. Congress designed the program to minimize the loss of human life and adverse impacts to fish, wildlife and other natural resources. The U.S. Fish and Wildlife Service administers this program, which includes over 3 million acres of coastal land (including, in Old Saybrook, portions of South Cove and Cold Spring Brook). The CBRA limits, but does not completely prohibit, development within the CBRS.

National Flood Insurance Program

The Town is a participating community in the National Flood Insurance Program (NFIP), which means that the Town has adopted and submitted a floodplain ordinance that meets or exceeds NFIP criteria, including adoption of the FEMA Flood Insurance Rate Maps (FIRMs) and is eligible for flood insurance through the NFIP and Emergency Public Assistance (PA) Funding.

Without participation in the NFIP:

- No resident would be able to purchase a NFIP flood insurance policy.
- Existing flood insurance policies would not be renewed.
- The Town and residents would not be eligible for Federal grants or loans for development made in identified flood hazard areas under programs administered by Federal agencies such as Department of Housing and Urban Development (HUD), Environmental Protection Agency (EPA), and Small Business Administration (SBA).
- No Federal disaster assistance would be available to repair insurable buildings located in identified flood hazard areas for damage caused by a flood.

No Federal mortgage insurance or loan guarantees would be available for identified flood hazard areas, including policies written by Federal agencies such as the Federal Housing Authority (FHA), Veteran's Administration (VA), and others.

As part of the NFIP, Town floodplain areas are classified on FEMA FIRMS as Special Flood Hazard Areas (SFHAs) ranging from VE (wave heights equal to or greater than three feet) to Coastal AE (wave heights of 1.5 feet to 3 feet) to AE (wave heights less than 1.5 feet). The FIRMs identify the level of flood risk and establish the basis for the cost of the flood insurance premiums as well as regulating construction in flood hazard areas (floodplains). Under the NFIP, buildings that pre-date the FIRM are treated dif-

The FIRMS are periodically updated by FEMA; however, they are based on the level of risk that exists at that time of FIRM development and do not include future changes to the flood risk (for example, due to climate change and sea level rise). Climate change will have a significant impact on the Town's future flood risk and the flood limits and of the Town's SFHAs will increase in the future.

Local Building Regulations

Construction within the Town are subject to the requirements of the federal, State and local building codes. In general, the existing Town building code. The Office of the Building Official is responsible for the enforcement of all construction and building codes in the Town.

The State code is the 2016 Connecticut State Building Code, including:

- 2012 International Building Code (IBC)
- 2012 International Existing Building Code
- 2012 International Residential Code (IRC)
- 2012 International Mechanical, Plumbing, and Energy Conservation Codes; and
- 2014 National Electric Code (NFPA 70)

Chapter 128 of the Old Saybrook Town Code serves as the local floodplain ordinance. The purpose of Chapter 128 is to promote the public health, safety and general welfare and to minimize public and private losses due to flood conditions in specific areas by provisions designed to:

- Restrict or prohibit uses that are dangerous to health, safety and property due to water or erosion hazards, or that result in damaging increases in erosion or in flood heights or velocities;
- Require that uses vulnerable to floods, including facilities that serve such uses, be protected against flood damage at the time of initial construction;
- Control the alteration of natural floodplains, stream channels and natural protective barriers that are involved in the accommodation of flood waters;
- Control filling, grading, dredging and other development that may increase erosion or flood damage; and
- Prevent or regulate the construction of flood barriers that will unnaturally divert floodwaters or that may increase flood hazards to other lands.

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The State Building Code also allows the Town to establish a Design Flood Elevation (DFE) that is higher than the BFE as the regulatory standard (which the Town has not done).

Town standards for FEMA AE Special Flood Hazard Zones:

New construction or substantial improvement of any commercial, industrial or other nonresidential structure located in Zone A or AE shall have the lowest floor, including basement, elevated at least one foot above the effective FEMA base flood elevation (BFE). Nonresidential structures located in all A and AE Zones may be dry flood-proofed (to at least one foot above the BFE) in lieu of being elevated, provided that (together with all attendant utility and sanitary facilities) the areas of the structure below the required elevation shall be:

- Watertight with walls substantially impermeable to the passage of water.
- Use structural components capable of resisting hydrostatic and hydrodynamic loads and the effects of buoyancy.
- Be certified by a registered professional engineer or architect that the design and methods of construction are in accordance with acceptable standards of this subsection; such certifications shall be provided to the Old Saybrook Town Engineer.

Town Standards for FEMA Coastal High-Hazard (VE and Coastal AE Zones):

- All buildings and structures shall be located landward of the reach of the Connecticut Coastal Jurisdiction Line as defined in C.G.S. § 22a-359, as amended by Public Act 12-101;
- All buildings or structures shall be elevated so that the lowest supporting horizontal member is located no lower than one foot above the base flood elevation and with all space below the lowest supporting horizontal member open so as not to impede the flow of water, except for breakaway walls as defined in § 128-6 and provided for in § 128-20D (5);
- All buildings and structures shall be securely anchored on pilings or columns. Pilings and columns and the attached structures shall be anchored to resist flotation, collapse, and lateral movement due to the effect of wind and water loads acting simultaneously on all building components. The anchoring and support system shall be designed with wind and water loading values which equal or exceed the one-hundred-year mean recurrence interval (one-percent annual chance floods and wind). There shall be no fill used for structural support;

Town standards for Critical Facilities:

New construction of critical facilities shall be elevated or dry floodproofed to the BFE for the five-hundred-year flood zone. The five-hundred-year flood is calculated by multiplying the elevation of the one-hundred-year BFE by 1.25.

Laws Related to the Taking of Private Property

Connecticut Constitutional Taking Law is complex and a simple summary is not possible here. Regardless, it is particularly relevant to coastal resilience and adaptation. A Managed Retreat adaptation strategy will, almost always, involve the voluntary or involuntary taking of private property. In addition, land use regulations (State or Old Saybrook) have the potential significantly impact property values and need to be considered with regard to constitutional prohibitions against regulations that take property. Further, discontinuing public services (e.g., maintaining public roads, sewer, electrical, water, emergency response, etc.) should also be considered with regard to constitutional prohibitions against regulations that take property. Connecticut and federal constitutions prohibit property taking without just compensation¹.

Public Access to Intertidal Lands and Waters

MHW denotes the seaward limit of private property in Connecticut and (per the Public Trust Doctrine) the lands and waters below MHW belong to all citizens of the State. The DEEP is tasked with preserving these rights by regulating the encroachment of private structures into the public trust area and by promoting public access opportunities.

Note:

1. A good overview of this issue is provided in "Coastal Management in the Face of Rising Seas: Legal Strategies for Connecticut", Grannis et al; Sea Grant Law and Policy Journal Vol. 5, No. 1; 2012.

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Presidential Executive Orders 11988, 13690 and 13653

Although not applicable to most projects within Old Saybrook, Presidential Executive Orders (EO) mandate resilience, flood mitigation and climate change for agencies, programs and projects that receive federal investment (such as a state highway project). There are also several other executive orders that address sustainability and greenhouse gas emissions.

- EO 11988 (1977; 2015 Amendments), Floodplain Management, addresses long and short term adverse impacts associated with the occupancy and modification of floodplains, requiring avoidance of direct or indirect support of floodplain development wherever there is a practical alternative. This EO led to federal regulation of floodplains.
- EO 13653 (2013), Preparing the United States for the Impacts of Climate Change, directs federal agencies to take a series of steps to make it easier for communities to strengthen their resilience to climate change. This EO is comprehensive and broad in scope, affecting essentially all federal, state and local agencies as well as the private sector, and directing all agencies to identify climate change risk and put in place adaptation plans including design guidelines and standards for federal projects.
- EO 13690 (2015, 2017 EO Repealed), Establishing a Federal Flood Risk Management Standard (FFRM) and a Process for Further Soliciting and Considering Stakeholder Input, was issued in January 30, 2015. This order was established to reduce the risk and cost of future flood disasters by requiring all federal investments in and affecting floodplains to meet higher flood risk standards. Executive Order 13690 was repealed on August 15, 2017 by the current administration. The overarching purpose of the EC 13690 was to provide new standards that give federal agencies incorporate risk reduction and have flexibility. The order required selection of one of three approaches to establish design flood elevations and flood hazard areas for use in siting, design, and construction and implementation of amended Executive Order 11988:
 - a. Use data and methods informed by best-available, actionable climate science;
 - b. Build two feet above the 100-year (1%-annual-chance) flood elevation for standard projects, and three feet above for critical buildings like hospitals and evacuation centers; or
 - c. Build to the 500-year (0.2%-annual-chance) flood elevation.

State and Federal Permits Related to Coastal Resilience and Adaptation

Compliance with the above-regulations requires that projects go through a permitting process. The following summarizes permits that are typically required for typical coastal resilience and adaptation projects in Connecticut:

1. DEEP Office of Long Island Sound Programs (OLISP) Coastal Permits:
 - a. Structures, Dredging and Fill and Tidal Wetlands;
 - b. Certificate of Permission (COP) (DEEP); and
 - c. Emergency Authorizations.
 - d. DEEP Section 401 Water Quality Certification;
 - e. USACE Section 404 Permit; and
 - f. USACE Section 10 Permit.

Dredging of Town coastal waterbodies such as the Connecticut, Oyster and Back Rivers, and Beamon, Hagar, Mud, Plum Bank and Ragged Rock Creeks and Long Island Sound requires the federal and State permits listed above. Dredge material can be used to restore or enhance marshes, beaches and dunes which can provide coastal resiliency for vulnerable waterfront areas. Such projects can be permitted as “ecological restoration” projects under the USACE and DEEP OLISP permit programs.

DEEP Permits

Coastal development activities are permitted through Connecticut’s Coastal Permit Program which includes DEEP Individual Permits, General Permits, Certificates of Permission and Emergency Authorizations. Individual Permits are typically required for activities which include new construction and other work for which a detailed review of potential environmental impacts is needed. The review process for an individual permit provides an opportunity for public comment.

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DEEP OLISP regulates a variety of activities in tidal wetlands and in tidal, coastal or navigable waters of the state through two different permit programs: Structures, Dredging and Fill; and Tidal Wetlands. The authorizing statutes (discussed previously) include: Sections 22a-359 through 22a-363f of the CGS (Structures, Dredging and Fill); CGS Sections 22a-28 through 22a-35 (Tidal Wetlands); CGS Sections 22a-90 through 22a-112 (Connecticut Coastal Management Act); Section 401 of the Federal Clean Water Act (33 U.S.C., Sec. 1314). The regulations include Sections 22a-30-1 through 22a-30-17 of the Regulations of Connecticut State Agencies.

A DEEP OLISP permit is required for any regulated activity in the tidal wetlands, or in tidal, coastal, or navigable waters of the state, including, but not limited to:

- the erection of structures including, but not limited to: breakwaters, docks, pilings, booms, marine railways, culverts, floats, jetties, ramps, utility lines/cables, roadways, walkways, buildings, decks, etc.;
 - dredging for the purposes of maintaining existing channels, turning basins, vessel berths, mooring areas and other waterfront facilities;
 - the erection of shoreline flood and erosion control or stabilization structures such as riprap, seawalls, bulkheads, and tide gates;
 - the placement of any obstacle, obstruction or encroachment;
 - maintenance or repair of certain existing structures, fill, obstructions, or encroachments;
 - all work occurring within tidal wetlands or waterward of the Coastal Jurisdiction Line incidental to any of the above activities including: any structure, activity, construction, staging of equipment, or site preparation; grading, excavating, dredging, disposing of dredged materials, filling, etc.; the removal of vegetation or other material, or other modification of a site;
 - draining, dredging, excavating, or removing of soil, mud, sand, gravel, aggregate of any kind or rubbish from any tidal wetland;
 - dumping, filling or depositing upon tidal wetlands any soil, stones, sand, gravel, mud, aggregate of any kind, rubbish or similar material, either directly or otherwise; and
 - erecting structures, driving piling, or placing obstructions in tidal wetlands.
- Requires state permit for placement of structures, fill or dredging below High Tide Line (HTL) consistent with CCMA policies. Incorporates regulation of commercial excavation of in-water sand and gravel, which requires \$2.00/cubic yard royalty payment. Activities that may be consistent include: a) filling along beach/dune for beach nourishment depending on quality of sand, minimizing water quality impacts, fill beach slope to maintain same natural beach slope, and limit destruction to dune vegetation/shore bird nesting/breeding habitat; and b) disposal of appropriate dredged material for beach nourishment or dune management.

Coastal general permits include:

- DEEP-OLISP-GP-2015-01 (Minor Coastal Structures): This general permit applies to the construction, installation, maintenance, removal and seasonal replacement of various minor structures within the tidal, coastal, and navigable waters of the state below the elevation of the coastal jurisdiction line and, where specifically allowed, in tidal wetlands.
- DEEP-OLISP-GP-2015-02 (Coastal Maintenance): This general permit applies to the maintenance of various coastal structures and activities within the tidal, coastal, and navigable waters of the state below the elevation of the coastal jurisdiction line and, where specifically allowed, in tidal wetlands.
- DEEP-OLISP-GP-2015-03 (Coastal Storm Response): This general permit applies to storm preparation and response activities within the tidal, coastal, and navigable waters of the state below the elevation of the coastal jurisdiction line and, where specifically allowed, in tidal wetlands.

DEEP also uses a short permit process for specific conditions:

- Certificates of Permission (COPs). COP's are certificates issued for certain minor activities involving dredging, erection of structures, or fill in any tidal, coastal or navigable waters of the state in accordance with sections 22a-361 through 22a-363c of the Connecticut General Statutes (CGS). The specific activities eligible under this program are listed in CGS section 22a-363b and include: substantial maintenance and minor alterations or amendments of authorized or pre-jurisdiction structures, fill, obstructions and encroachments; maintenance dredging of maintained permitted dredged areas; removal of derelict structures and vessels; and other enumerated minor activities. "Living Shorelines" can be permitted under a COP.

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- Emergency and Temporary Authorizations. CGS section 22a-6k authorizes DEEP to issue emergency and temporary authorizations for certain activities. Additionally, CGS section 22a-363d authorizes DEEP to issue emergency authorizations for activities subject to the Structures, Dredging and Fill Regulatory Program. Emergency authorizations are limited to situations that pose an imminent threat to human health or the environment.

US Army Corps of Engineers

The U.S. Army Corps of Engineers' (USACE) Regulatory Program involves the regulating of discharges of dredged or fill material into waters of the United States and structures or work in navigable waters of the United States, under section 404 of the Clean Water Act and section 10 of the Rivers and Harbors Act of 1899. A proposed project's impacts to these areas will determine what permit type is required.

An individual, or standard permit, is issued when projects have more than minimal individual or cumulative impacts, are evaluated using additional environmental criteria, and involve a more comprehensive public interest review. A general permit is issued for structures, work or discharges that will result in only minimal adverse effects. General permits are issued on a nationwide, regional, or state basis for particular categories of activities. There are three types of general permits – Nationwide Permits, Regional General Permits, and Programmatic General Permits. The USACE does not use Regional General or Programmatic General Permits in Connecticut.

Nationwide permits are issued by USACE on a national basis and are designed to streamline Department of the Army authorization of projects such as commercial developments, utility lines, or road improvements that produce minimal impact the nation's aquatic environment.

Section 401 of the Clean Water Act requires applicants to obtain a certification or waiver from the state water pollution control agency to discharge dredged or fill materials. This agency reviews the effect of the discharge on water quality standards. Section 307(c) of the Coastal Zone Management Act of 1972, as amended, requires applicants to obtain a certification or waiver that the activity complies with the state's coastal zone management program for activities affecting a state's coastal zone.

CEPA

The Connecticut Environmental Policy Act (CEPA) requires that an Environmental Impact Evaluation (EIE) be performed for certain State-funded projects. Each State department, institution or agency responsible for the project (proposed State action) is responsible for conducting an environmental assessment of project. The process involves public review and comment. State agencies sponsoring the project determine whether an EIE is required based on the results of an early public scoping process.

Several State and Federal permits regulate future coastal resilience projects as well as how the Town implements maintenance of key utilities, such as tide gates, required for flood mitigation and response. The US Army Corps of Engineers (USACE) regulates activities below mean high water (MHW) and the Connecticut Department of Energy and the Environment (DEEP) regulates activities below the Coastal Jurisdiction Line (CJL) - which is elevation 2.9 feet NAVD88 for Old Saybrook. Tidal wetlands are regulated by DEEP and the USACE and are not subject to local jurisdiction.

