



Regional Framework for Coastal Resilience in Southern Connecticut: Legal, Policy, and Regulatory Assessment

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Roger Williams University
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- serve as a legal and policy resource for the marine community by producing high quality research in partnership with stakeholders in Rhode Island, New England, the US, and around the world; and
- convene diverse experts to discuss cutting-edge issues in marine law and policy.

As an academic and research institution, MAI does not litigate or advocate. Instead, it provides high-quality research and analysis to inform the legal and policy debate.

MAI is a partnership of Roger Williams University School of Law, The University of Rhode Island (URI), and Rhode Island Sea Grant. Through this partnership, MAI has access to the resources of two universities and the Sea Grant Legal Network. Through the partnership with URI, MAI has access to faculty, staff, and research facilities at both URI's Graduate School of Oceanography and College of the Environment and Life Sciences. Located at Roger Williams University's School of Law, the only law school in Rhode Island, MAI is home to Rhode Island Sea Grant's Legal Program, one of only four dedicated Sea Grant Legal Programs in the country and the only one in the Northeast. In addition, the Sea Grant Law Fellow Program, housed at MAI, matches qualified law students with constituent groups to answer important and timely questions in ocean and coastal law and policy.

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The Regional Framework for Coastal Resilience in Southern Connecticut is a joint project managed collaboratively by the Southern Connecticut Regional Council of Governments, The Nature Conservancy, and the Connecticut Metropolitan Council of Government.



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Glossary

BFE	Base flood elevation	NAD	New England District of the U.S. Army Corps of Engineers
CAM	Coastal area management	NEPA	National Environmental Policy Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	NERR	National Estuarine Research Reserve
CHHA	Coastal high-hazard area	NFIP	National Flood Insurance Program
CJL	Coastal Jurisdiction Line	NHPA	National Historic Preservation Act
COG	Council of Governments	NMFS	National Marine Fisheries Service
CPRA	Louisiana Coastal Protection and Restoration Authority	NPDES	National Pollutant Discharge Elimination System
CTDOT	Connecticut Department of Transportation	OPM	Connecticut Office of Policy and Management
CWA	Federal Water Pollution Control Act ("Clean Water Act")	POCD	Plan of conservation and development
CZMA	Coastal Zone Management Act	POTW	Publicly owned treatment works
DEEP	Connecticut Department of Energy and Environmental Protection	PZB	Planning and zoning board
DPH	Connecticut Department of Public Health	PZC	Planning and zoning commission
DNR	Maryland Department of Natural Resources	RHA	Rivers and Harbors Act
DOT	U.S. Department of Transportation	SCRCOG	South Central Regional Council of Governments
EFH	Essential fish habitat	SESC	Soil erosion and sediment control
EPA	U.S. Environmental Protection Agency	SFHA	Special flood hazard area
ESA	Endangered Species Act	SWAP	State Wildlife Action Plan
FDPO	Flood damage prevention ordinance	TDR	Transferable development rights
FECB	Flood and Erosion Control Board	TIF	Tax increment financing
FECS	Flood and erosion control structure	TIP	Transportation improvement program
FIRM	Flood insurance rate map	TMDL	Total maximum daily load
FWS	U.S. Fish and Wildlife Service	USACE	U.S. Army Corps of Engineers
GNHWPCA	Greater New Haven Water Pollution Control Authority	USCG	United States Coast Guard
GP	General permit	WPCA	Water pollution control authority
HMP	Harbor management plan	WPCC	Water pollution control commission
HUD	U.S. Department of Housing and Urban Development	WQS	Water Quality Standards
IWW	Inland wetlands and watercourses	ZEO	Zoning enforcement officer
LCI	Livable City Initiative	ZBA	Zoning board of appeals
LID	Low impact development		
LiMWA	Limit of moderate wave action		
LRTP	Long-range transportation plan		
MAI	Marine Affairs Institute		
MetroCOG	Connecticut Metropolitan Council of Governments		
MPO	Metropolitan planning organization		
MSA	Magnuson-Stevens Fishery Conservation and Management Act		

1 Introduction

This report is a product of a project conducted by the Marine Affairs Institute (MAI), entitled “Regional Framework for Coastal Resilience in Southern Connecticut: Legal, Policy, Regulatory Assessment Identifying Options for Advancement of Natural/Green Infrastructure Projects and Improve Resilience in Coastal Municipalities” (“the project”).

MAI’s work on the project is part of a larger project to assess and advance opportunities to reduce risk from large-scale storm events, increase the viability and resiliency of natural ecosystems in the project area, and create a Regional Framework for Coastal Resilience in Southern Connecticut. The project focuses on increasing coastal resiliency through natural and green infrastructure and land use. It is managed via a partnership among The Nature Conservancy (TNC), the South Central Regional Council of Governments (SCRCOG) and Connecticut Metropolitan Council of Governments (MetroCOG, formerly Greater Bridgeport Regional Council). MAI’s component of this larger project assesses and audits the legal, policy, and regulatory authorities relevant to natural/green infrastructure and land use in the project area.

1.1 Scope and Methodology

The geographic scope of the project includes ten municipalities in southern Connecticut, each of which is a project partner (Fig. 1). Of these ten, Fairfield, Bridgeport, and Stratford are members of MetroCOG, while Milford, West Haven, New Haven, East Haven, Branford, Guilford, and Madison are members of SCRCOG.

MAI produced this report through a combination of independent legal research and interviews. Independent research was conducted through direct consideration of federal and state laws and municipal charters, ordinances, and regulations, as well as other relevant sources of legal authority. Interviews were conducted in accordance with a standard protocol (see Appendix A) and were held with key staff from participating municipalities, relevant regional governance organizations, state agency personnel, and other key stakeholders. These interviews were intended to introduce the project to key stakeholders and decision-makers and to gather information to support and strengthen MAI’s independent research. Interviews were conducted off the record and not-for-attribution.

MAI produced an initial draft of each chapter of this report based on research and interviews. Each chapter was provided to TNC for review and comment by the core project team, including SCRCOG and MetroCOG. After the draft report was completed, MAI provided it to interviewees, including municipal staff, for review and comment. Comments were incorporated into this final report.

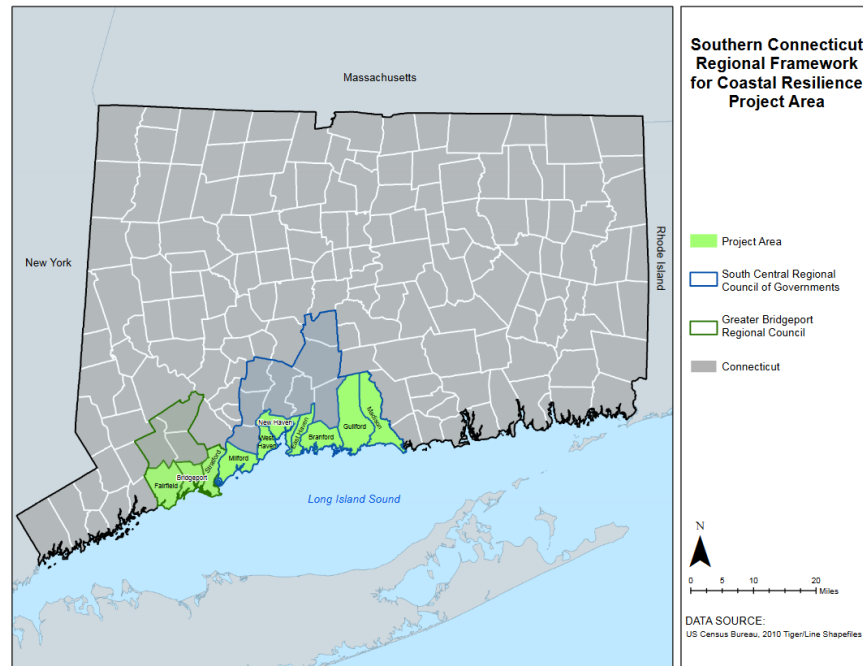


Figure 1. Project area (http://www.scrkog.org/documents/coastal_resilience/SC_RFCR_Map_6-2014.pdf)

1.2 Organization of this Report

This report is organized into three substantive chapters.

Chapter 2 provides an **inventory** of legal, policy, and regulatory mechanisms relevant to coastal natural/green infrastructure and land use in the project area. This inventory evaluates the relevant federal, state, regional, and municipal jurisdiction and the laws, regulations, ordinances, and other legal instruments that are used to regulate and manage coastal land use and development.

With this background, **chapter 3** provides a detailed **audit** of legal authorities relevant to specific topics that are central to regional coastal resiliency policy and planning. The audit is built around four key topics, including coastal land use practice; open space; flood hazard mitigation; and transportation infrastructure. Within each topic, the audit assesses each municipality's laws and policies to compare approaches to resolving specific coastal resiliency and land use challenges.

Finally, **chapter 4** synthesizes the **legal and policy options** for advancing coastal natural/green infrastructure and improving overall resilience of municipalities. This chapter identifies policy options associated with overcoming challenges in each of the four key regional coastal resiliency topics discussed in chapter 3. It also presents case studies that illustrate practices used in other states and municipalities to overcome coastal resilience challenges. **Chapter 5** offers concluding remarks.

2 Inventory of Legal, Policy, and Regulatory Mechanisms

This chapter introduces the current jurisdictional and procedural processes and language that:

- regulate coastal infrastructure improvement and modification and land use in the project area; and
- define and determine land use policy and decision along the coast in the project area.

This chapter is organized by level of government and by topic area. It includes sections on relevant direct federal and state regulatory authorities before considering legal mechanisms authorizing municipalities and regional governments to operate. Finally, it inventories legal authorities and processes on a municipality-by-municipality basis. In each of these sections, jurisdictional and procedural processes are separated into the following categories for ease of navigation and reference:

- planning and zoning, including building codes, flood and erosion control, coastal management, wetlands regulation, and other issues;
- water quality protection;
- parks, wildlife, and open space;
- transportation infrastructure, including navigation and highways; and
- shellfish.

In each instance, the relevant entities are reviewed along with their powers, jurisdiction, and processes. Where relevant, implementation is addressed as well by noting the existence of plans and other results of required processes. While some entities and laws are cross-cutting and relevant to more than one of these areas, each is described only in the section where it is most appropriate. In addition, not all topics are relevant in every jurisdiction; such absence of authority is noted where it occurs.

This inventory focuses on regulatory authorities with jurisdiction rather than attempting to comprehensively detail the numerous, highly technical fiscal and funding mechanisms that are or potentially could be connected or relevant to coastal green infrastructure. However, funding contracts or obligations could affect or limit municipal coastal management. For example, removal of a parking structure, funding for construction of which was through a bond secured on future parking revenues, might contradict the bond agreement or result in unanticipated or accelerated direct payments from municipal coffers. To avoid unpleasant surprises, consideration of applicable financial obligations is warranted when scoping specific coastal projects.

2.1 Federal Authorities

The federal government is relevant to coastal natural and green infrastructure development through a variety of regulatory and permitting programs, which are described in this section.

2.1.1 Requirements for Federal Actions, Permits and Licenses, and Funding

A wide range of federal legal authorities may require a federal permit, funding decisions, or other federal action to enable coastal green infrastructure and land use. Several key federal laws limit these federal actions and must be observed.

2.1.1.1 National Environmental Policy Act (NEPA)

NEPA requires assessment of the environmental impact of any major federal action not categorically excluded. Major federal actions may include funding as well as permitting under the federal clean water act or other laws. As a result, NEPA compliance is likely to be required for projects explicitly involving federal partners as well as those requiring permits from federal agencies.

2.1.1.2 Coastal Zone Management Act

The Coastal Zone Management Act (CZMA) provides that federal agency activities, federal license or permit activities, and federal financial assistance to state or local governments with reasonably foreseeable effects on coastal uses or resources of a state's coastal zone must be consistent with the enforceable policies of the state's federally-approved coastal zone management program.¹ Any objections or required conditions identified by the state may result in non-issuance of a permit or incorporation of required conditions into the action or permit. Connecticut has an approved coastal zone program managed by the Office of Long Island Sound Programs at the Connecticut Department of Energy and Environmental Protection (DEEP). The program includes enforceable policies under which federal consistency review can occur.²

2.1.1.3 Endangered Species Act

The Endangered Species Act (ESA) protects species of animals and plants that are listed by the U.S. Fish and Wildlife Service (FWS) as threatened or endangered. Among other requirements, the ESA requires all federal agencies to consult with FWS to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existing of any listed species or result in the destruction or adverse modification of critical habitat.³ This consultation will be required to most, if not all, coastal green infrastructure projects funded in whole or part by the federal government. Protected species, including the piping plover, are present in the study area at least seasonally, which may require project proponents to obtain permits before beginning proposed activities.

The ESA also directs the Secretary of the Department of Interior (which houses FWS) to acquire and manage land to conserve fish, wildlife, and plants (including but not limited to listed species), after consultation and through a cooperative agreement with the state concerned, through authority of the Fish and Wildlife Act of 1956; Fish and Wildlife Coordination Act; and Migratory Bird Conservation Act.⁴

¹ 16 U.S.C. § 1456; 15 C.F.R. Part 930.

² See Conn. Dep't Energy & Env'tl. Prot., *Overview of Connecticut's Coastal Management Program*, at <http://www.ct.gov/deep/cwp/view.asp?A=2705&Q=323536> (last visited August 31, 2016).

³ 16 U.S.C. § 1536.

⁴ *Id.* § 1534-35.

2.1.1.4 Clean Water Act

Section 401 of the Federal Water Pollution Control Act, more commonly known as the Clean Water Act (CWA), requires that no federal license or permit may be issued for an activity that may result in discharge unless the applicant provides a certification from the state where the discharge will originate. The certification must state that the permit will comply with the CWA, including with applicable state water quality standards.⁵ Once issued, permits or licenses must contain the necessary conditions or limitations needed to ensure compliance. DEEP is the certifying agency for Connecticut, and thus may be called upon to certify that a wide variety of relevant federal permits comply with state standards, including dredge and fill permits from the U.S. Army Corps of Engineers (USACE) and permits related to transportation.

2.1.1.5 Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act (MSA) is the primary legislation governing federal fisheries. While Long Island Sound is exclusively within state waters, certain provisions of the MSA may apply to and limit federal actions. Under the MSA, federal agencies are required to consult with the National Marine Fisheries Service (NMFS) prior to any action or activity that may adversely affect essential fish habitat (EFH) identified by NMFS or a regional fishery management council.⁶ The acting agency must consider NMFS comments and explain any deviations from the NMFS recommendations.

2.1.1.6 National Historic Preservation Act

The National Historic Preservation Act (NHPA)⁷ seeks to preserve historic sites and structures and to encourage state and local historic preservation efforts. It accomplishes this by creating a National Register of Historic Places under the National Park Service.⁸ Each federal agency⁹ is responsible for considering the effects of its undertakings (including funding or issuance of a license or authorization) on sites that may be eligible for inclusion on the register¹⁰, including providing an opportunity for comment by the Advisory Council on Historic Preservation, prior to approval of federal funds.¹¹ They are also required to undertake planning and actions to minimize harm to any National Historic Landmark prior to approval of any action that may directly and adversely affect the landmark.¹²

The program also includes provisions to establish state historic preservation programs, to be headed by a state historic preservation officer.¹³ The officer's duties include, among other things, surveying state property; nominating eligible property to the register; preparing and implementing a statewide historic preservation plan; and administering the program of federal assistance in the

⁵ 33 U.S.C. § 1341.

⁶ 16 U.S.C. § 1855; 50 C.F.R. Parts K, J.

⁷ 54 U.S.C. § 300101 *et. seq.*

⁸ *Id.* § 302101.

⁹ *Id.* § 306101.

¹⁰ As determined by regulation pursuant to *Id.* § 302103.

¹¹ *Id.* § 306108.

¹² *Id.* § 306107.

¹³ *Id.* § 302301.

state.¹⁴ State programs approved under the law must include mechanisms for local governments to carry out the program and receive funding once certified as meeting certain standards, including establishing an historic preservation review commission and enforcing state law for designation and protection of historic property.¹⁵

The NHPA also includes a Historic Light Station Program, under which the federal government may convey or sell historic light stations to nongovernmental entities for preservation and educational use, subject to certain terms and conditions, including reversion.¹⁶

2.1.2 Planning and Zoning

Federal laws generally do not directly regulate the practice of planning and zoning, which primarily remains a state power delegated to individual municipalities. However, federal legal authorities do limit how state and local land use decisions can be carried out in some cases and could indirectly affect coastal green infrastructure activities, particularly with respect to housing discrimination. In addition, federal authorities related to flooding and disaster planning apply to the actions of state and local governments.

2.1.2.1 National Flood Insurance Program

The National Flood Insurance Program (NFIP) provides flood insurance to at-risk properties in communities that adopt minimum floodplain management regulations instituting, among other things, building standards to minimize structural damage from inundation.¹⁷ The Federal Emergency Management Agency (FEMA) operates the NFIP and produces Flood Insurance Rate Maps (FIRMs) identifying Special Flood Hazard Areas (SFHAs) based on hydrographic modeling of coastal storms and riverine flooding. Properties within an SFHA which collateralize a federally-backed loan such as a mortgage are required to purchase flood insurance through a participating private insurer using a FEMA standard policy.¹⁸ All Connecticut municipalities participate in the NFIP.¹⁹

2.1.2.2 Disaster Mitigation Act

The Disaster Mitigation Act of 2000 requires municipalities to complete a FEMA-approved mitigation plan for eligibility to receive grants from the Pre-Disaster Mitigation program and post-disaster funds from the Hazard Mitigation Grants program.

¹⁴ *Id.* § 302303.

¹⁵ *Id.* §§ 302502, 302503.

¹⁶ *Id.* §§ 305102-305104.

¹⁷ National Flood Insurance Act of 1968, Pub. L. No. 90-448, 82 Stat. 572 (codified as amended at 42 U.S.C. § 4001-4129).

¹⁸ 42 U.S.C. § 4012a(b).

¹⁹ See Conn. Dep't Energy & Env'tl. Prot., *National Flood Insurance Program*, at <http://www.ct.gov/deep/cwp/view.asp?Q=446992> (last visited Aug. 31, 2016).

2.1.2.3 Housing Discrimination

Constitutional equal protection provisions may restrict how municipal planning and zoning activities are conducted to avoid a discriminatory impact on protected groups.²⁰ In addition, legislation administered by the Department of Housing and Urban Development (HUD) prohibits discrimination in programs receiving federal financial assistance, including Title VI of the Civil Rights Act (race, color, or national origin), section 504 of the Rehabilitation Act of 1973 (disability), section 109 of the Housing and Community Development Act of 1974 (programs and activities receiving community development block grant (CDBG) funding), title II of the Americans with Disabilities Act of 1990 (public housing); and Architectural Barriers Act of 1968 (handicap access).²¹ Coastal green infrastructure and land use programs, most notably those activities funded through CDBG and those proposing retreat or alteration of low-income or public housing, must ensure compliance with these laws and associated regulations.

2.1.3 Water Quality

The CWA is the nation's primary legislation governing water pollution, including discharges from point sources, nonpoint source pollution, and activities involving dredge or fill. The Environmental Protection Agency (EPA) administers most of the Act, while certain authorities may be delegated to the States, and USACE issues permits for dredge and fill activities. A number of provisions of the CWA are or may be relevant to coastal green infrastructure activities as discussed here.

Section 303 of the Act requires states to establish water quality standards (WQS) for all waters based on the "designated uses" of those waters and including criteria for levels of pollutants consistent with those uses.²² WQS must be reviewed every three years and approved by EPA.²³ States must further determine total maximum daily loads (TMDLs) of pollution for all waters that will not achieve the applicable WQS based on technology-based effluent limitations, which also must be EPA-approved.²⁴

The CWA requires a permit to discharge a pollutant from a point source into the waters of the United States through the National Pollutant Discharge Elimination System (NPDES).²⁵ NPDES permits must require the polluter to comply with other provisions of the Act, including technology-based effluent limitations established for different categories of point sources (established by EPA regulations) and water quality limitations to ensure that the receiving water attains water quality

²⁰ See, e.g., *Hamer v. Darien PZC*, Memorandum of Decision on Defendants' Motion for Summary Judgment, 3:11-cv-1845-WWE (D. Conn. Sept. 30, 2014) (granting in part and denying in part defendant's motion for judgment of plaintiff's claim under the 14th Amendment of the federal constitution that PZC denied approval to construct condominiums to restrict minorities rather than for the environmental, public safety, and other grounds proffered by the commission).

²¹ See U.S. Dep't Housing & Urban Dev., *Fair Housing Laws and Presidential Executive Orders*, at http://portal.hud.gov/hudportal/HUD?src=/program_offices/fair_housing_equal_opp/FHLaws (last visited Aug. 31, 2016) (summarizing HUD discrimination programs).

²² 33 U.S.C. § 1313.

²³ *Id.*

²⁴ *Id.* § 1313(d).

²⁵ *Id.* § 1311, 1342.

standards.²⁶ Specific requirements apply to publicly owned treatment works (POTWs), although waivers are available for those discharging into certain marine waters.²⁷ Certain stormwater discharges are regulated as point sources, including municipal storm sewer systems, which may be regulated through general permits.²⁸ EPA may delegate NPDES permitting authority to a state, and has done so for Connecticut; as a result, DEEP is the permitting agency for this program.

The primary CWA provisions to address pollution from “nonpoint sources” (e.g., runoff) are found in section 319, which requires states to submit to and receive approval from EPA a report identifying waters that are not expected to attain applicable water quality standards and major nonpoint source categories, among other information, and a management program identifying best management practices and measures that will be taken for controlling nonpoint source pollution from those sources, with a focus on watershed approaches.²⁹ EPA grants are available for implementation of approved management programs.³⁰

Other nonpoint source provisions are included in the “areawide waste treatment management” provisions of section 208 of the Act. This section required states to identify areas with substantial water quality control problems “as a result of urban-industrial concentrations and other factors,” designate a regional planning organization for such areas, and develop areawide management plans for controlling pollution in the areas both through improved point source and nonpoint source control and management.³¹ Subsequent NPDES and section permits were to be consistent with these plans. However, implementation of these provisions was not successful, and EPA no longer issues planning grants for implementation of these requirements.³²

Section 404 of the Act requires a permit to discharge dredged or fill material into waters of the United States, including wetlands and marine waters.³³ Permits are issued by USACE in compliance with guidelines set by EPA through regulations.³⁴ This authority substantially overlaps with Corps jurisdiction under section 10 of the Rivers and Harbors Act, as further discussed below. Discharges may be covered by a state, regional, or nationwide general permit for certain discharges; other discharges require an individual permit or letter of permission from USACE.³⁵ Compensatory mitigation will be required for permits.³⁶ Certain categories of discharges are exempt from permits, including maintenance and emergency reconstruction of dikes, dams, and other coastal infrastructure.³⁷ While states may obtain delegated section 404 permitting authority, Connecticut and most other states have not sought this authority to date.

²⁶ *Id.* § 1311, 1342.

²⁷ *Id.* § 1311 (h); 40 C.F.R. § 125.58 (defining terms).

²⁸ 40 C.F.R. §§ 122.26, 122.28

²⁹ 33 U.S.C. § 1329.

³⁰ *Id.*

³¹ *Id.* § 1288.

³² Env'tl. Law. Inst., LAW OF ENVIRONMENTAL PROTECTION § 13:28 (May 2016 ed.).

³³ 33 U.S.C. § 1344.

³⁴ *Id.*; 40 C.F.R. § 230.

³⁵ 33 U.S.C. § 1344.

³⁶ 33 C.F.R. §§ 320.4(r), 332.

³⁷ *Id.*

The CWA contains specific provisions applicable to Long Island Sound, which requires continuation of the Management Conference of the Long Island Sound Study, which was established under the National Estuaries Program.³⁸ The Conference, headed by a Director detailed from within EPA, is required to assist and support implementation of the Comprehensive Conservation and Management Plan for Long Island Sound, including through grants and assistance to distressed municipalities, which are defined under state law.³⁹

Additionally, there is a state water pollution control revolving loan fund, capitalized by EPA, which may be used only to make loans to a municipality, regional, state, or interstate agency for construction of POTWs, implementation of a management program, or development and implementation of a conservation and management plan.⁴⁰ Connecticut has established such a fund, called the Connecticut Clean Water Fund, which contains funds from four sources in addition to the water pollution control fund.⁴¹ The revolving loan program effectively replaced a prior grant program under the Act, which remains on the books.⁴²

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), administered by EPA, includes provisions governing remediation of polluted “brownfields” sites.

2.1.4 Parks, Wildlife, and Open Space

The federal government manages a range of types of public lands throughout the United States, but only a limited set of public lands-related programs are present and active in the study area. These activities and the federal requirements for state action related to parks and wildlife are detailed here.

2.1.4.1 National Wildlife Refuges

The National Wildlife Refuge (NWR) system was originally created through independent executive actions and legislation rather than through “organic” legislation.⁴³ President Theodore Roosevelt established the first NWR by Executive Order,⁴⁴ while later refuges have been established by statute. NWR lands have traditionally been used for “wildlife-dependent recreational activities”—primarily, for hunting of waterfowl. These lands are now important areas not only for hunting but also for bird conservation and other wildlife conservation efforts, particularly in wetlands and coastal areas.

³⁸ 33 U.S.C. §§ 1269, 1330.

³⁹ *Id.* § 1269; Conn. Gen. Stat. § 32-9p (defining Connecticut distressed communities).

⁴⁰ 33 U.S.C. §§ 1381, 1383.

⁴¹ DEEP, *Connecticut's Clean Water Fund*, at <http://www.ct.gov/deep/cwp/view.asp?A=2719&Q=325578> (last visited Aug. 31, 2016).

⁴² 33 U.S.C. § 1281 *et. seq.*

⁴³ Robert Fischman, *The National Wildlife Refuge System and the Hallmarks of Modern Organic Legislation*, 29 Ecology L.Q. 457, 459 (2002) (defining organic legislation as legislation that “serve[s] as a framework to understand not only the extent of congressional control, but also the types of management tools (such as planning and performance criteria) and the topics of public concern (such as recreational use and protection of biological diversity) that are involved with public land management.”).

⁴⁴ *Id.* at 472

Management of NWR system lands is now governed primarily by the 1997 National Wildlife Management Improvement Act.⁴⁵ Under the Act, FWS manages the NWR system⁴⁶ and is charged with administering them “for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.”⁴⁷

Management of each individual refuge must adhere to the mission of the NWR system as well as the purposes for which each refuge was individually created, including for compatible wildlife-dependent recreational uses (e.g., hunting and fishing).⁴⁸ Acquired lands cannot be disposed of or sold except in rare instances, and new uses of and development in refuges are limited.⁴⁹ FWS must develop a “comprehensive conservation plan” for each refuge and update it at not less than 15 year intervals.⁵⁰

Congress enacted legislation in 1984 establishing what is now the Stewart B. McKinney National Wildlife Refuge.⁵¹ The Stewart B. McKinney National Wildlife Refuge is made up of ten separate units along the southern Connecticut shoreline, four of which are located in the study area, permanently protecting substantial portions of largely undeveloped shoreline that may be an important asset for coastal resiliency:

- Outer Island (Branford);
- Falkner Island (Guilford);
- Milford Point (Milford); and
- Great Meadows Marsh (Stratford).⁵²

Work began in 2011 on the scoping process for the comprehensive conservation plan for Stewart B. McKinney NWR. The draft plan remains under development and has not been completed to date.

2.1.4.2 National Estuarine Research Reserves

The CZMA established the National Estuarine Research Reserve (NERR) system, through which NOAA and states partner to engage in stewardship, monitoring, research, training, and education activities under a management plan for designated NERR sites.⁵³ Coastal zone management programs and NERRs are eligible for grants under the program, including for property acquisition.⁵⁴ Connecticut is one of two eligible jurisdictions that has not established a NERR.

⁴⁵ *Id.* at 459; 16 U.S.C. § 668dd.

⁴⁶ Fischman, *supra* note 43, at 465.

⁴⁷ 16 U.S.C. § 668dd(a)(2).

⁴⁸ *Id.* § 668dd(a)(3) *et seq.*

⁴⁹ *Id.* § 668dd.

⁵⁰ *Id.* § 668dd(e).

⁵¹ Pub. L. 98-548, 98 Stat. 2774 (98th Cong. 1984) (establishing the Connecticut Coastal Wildlife Refuge); Pub. L. 101-443, 104 Stat. 1028 (101st Cong. 1987) (expanding and renaming refuge).

⁵² See U.S. Fish and Wildlife Serv., *Stewart B. McKinney National Wildlife Refuge*, at https://www.fws.gov/refuge/stewart_b_mckinney/ (last visited Aug. 31, 2016).

⁵³ 16 U.S.C. § 1461.

⁵⁴ *Id.* § 1456-1.

However, DEEP supports establishment of a NERR and has ongoing work to select a suitable site, which may or may not be within the study area.⁵⁵

2.1.4.3 State Wildlife Action Plans

Congress has authorized creation of state wildlife action plans (SWAPs), which are non-regulatory but may influence management and implementation. SWAPs:

are authorized by the Fish and Wildlife Conservation Act of 1980 [] and the Fish and Wildlife Programs Improvement and National Wildlife Refuge System Centennial Act of 2000. An approvable SWAP, which is required for a state to receive project funding under the State Wildlife Grants Program, must meet federal criteria, including identification of the problems that may adversely affect the species or their habitats and a determination of actions to be taken to conserve species and habitats identified in the plan as having the greatest conservation need. SWAPs are often touted as tools for conserving nongame wildlife populations proactively before they exhibit signs of decline.⁵⁶

Connecticut has developed, and in 2015 revised, an approved SWAP, including an updated list of species of greatest conservation need and ten key habitats, including tidal wetlands.⁵⁷

2.1.5 Transportation Infrastructure

2.1.5.1 Navigation

The US Coast Guard (USCG) administers legislation related to marine safety and security, including the Ports and Waterways Safety Act,⁵⁸ and certain aspects of the Rivers and Harbors Act.⁵⁹ USCG has promulgated regulations to implement these authorities, most notably covering aids to navigation requirements. Under these regulations, USCG determines whether structures, sunken vessels, and other obstructions placed by federal or state governments or nongovernmental actors are hazards to navigations; if so, they must be marked.⁶⁰

USACE implements a range of navigation provisions under federal law. Notably, the Rivers and Harbors Act requires a permit from the Corps to construct any structure in or over navigable waters or for work affecting the course, location, or condition of a water body.⁶¹ This authority is implemented jointly with section 404 of the CWA. The CWA also contains additional specific authority related to dredging. When required to comply with the CWA, the Secretary of the Army

⁵⁵ DEEP, *A National Estuarine Research Reserve (NERR) for Long Island Sound*, at <http://www.ct.gov/deep/cwp/view.asp?a=2705&q=575062> (last visited Aug. 31, 2016).

⁵⁶ Vicky J. Meretsky, et. al., *Migration and Conservation: Frameworks, Gaps, and Synergies in Science, Law, and Management*, 41 ENVTL. L. 447, 479-80 (2011).

⁵⁷ See DEEP, *Connecticut's Wildlife Action Plan* (rev. 2015), available at http://www.ct.gov/deep/cwp/view.asp?a=2723&q=329520&deepNav_GID=1719#Review (last visited Aug. 31, 2016).

⁵⁸ 33 U.S.C. § 1221 -1236.

⁵⁹ *Id.* § 409.

⁶⁰ 33 C.F.R. Parts 62, 64, 66.

⁶¹ 33 U.S.C. §§ 402, 403.

may remove and remediate sediments outside of and adjacent to a shipping channel as part of operation and maintenance of a navigation project, under a joint plan with, among others, interested state and local officials. This provision is directed at priority areas, which do not include Connecticut waters, but it could also be used elsewhere.⁶²

2.1.5.2 Highways

The U.S. Department of Transportation (DOT) is responsible for a wide range of transportation infrastructure, but largely operates as a funding agency for creation of federal-aid highways, transit projects, and other transportation activities. These funding activities will trigger federal environmental review and other associated consultation and review obligations; in some cases, as in airports, DOT agencies will also directly govern how infrastructure is operated.

A Metropolitan Planning Organization (MPO) must be established for each metropolitan area of more than 50,000 individuals.⁶³ MPOs are required to generate long-range transportation plans (LRTPs) and transportation improvement programs (TIPs) providing for development and management of transportation systems and facilities for the metropolitan area.⁶⁴ LRTPs must, among other requirements, include a discussion of potential environmental mitigation activities and areas to conduct these activities to restore and maintain environmental functions affected by the plan. TIPs must include priority projects, consistent with the plan, proposed for funding.⁶⁵ States are additionally directed to create a statewide transportation plan and TIP in coordination with the MPOs.⁶⁶ Grant funding is provided to states and MPOs for implementation of metropolitan planning and TIP activities, in addition to other funding for transportation infrastructure activities provided to the state.⁶⁷

DOT has created a climate adaptation plan as required by Executive Order 13514, which identifies key actions for the department, including “actions to ensure that Federal transportation investment decisions address potential climate impacts in statewide and metropolitan transportation planning and project development processes” and work “to incorporate climate variability and change impact considerations in asset management.”⁶⁸ As a result of the continuing implementation of these priorities, DOT funding may seek consideration of climate resilience in transportation planning in the region, including through green infrastructure approaches.

2.1.6 Shellfish

While Long Island Sound lies entirely within state jurisdiction, activities in these waters remain subject to federal jurisdiction and permitting programs.

⁶² *Id.* § 1273.

⁶³ 23 U.S.C. § 134.

⁶⁴ *Id.*

⁶⁵ *Id.*

⁶⁶ *Id.* § 135.

⁶⁷ *Id.* §§ 104, 105.

⁶⁸ U.S. Dep’t of Transp., *Climate Adaptation Plan: Ensuring Transportation Infrastructure and System Resilience*, available at <https://www.transportation.gov/sites/dot.dev/files/docs/DOT%20Adaptation%20Plan.pdf> (last visited Aug. 31, 2016).

- Shellfish are not regulated under federal fisheries laws, but may exist in areas of defined EFH.
- While shellfish production does not require a permit as a point source of pollution, other CWA requirements apply. Most notably, the New England District (NAD) of USACE permits these and other activities involving placement of structures on the seabed under section 404 of the CWA and section 10 of the Rivers and Harbors Act of 1899 (RHA). NAD has issued a General Permit (GP) under both the CWA and RHA authorizing qualifying certain shellfish activities to proceed without an individual letter of permission or permit. Qualifying activities must have no more than minimal direct, secondary and cumulative adverse environmental impacts, cannot unreasonably interfere with navigation, and must comply with a range of additional conditions, including aquaculture-specific conditions. USACE provides a pre-screening form to assist aquaculture project qualification for this GP. In addition, in reviewing GP applications NAD will ensure compliance with and/or carry out required consultations under the ESA, NHPA, EFH provisions of the Magnuson-Stevens Fishery Conservation and Management Act, and Federal Navigation Projects, among others.
- Shellfish production may include placement of a structure in the ocean that requires application to the US Coast Guard for authorization to mark the structure as a private aid to navigation.⁶⁹

2.2 State Authorities

A wide variety of state laws and programs are relevant to coastal resiliency in southern Connecticut. These authorities both create direct requirements for action and delegate certain powers for mandatory or optional action by municipalities. This section reviews these legal authorities.

2.2.1 Requirements for State Actions, Permits, and Licensing

The Connecticut Environmental Policy Act⁷⁰ requires that before taking an action which would have a major impact on a natural resource of the state, a state agency must undergo a review process which generates an Environmental Impact Evaluation,⁷¹ which is akin to an environmental impact statement created pursuant to the National Environmental Policy Act.⁷² State agency actions include providing funds and granting a permit.⁷³ The procedure begins with a scoping process, including public comment, to determine relevant environmental concerns.⁷⁴ Upon determination that a significant impact could potentially exist, the agency circulates a draft environmental impact evaluation to state and local agencies for review and to the public for comment.⁷⁵ A final evaluation,

⁶⁹ 33 C.F.R. §§ 64.21; 64.06 (defining structure to include any fixed or floating obstruction).

⁷⁰ Conn. Gen. Stat. §§ 22a-1 - 22a-1i.

⁷¹ Conn. Agencies Regs. §§ 22a-1a-1 - 22a-1a-12.

⁷² See 42 U.S.C. § 4321 *et seq.*

⁷³ *Id.* § 22a-1a-1(2).

⁷⁴ *Id.* § 22a-1a-7c.

⁷⁵ *Id.* § 22a-1a-7,8.

with response to comments, is submitted along with a Record of Decision to the Office of Policy and Management (OPM) for procedural review.⁷⁶

2.2.2 Delegations to Local and Regional Governments

Connecticut is a home rule state in which a wide range of authorities are delegated to municipal governments—and in limited circumstances, to regional governance entities—rather than set at the state level. This section reviews the state laws making and setting the terms of these delegations.

2.2.2.1 Municipal Governance

Connecticut law provides for three types of municipalities: towns, cities, and boroughs.⁷⁷ The town is the basic unit of municipal government and may include within its geographic boundaries a subordinate “political subdivision” in the form of a borough or city government.⁷⁸ Thus, a borough or city may exist within a town, with some independent self-governance authority. These subdivisions may be consolidated with the town.⁷⁹

Municipalities obtain their authority and jurisdiction from state law, as directed by the state constitution.⁸⁰ Municipal authorities may derive from a special act that applies to a single municipality (e.g., a city incorporation act) or from generally applicable state laws.⁸¹ The Home Rule Act⁸² has been the primary source of authority for municipal governance throughout Connecticut since the 1950s and sets out basic municipal powers of self-government. The powers delegated to municipalities under the Home Rule Act are broad and interpreted expansively,⁸³ but municipal legislation implementing these powers cannot conflict with state law.⁸⁴

The Home Rule Act authorizes each municipality to adopt a charter to be its “organic law” setting out the structure and operation of its government and which supersede any prior charter or special act established by the state government.⁸⁵ The charter must create a legislative authority and executive from among several options, and must create the boards and commissions required by law.⁸⁶ Each municipality in the study area has established a town charter, with varying structures—

⁷⁶ *Id.* § 22a-1a-9.

⁷⁷ Conn. Gen. Stat. § 7-187 (defining “municipality”).

⁷⁸ *Id.* § 7-195.

⁷⁹ *Id.*

⁸⁰ CONN. CONST. art. 10.

⁸¹ Since 1969, the state constitution has barred the state assembly from enacting special legislation to dictate the powers, organization, or offices of single municipalities. CONN. CONST. art. 10 § 1.

⁸² Conn. Gen. Stat. § 7-187 *et seq.*

⁸³ *City of Norwich v. Housing Authority of Town of Norwich*, 216 Conn. 112, 118-19 (1990) (“[H]ome rule legislation was enacted ‘to enable municipalities to conduct their own business and control their own affairs to the fullest possible extent in their own way ... upon the principle that the municipality itself knew better what it wanted and needed than did the state at large, and to give that municipality the exclusive privilege and right to enact direct legislation which would carry out and satisfy its wants and needs.’”), *quoting Fragley v. Phelan*, 126 Cal. 383, 387, (Cal. 1899).

⁸⁴ *Kaluszka v. Town of East Hartford*, 760 A.2d 1282 (Conn. Super. Ct. 1999).

⁸⁵ Conn. Gen. Stat. § 7-188.

⁸⁶ *Id.* § 7-193.

generally, either a town meeting legislature led by selectmen or a town council legislature led by a mayor.⁸⁷

State law grants municipalities a range of powers under the Home Rule Act (to municipalities with qualifying charters⁸⁸) and other generally applicable laws. These powers include, among others, the ability to regulate and control town finances and property, public services, public works and utilities (including water and sewer), highways, buildings, and the environment (including protection and improvement of coastal areas, wetlands, and areas adjacent to waterways).⁸⁹ Municipal governments must use ordinances when exercising these powers to make permanent law,⁹⁰ which they must publish in a code of ordinances.⁹¹

State law authorizes municipalities to establish a variety of boards, commissions, and corporations to carry out specific roles in addition to their general authority to establish municipal departments. These entities generally operate quasi-independently from the municipal government and enjoy specific governmental powers, such as the power to acquire property by condemnation. These are indicated below, as appropriate.

2.2.2.2 Regional Governance

The state constitution provides that the assembly may prescribe methods whereby municipalities may establish regional governments and establish compacts among themselves and regional governments, as well as the powers and roles of such regional governments and compacts.⁹² Two or more municipalities may jointly perform any function that each has the authority to do separately by approval of an agreement by each participant.⁹³

Connecticut has by statute established regional councils of government (COGs) under the authority of OPM, which is authorized to designate planning regions in the state for coordinated planning and regional delivery of state and local services.⁹⁴ A COG can be established within each planning region by ordinance of 60% or more of the municipalities within the region.⁹⁵ Each member municipality is represented on the COG by its chief executive or a designee.⁹⁶

COGs may participate in grant, donation, or other programs available to political subdivisions of the state, including the state grant-in-aid program through the regional planning incentive account,⁹⁷

⁸⁷ Additional requirements for the roles and operations of town meetings, selectmen, and other town officers are provided in state law. *See id.* § 7-1 *et seq.*

⁸⁸ Conn. Gen. Stat. § 7-194.

⁸⁹ *Id.* § 7-148.

⁹⁰ *Id.* § 7-148.

⁹¹ *Id.* § 7-148a.

⁹² CONN. CONST. art. 10 § 2.

⁹³ Conn. Gen. Stat. § 7-148cc.

⁹⁴ *Id.* § 16a-4a, 4c

⁹⁵ *Id.* § 4-124j

⁹⁶ *Id.* § 4-124k

⁹⁷ *Id.* § 4-66k. These funds support each COG by right, *id.*, and additionally can be used to support grants through the performance incentive grant program administered by OPM in which COGs, or municipalities acting through COGs or an economic development district, can propose joint provision of services on a

and may provide regional services.⁹⁸ They must report annually to OPM on their activities,⁹⁹ and every ten years must make a regional plan of conservation and development (POCD) showing recommendations for general use of the area, which must include, among other things, “protection of environmental assets critical to public health and safety” and (for regions contiguous to Long Island Sound) which “shall be designed to reduce hypoxia, pathogens, toxic contaminants and floatable debris” in the sound.¹⁰⁰ The plan is not binding on the members, but COGs may assist other agencies in implementation of the regional plan or evaluating feasibility of projects¹⁰¹ and may recommend arrangements for operation of municipal, regional, or inter-municipal arrangements. Finally, multiple COGs may establish inter-council committees to recommend policies of an inter-regional nature.¹⁰²

Other regional planning authorities and programs include the following:

- OPM is responsible for reviewing regional tax-based revenue sharing programs and establishment of regional asset districts.¹⁰³
- *Interlocal agreements*: Any municipality or district may enter into an interlocal agreement to provide services for joint use and benefit, and may establish an interlocal advisory board to recommend programs and policies for cooperation or uniform action under the agreement.¹⁰⁴ Agreements must contain specific elements, including, for example, dispute resolution provisions, and have the legal status of an interstate compact.¹⁰⁵
- *Municipal and metropolitan districts*: Any two or more municipalities may form a district to perform any function which each of the municipalities can perform separately. Municipal districts are governed by boards drawn from each municipality.¹⁰⁶ Any “metropolitan area” – defined as a central city of 25,000 or more and any municipality within 15 miles – may join together to form a metropolitan district to perform functions, services, or works that each may perform separately. Metropolitan district member municipalities may adopt a charter for the district providing for a district government.¹⁰⁷
- *Regional economic development commissions*: Any two or more municipalities with economic development commissions may by ordinance form a regional commission with the same duties and authority that their member municipal districts enjoy under state law.¹⁰⁸

regional level or plans towards such regional services, which may be funded through the regional planning incentive account. *Id.* § 4-124s.

⁹⁸ Conn. Gen. Stat. § 8-31b.

⁹⁹ *Id.*

¹⁰⁰ *Id.* § 8-35a.

¹⁰¹ *Id.* §§ 8-35a, 8-35c.

¹⁰² *Id.* § 8-35e.

¹⁰³ *Id.* § 4-124t.

¹⁰⁴ Conn. Gen. Stat. §§ 7-339a, 339b.

¹⁰⁵ *Id.* §§ 7-339f, 339k.

¹⁰⁶ *Id.* § 7-330.

¹⁰⁷ *Id.* § 7-335.

¹⁰⁸ *Id.* § 7-137.

- *Regional economic development districts:* COGs, regional economic development commissions, tax-exempt organizations, or other approved organizations may create a regional economic development district with the approval of the Economic and Community Development, OPM, and US Department of Commerce. The boundaries of such districts must encompass one or more state planning area.¹⁰⁹ Each district must develop a comprehensive economic development strategy containing certain information, which must be submitted to the relevant COG(s) for comment and recommendations and then to ECD and OPM for review and approval.¹¹⁰ Once approved, the district can be designated by the governor and can request federal designation and receive priority grants for economic development.¹¹¹ Projects in an approved plan are automatically eligible for state bond funding.¹¹²

2.2.3 Planning and Zoning

Connecticut has, for the most part, delegated planning and zoning to municipalities and regional organizations, as described below. However, Connecticut has established a state POCD as well as a variety of other mandatory plans.

The state POCD is the official policy for the executive branch in matters pertaining to land and water resource conservation and development and has been adopted by the legislature.¹¹³ Plan revision is under the oversight of OPM,¹¹⁴ which is further authorized to “Formulate and prepare state-wide or interregional plans for the physical, social and economic development of the state” for a variety of issues, including land and water use; transportation; environmental considerations; and housing.¹¹⁵ OPM also has oversight of regional planning in the state, as discussed below.

The state POCD must include certain elements, such as greenways system, transportation, and housing, as well as consideration, identification of impacts, and recommendations for infrastructure siting associated with “increased coastal erosion...as anticipated in sea level change scenarios.”¹¹⁶ Once adopted by the legislature, certain actions by state agencies must be consistent with the plan, including acquisition or development of real property or transportation facilities. The plan must also be considered in other plans that must be developed under other state or federal laws.¹¹⁷ The current plan, adopted by the legislature in 2013, applies for the years 2013-18.¹¹⁸

¹⁰⁹ Conn. Gen. Stat. § 32-741.

¹¹⁰ *Id.* § 32-742.

¹¹¹ *Id.* §§ 32-743, 32-744, *citing id.* §§ 8-186 - 8-200.

¹¹² *Id.* § 32-745.

¹¹³ *Id.* § 16a-24.

¹¹⁴ Conn. Gen. Stat. §§ 16a-26; Conn. Agencies Regs. § 16a-32-1 *et seq.* (setting out process).

¹¹⁵ Conn. Gen. Stat. § 16a-4a.

¹¹⁶ *Id.* § 16a-27.

¹¹⁷ *Id.* § 16a-31.

¹¹⁸ OPM, *Endorsement Letter from Continuing Committee* (May 15, 2013), *available at* http://www.ct.gov/opm/lib/opm/igp/org/cdupdate/2013-2018_cd_plan.pdf (last visited Aug. 31, 2016).

In addition to the state POCD, various agencies must create and maintain “major state plans,” with which other activities must be consistent (as described where relevant below).¹¹⁹ Such plans include the:

- plan for development of outdoor recreation;¹²⁰
- solid waste management plan;¹²¹
- state-wide plan for the management of water resources;¹²²
- state-wide environmental plan;¹²³
- historic preservation plan adopted under the National Historic Preservation Act;¹²⁴
- state-wide facility and capital plan;¹²⁵
- consolidated plan for housing and community development;¹²⁶
- water quality management plan adopted under the federal Clean Water Act;¹²⁷
- plans for managing forest resources;¹²⁸ and
- Connecticut River Atlantic Salmon Compact.¹²⁹

Other plans are also required but may not be defined as “major plans,” including the statewide economic strategic plan.¹³⁰

2.2.3.1 Municipal Planning and Zoning

Connecticut provides a range of authorities governing the municipal planning and zoning process. Municipalities are empowered to create zoning commissions and planning commissions (which are often combined as a planning and zoning commission, or PZC¹³¹) by ordinance, which must follow requirements of state law.¹³² Zoning boards of appeals (ZBAs, equivalently referred to in some jurisdictions as a Board of Zoning Appeal) are required in each municipality with a zoning commission¹³³

The planning commission must establish a POCD at least once every 10 years, which must contain certain elements, and those for municipalities contiguous to Long Island Sound must be:

- consistent with municipal coastal program requirements;

¹¹⁹ Conn. Gen. Stat. § 25-231 (defining plans).

¹²⁰ *Id.* § 22a-21.

¹²¹ *Id.* § 22a-228.

¹²² *Id.* § 22a-352.

¹²³ *Id.* § 22a-8.

¹²⁴ 16 U.S.C. § 470 *et seq.*

¹²⁵ Conn. Gen. Stat. § 4b-23.

¹²⁶ *Id.* § 8-37t.

¹²⁷ 33 U.S.C. § 1251 *et seq.*

¹²⁸ Conn. Gen. Stat. § 23-20.

¹²⁹ *Id.* § 26-302.

¹³⁰ *Id.* § 32-1o.

¹³¹ *Id.* § 8-4a.

¹³² *Id.* §§ 8-1 (zoning commission), 8-19 (planning commission). Town fire, sewer, and other districts are considered municipalities for zoning purposes. *Id.* § 8-1a.

¹³³ Conn. Gen. Stat. § 8-5.

- made with reasonable consideration for restoration and protection of the ecosystem and habitat of Long Island Sound; and
- designed to reduce hypoxia, pathogens, toxic contaminants and floatable debris in the sound.¹³⁴

A zoning commission is empowered to make regulations consistent with the plan governing buildings and structures, land uses and activities, and other aspects of zoning.¹³⁵ Such regulations must include mandatory provisions including soil erosion and sediment control, must consider the environment of the sound (in contiguous communities), and may or must include additional requirements and restrictions, such as transfers of development rights, floodplains, overlay zones, site plans, and water-dependent uses.¹³⁶

Zoning regulations can require a special permit or exception issued by either a zoning or planning commission for certain activities. Certain municipal actions must be referred to the commission for a report. Other commission actions include approval of subdivisions (with notice to the regional COG).¹³⁷

- *Historic district commissions:* Municipalities may establish historic districts¹³⁸ within which erection or alteration of a structure or building is prohibited (except for ordinary repair and maintenance or structures required for public safety due to a dangerous condition) until submission of an application for a certificate of appropriateness has been submitted to and approved by the historic district commission.¹³⁹ Historic properties and associated historic properties commissions are also authorized, with similar certificate of appropriateness requirements that apply to earthworks and sites of historic or archaeological significance as well as to structures.¹⁴⁰
- *Neighborhood revitalization zones:* Any municipality may by resolution establish these zones to develop a collaborative process for federal, state, and local governments to revitalize blighted or deteriorated neighborhoods through neighborhood planning.¹⁴¹ This planning is carried out by a neighborhood revitalization planning committee, which develops a strategic plan for revitalization.¹⁴² The municipal legislative body may implement the plan by ordinance, which shall create a neighborhood revitalization committee to oversee and periodically report on implementation.¹⁴³ A municipality may establish a process for requesting waiver of state or local environmental, health, and safety codes and regulations that jeopardize implementation of the plan, and such requests must

¹³⁴ *Id.* § 8-23.

¹³⁵ *Id.* § 8-2.

¹³⁶ *Id.* §§ 8-2a – 8-3a.

¹³⁷ *Id.* § 8-2.

¹³⁸ Conn. Gen. Stat. § 7-147a.

¹³⁹ *Id.* § 7-147d.

¹⁴⁰ *Id.* §§ 7-147p – 7-147y.

¹⁴¹ *Id.* § 7-600.

¹⁴² *Id.* § 7-601.

¹⁴³ Conn. Gen. Stat. § 7-602.

be considered.¹⁴⁴ OPM is the lead agency for coordination of state services to these zones, including oversight of a state grant-in-aid program and chairing the state Neighborhood Revitalization Zone Advisory Board.¹⁴⁵

- *Special districts*: Towns may establish self-governing districts for a range of specific purposes, including construction, maintenance, and operation of roads and street lighting; drains and sewers; recreational facilities; flood and erosion control systems; water systems; zoning and planning commissions (and zoning boards of appeal); and buildings.¹⁴⁶ Such districts include beach associations.¹⁴⁷ Districts are considered quasi-municipal corporations and have powers including taxation and regulation.
- *Special services districts*: Any municipality may establish a special services district or districts to promote economic health of the municipality.¹⁴⁸ Such districts are led by a board of commissioners and may be endowed by municipal ordinance with powers including holding real estate and constructing and operating public improvements; further, municipalities may delegate their responsibilities to provide services to the district.¹⁴⁹

2.2.3.2 Building Code

Connecticut has adopted a State Building Code,¹⁵⁰ which constitutes the building code for all municipalities.¹⁵¹ The Code covers structural, materials, electrical, plumbing, and fire control requirements. Existing buildings undergoing repair may opt to follow either the 2003 or 2009 Code amendment.¹⁵² Exempt projects include retaining walls less than 3 feet high, sidewalks, and work done by federal agencies.¹⁵³

All Connecticut municipalities must adopt¹⁵⁴ and enforce¹⁵⁵ the State Building Code. Municipalities may propose amendments to the code, either applying generally or applying only within the municipality in order to manage “conditions [which] exist within a municipality [and] which are not generally found within other municipalities.”¹⁵⁶ The State Building Inspector can also grant individual variances to the Building Code.¹⁵⁷

Registered historic structures are exempt from compliance with the Building Code, “provided such exemptions shall not affect the safe design, use or construction of such property.”¹⁵⁸

¹⁴⁴ *Id.* § 7-605.

¹⁴⁵ *Id.* §§ 7-607, 7-608.

¹⁴⁶ *Id.* § 7-326.

¹⁴⁷ Conn. Gen. Stat. § 7-324.

¹⁴⁸ *Id.* § 7-339m.

¹⁴⁹ *Id.* §§ 7-339n, 7-339q, 7-339t.

¹⁵⁰ *Id.* § 29-253(a).

¹⁵¹ Conn. Agencies Regs. § 29-252-1d 101.1 *et seq.*

¹⁵² *Id.* § 101.2(2).

¹⁵³ *Id.* §§ 105.2(2),(4), 105.2.5.

¹⁵⁴ Conn. Gen. Stat. § 29-253(a).

¹⁵⁵ *Id.* § 29-260.

¹⁵⁶ *Id.* § 29-254(a).

¹⁵⁷ *Id.* § 29-254(b).

¹⁵⁸ *Id.* § 29-259.

2.2.3.3 Coastal Management Act

The Coastal Management Act seeks to “consider in the planning process the potential impact of a rise in sea level, coastal flooding and erosion patterns on coastal development so as to minimize damage to and destruction of life and property.” It does this by creating policies for coastal development and authorizing municipalities to create and implement coastal programs consistent with those goals, including through development and review of coastal site plans. The Act applies within the defined coastal area.¹⁵⁹

The Act includes policies for coastal development, facilities, and uses and for coastal land and water resources in the coastal area, which are to be effectuated through existing legal and regulatory authorities. These policies do not explicitly demand the use of green infrastructure, but do endorse it by stating a preference against “non-structural mitigation measures” and defining key terms to include green and natural infrastructure. Specifically, “feasible, less environmentally damaging alternatives” for providing shoreline protection and restoring coastal resources and habitat and “reasonable mitigation measures and techniques” both include green infrastructure techniques, including dune restoration and living shorelines techniques.¹⁶⁰ These terms are key elements of coastal site reviews.

The Act authorizes coastal municipalities to adopt a coastal program for the coastal area to effectuate the goals and policies of the Act, including through revisions to its municipal conservation and development plan, other municipal plans (harbor improvement plans, community development plans, etc.), and zoning regulations and associated ordinances (wetlands, sewerage, etc.).¹⁶¹ Revised land use plans and regulations must be submitted to the Commissioner of DEEP and (for land use plans only) to the regional council of governments for review and comment prior to adoption.¹⁶²

Municipalities must undertake reviews of coastal site plans, which must be submitted for certain planning and zoning activities. These activities include zoning approval of buildings, uses, structures, or flood and erosion control structures or systems (FECS) located in the coastal area, as well as subdivision plans, applications for special exceptions or permits, variances, and municipal projects. Coastal site plans must contain information on the proposal’s relationship to coastal resources.

The municipal zoning commission, or a special district designated for this purpose under a special act for the area, must review coastal site plans for buildings, uses, and flood control structures other than certain activities that may be exempted by regulation, including activities for the purpose of conserving or preserving coastal resources.¹⁶³ Coastal site plan review supersedes other required

¹⁵⁹ Conn. Gen. Stat. § 22a-94 (defining coastal area as the area from the shoreline landward to the farthest inland of: a) the 100-year flood zone as defined under the National Flood Insurance Act, b) 1000 linear feet landward of mean high water, or c) the inland boundary of tidal wetlands). Municipalities may establish the coastal boundary, which must approximate the state boundary. *Id.*

¹⁶⁰ *Id.* § 22a-92.

¹⁶¹ *Id.* § 22a-101

¹⁶² *Id.* §§ 22a-102, 103

¹⁶³ *Id.* §§ 22a-105, 109.

planning and zoning reviews and incorporates both coastal management and other zoning considerations.¹⁶⁴ The commission must determine whether the proposal will have acceptable potential adverse impacts on coastal resources, based on criteria set out in the Act (including consistency with the goals and policies of the Act).¹⁶⁵ Favorable site plan reviews must result in a written determination detailing the finding that the project is consistent with the Act and “incorporate[] as conditions or modifications all reasonable measures which would mitigate the adverse impacts of the proposed activity” (including green infrastructure approaches).¹⁶⁶ FECS, defined as hard stabilization to the exclusion of living shorelines projects, are subject to additional requirements and may only be approved after certain additional findings, including that there is no feasible, less damaging alternative and that all reasonable mitigation measures and techniques are implemented.¹⁶⁷ Flood and erosion control site plans must be referred to DEEP, which may comment on and make recommendations on them, which must be considered.¹⁶⁸

The Commissioner of DEEP is required to assist municipalities in implementing the Act, including through preparation of a model municipal coastal program, including model regulations, planning methodologies, regulatory methods, and criteria and procedures for coastal site reviews.¹⁶⁹ The Commissioner is also authorized to enter into agreements with federal agencies and represents the state in consistency review under the CZMA.¹⁷⁰

The Act additionally requires that state actions be consistent with the goals and policies of the Act. These include DEEP’s own regulatory programs, including permitting related to wetlands, stream encroachment, dredge and fill, and water quality certification;¹⁷¹ all “major state plans,” other than the state POCD; and actions by any state department, institution, or agency recommending or initiating action in the coastal boundary that may significantly affect the environment.¹⁷²

2.2.3.4 Floodplain Management

DEEP is charged with floodplain management, including but not limited to coordinating, monitoring, and analyzing the floodplain management activities of state and local agencies and flood control projects (with sole jurisdiction to initiate flood control projects with federal agencies), regulate state agency actions affecting floodplains or impacting drainage facilities on property owned or controlled by the state.¹⁷³ State agencies must obtain DEEP approval prior to undertaking activities in or affecting the floodplain.¹⁷⁴

¹⁶⁴ Conn. Gen. Stat. § 22a-109

¹⁶⁵ *Id.* § 22a-106.

¹⁶⁶ *Id.* §§ 22a-105, 106

¹⁶⁷ *Id.* § 22a-109.

¹⁶⁸ *Id.* § 22a-109.

¹⁶⁹ Conn. Gen. Stat. § 22a-95.

¹⁷⁰ *Id.* § 22a-96

¹⁷¹ *Id.* § 22a-98

¹⁷² *Id.* § 22a-100.

¹⁷³ *Id.* § 25-68c

¹⁷⁴ Conn. Gen. Stat. § 25-68d.

DEEP is also required to develop guidelines and a model ordinance for municipalities to use in revising their ordinances regarding flood storage and water conveyance for floodplains for nontidal waters.¹⁷⁵

Connecticut has also created other flood-related programs.

- DEEP must establish and administer a hazard mitigation and floodplain management grant program to reimburse applicants (including municipalities) for costs incurred in the reduction or elimination of long-term risks to human life, infrastructure and property from natural hazards, including from floods, and in retaining the ability of floodplains to carry flood waters.¹⁷⁶ Highest priority projects include preparation of municipal hazard mitigation plans and participation in the NFIP community rating system program; execution of mitigation projects is a secondary priority.¹⁷⁷ Municipal hazard mitigation or evacuation plans must incorporate sea level change scenarios as published by NOAA.¹⁷⁸
- DEEP may pay for the full or partial cost of flood or erosion control systems for the benefit of state park or state-owned land, municipally owned or controlled littoral or riparian land, or privately owned property.¹⁷⁹ DEEP is further authorized to enter into agreements with the federal government and municipal flood and erosion control boards to construct small flood control or tidal and hurricane control and navigation systems. Qualifying projects are primarily gray infrastructure (dams, etc.) but may be “nonstructural.”¹⁸⁰
- DEEP is authorized, in consultation with the Department of Public Health (DPH), to enter into agreements or compacts with other states and the federal government regarding, among other things, flood control and harbor and river improvements.¹⁸¹ DEEP is also the designated shore erosion agency of the state for cooperating with the Beach Erosion Board of DOD pursuant to the RHA, and as such is charged with studying shoreline, harbor, river, and island conditions to devise and project “methods and works for preventing and correcting shore erosion and damage to ... property ... and to prevent inundation of improved property by storms, erosion, and ravages of the sea.”¹⁸²
- DEEP is authorized to create a pilot program to encourage low-impact approaches to shoreline protection, including living shorelines approaches, including expedited permitting and a shoreline management study conducted in conjunction with outside partners.¹⁸³
- Connecticut has authorized the State Bond Commission to issue bonds for buy-out programs for homeowners and businesses that receive FEMA funding for flood hazard mitigation or property damage.¹⁸⁴

¹⁷⁵ *Id.* § 25-68i

¹⁷⁶ *Id.* § 25-68k

¹⁷⁷ *Id.*

¹⁷⁸ *Id.* § 22a-68o.

¹⁷⁹ Conn. Gen. Stat. § 25-71

¹⁸⁰ *Id.* § 25-76

¹⁸¹ *Id.* § 22a-337.

¹⁸² *Id.* § 22a-337

¹⁸³ *Id.* § 22a-363h.

¹⁸⁴ Conn. Gen. Stat. § 22a-904b.

2.2.3.5 Waterway Encroachment

DEEP may establish encroachment lines along waterways and flood-prone areas considered for stream clearance, channel improvement, or other flood control or alleviation measures.¹⁸⁵ No person may place or maintain an obstruction, encroachment or hindrance beyond these lines without a permit from the Commissioner.¹⁸⁶ Such permits are issued or denied based on the effect of the proposal on the flood-carrying and water storage capacity of the waterway and floodplain; flood height; hazards to life and property; and protection and preservation of natural resources and ecosystems.¹⁸⁷ DEEP was previously required to make stream channel encroachment lines, but in 2013 the legislature changed this provision to make this activity discretionary and explicitly revoked all prior encroachment lines set by the Commissioner.¹⁸⁸ As a result, the state stream channel encroachment line program is not active at this time.

DEEP stream channel encroachment lines are separate from and in addition to the lines which municipalities are authorized to make as part of their planning processes under state law, except that DEEP may alter municipal lines and DEEP has exclusive jurisdiction over any encroachments over lines set by DEEP in a municipality.¹⁸⁹ Certain activities are permitted by right or authorized under general permits within stream lines, but they do not specifically include green or natural infrastructure techniques.¹⁹⁰ The Commissioner is also required to make a comprehensive study of all conditions relating to the control of flood waters, establishment of encroachment limits, river and harbor improvements, obstructions, or encroachments, and other matters.¹⁹¹

Municipalities have additional, independent authority with regard to waterway encroachment and obstruction. A municipality may require a person to remove “debris, wreckage or other similar material” from any waterway or tidal water for which they are responsible which may “prevent the free discharge of flood waters.”¹⁹² A municipality also may, by ordinance, set lines along a waterway “beyond which, in the direction of the waterway, no permanent obstruction or encroachment shall be placed by any private person” without written permission from the town’s legislative authority or a delegated commission with jurisdiction.¹⁹³ The locations of the lines must be based on the area “which would be inundated by a flood similar in size to one or more recorded floods which have caused extensive damages in the area or on a size of flood computed by” generally accepted methods. Does not apply to Commissioner of Transportation authority over harbors and navigable waters or to pipelines, bridges, dams, or other infrastructure.

¹⁸⁵ *Id.* § 22a-342.

¹⁸⁶ *Id.*

¹⁸⁷ *Id.* § 22a-342.

¹⁸⁸ *Id.* § 22a-344(b).

¹⁸⁹ Conn. Gen. Stat. § 22a-348.

¹⁹⁰ *Id.* § 22a-349.

¹⁹¹ *Id.* § 22a-350.

¹⁹² *Id.* § 7-146.

¹⁹³ *Id.* § 7-147.

2.2.3.6 Municipal Flood and Erosion Control

Any municipality may establish a Flood and Erosion Control Board (FECB).¹⁹⁴ These boards are empowered to plan, lay out, acquire, construct, reconstruct, repair, maintain, supervise and manage a flood or erosion control system, including by holding real property, easements, rights-of-way, and riparian rights.¹⁹⁵ Flood or erosion control systems are structures or facilities useful in preventing or ameliorating floods or erosion caused by either fresh or salt water, including but not limited to dikes, berms, dams, piping, groins, jetties, seawalls, embankments, revetments, tide-gates, water storage areas, ditches, and drains.¹⁹⁶ These systems may be funded by bonds, assessments, or tax income.¹⁹⁷

Boards may enter into agreements with the federal and/or state governments as needed to satisfy conditions for authorization of a flood or erosion control system, provided that the system is approved by the Commissioner of DEEP.¹⁹⁸ The Commissioner may also enter into agreements with municipal boards for the purpose of constructing flood or erosion control projects or systems, whose plans, system, and construction will be under the Commissioner's direct control but funded by the state and/or municipality.¹⁹⁹ Two or more municipalities may also undertake joint improvement or protection projects, with cost shares to be determined by the Commissioner.²⁰⁰

2.2.3.7 Watershed Planning

Any town or city legislative body may request the advice and assistance of the DEEP Commissioner in initiating a watershed protection and flood prevention project for its watershed or sub-watershed area from the USDA NRCS. If authorized by USDA, DEEP may evaluate if a project is feasible, request USDA to develop a detailed watershed plan, and create a watershed committee comprised of one member from each municipality in the watershed. If USDA creates a watershed plan and 2/3 of the municipalities in the watershed vote to approve it, DEEP and USDA will cooperate to implement the plan. Plans may include "structural, nonstructural or land-treatment measures" for flood control or other purposes, including open space.²⁰¹ DEEP may acquire and sell property for works of improvement under a plan and may order the relocation or removal of public service facilities as needed;²⁰² municipalities may also acquire land planned for use for works of improvement, which must be used for park and recreation purposes.²⁰³ DEEP has not issued a list of eligible river corridors to date.²⁰⁴

¹⁹⁴ Conn. Gen. Stat. § 25-84.

¹⁹⁵ *Id.* §§ 25-85, 25-86.

¹⁹⁶ *Id.* § 25-85.

¹⁹⁷ *Id.* § 25-87.

¹⁹⁸ *Id.* § 25-94.

¹⁹⁹ Conn. Gen. Stat. § 25-95.

²⁰⁰ *Id.* § 25-97.

²⁰¹ *Id.* §§ 22a-319, 318 (defining "works of improvement").

²⁰² *Id.* §§ 22a-320, 321, 324.

²⁰³ *Id.* § 22a-323.

²⁰⁴ See Conn. Light & Power, *Connecticut Siting Council Application: Interstate Reliability Project*, at 5-14 (2011), available at http://www.transmission-nu.com/residential/projects/IRP/csc/v1/V1_Section%205.pdf (last visited Aug. 31, 2016) (noting personal communication indicating that DEEP had taken no action as of the date of that application).

In addition, DEEP conducts watershed planning in collaboration with other stakeholders as part of its efforts to resolve nonattainment of water quality standards as a result of nonpoint source water pollution (see below for more information). These efforts include development of watershed management plans that include the nine key elements identified by EPA.²⁰⁵

2.2.3.8 Dams

All dams, dikes, and other structures which might endanger life or property by breaking away are subject to DEEP jurisdiction.²⁰⁶ A permit from DEEP is required to constrict, alter, remove, or conduct other activities on regulated structures; DEEP will notify relevant municipal entities, including the inland wetland agency and planning, zoning, and conservation commissions.²⁰⁷ DEEP was required to conduct a survey and map showing the location of dams and similar structures in each town, which was to be filed with each town clerk. Owners of regulated structures were also required to register with DEEP by 2015 the location and dimensions of each structure.²⁰⁸

2.2.4 Water Quality

The management of stormwater and sanitary discharges are important to coastal resiliency. This section reviews the many state laws relevant to the regulation of water pollution control as well as delegations to local governments related to sewage treatment facilities.

2.2.4.1 Water Pollution Control

The federal CWA sets a floor for water pollution control: while state programs must be consistent with federal law, states are not precluded from establishing their own water pollution control laws which can be more restrictive than federal requirements. Connecticut has established its own water pollution legislation, which is administered by DEEP. The Department is charged with development of a comprehensive plan for the prevention, control and abatement of water pollution, compliance with the federal CWA, and other responsibilities.²⁰⁹ In this capacity, it regulates and permits disposal systems, including under authority delegated by USEPA pursuant to the CWA, but may delegate to municipalities or regional sewer authorities the authority to review and approve sanitary sewer systems.²¹⁰

2.2.4.1.1 Water Quality Standards

DEEP is responsible for setting water quality standards for state waters, which set water use goals and policy for managing surface and ground water quality; establish criteria that prescribe allowable parameters and conditions for each water quality classification; and set out classification maps showing the water quality class for each water.²¹¹ Uses not meeting the relevant water quality

²⁰⁵ See DEEP, *Watershed Based Plans and Watershed Management Plans*, at http://www.ct.gov/deep/cwp/view.asp?a=2719&q=335504&deepNav_GID=1654 (last visited Aug. 31, 2016).

²⁰⁶ Conn. Gen. Stat. § 22a-401.

²⁰⁷ *Id.* § 22a-403.

²⁰⁸ *Id.* § 22a-409.

²⁰⁹ *Id.* § 22a-424.

²¹⁰ *Id.* § 22a-416. DEEP has provided for delegation to Departments of Health by memorandum of agreement. Conn. Agencies Regs. § 22a-2a-2.

²¹¹ Conn. Gen. Stat. § 22a-426; Conn. Agencies Regs. §§ 22a-426-1 - 22a-426-9. DEEP was also required, by 2013, to produce maps of anticipate combined sewer overflows. Conn. Gen. Stat. § 22a-424a.

standard for their use classification are considered impaired, and Connecticut is required to establish total maximum daily loadings for such waters. It has done so for a variety of waters, including some coastal waters in the study area.²¹²

2.2.4.1.2 Discharge Permits

No person or municipality may cause pollution of state waters or discharge waste without a permit from DEEP, the conditions of which will be informed by the relevant water quality standards.²¹³ DEEP may order abatement of pollution, including to one municipality or jointly to multiple municipalities.²¹⁴ Any municipality ordered to abate pollution must establish a water pollution control authority (WPCA).²¹⁵

2.2.4.1.3 Stormwater

DEEP is also responsible for regulation of stormwater. It was required in 2007 to create a pilot program to fund four municipalities to establish stormwater authorities and programs;²¹⁶ while one municipality in the study area (New Haven) was selected, its program is no longer active.²¹⁷ Stormwater authorities were empowered to charge fees to property owners for stormwater control and management and could modify these fees, for reasons including, but not limited to, impervious surface area.²¹⁸ It has also recently revised its stormwater requirements applicable to municipal storm sewer systems to adhere more closely to EPA's proposals in neighboring states, including requiring catch basin cleaning and other requirements. Other enforceable policies for nonpoint coastal stormwater management are also in force as part of the state coastal zone management program.²¹⁹

2.2.4.1.4 Other DEEP Programs

Long Island Sound is impaired due to nitrogen leading to hypoxia. EPA DEEP was required to prepare a plan to achieve, by 2015, the interim goal for minimum dissolved oxygen in Long Island Sound as set out in the comprehensive conservation and management plan for the Sound; the plan was required to have priority actions, costs and timeframes.²²⁰ To that end, Connecticut and New

²¹² See DEEP, *Total Maximum Daily Load*, at <http://www.ct.gov/deep/cwp/view.asp?a=2719&q=325604> (last visited Aug. 31, 2016); DEEP, *A Total Maximum Daily Load Analysis to Achieve Water Quality Standards for Dissolved Oxygen in Long Island Sound*, at 7 (2000), available at http://www.ct.gov/deep/lib/deep/water/lis_water_quality/nitrogen_control_program/tmdl.pdf (last visited Aug. 31, 2016) (summarizing long island sound WQS).

²¹³ Conn. Gen. Stat. §§ 22a-427, 430.

²¹⁴ *Id.* §§ 22a-428 – 433.

²¹⁵ *Id.* § 22a-458.

²¹⁶ *Id.* § 22a-497.

²¹⁷ See Jan Spiegel, *A Storm Rages Over CT's Stormwater*, CONN. MIRROR Feb. 25, 2015, available at <http://ctmirror.org/2015/02/25/a-storm-rages-over-cts-stormwater/> (last visited Aug. 31, 2016).

²¹⁸ Conn. Gen. Stat. §§ 22a-498, 499a.

²¹⁹ See generally DEEP, *Connecticut's Coastal Nonpoint Source Pollution Control Program*, at http://www.ct.gov/deep/cwp/view.asp?a=2705&q=323554&deepNav_GID=1709 (last visited Aug. 31, 2016).

²²⁰ Conn. Gen. Stat. § 22a-485.

York have jointly set out a total maximum daily load for nitrogen in Long Island Sound.²²¹ Connecticut has issued a general permit for POTWs and established the Nitrogen Credit Exchange, a credit trading system applicable to POTWs, as tools for achieving state nitrogen reduction goals.²²²

There is a clean water fund, and the Commissioner must maintain a priority list of eligible water quality projects (including point source, nonpoint source, and sewer projects) after considering factors that include the necessity and feasibility of measures to mitigate the rise in sea level over the project lifecycle.²²³ Other grant programs are available, including grants for storm and sanitary sewer separation projects.²²⁴

2.2.4.1.5 Municipal Review for Water Pollution Impacts on Coastal Resources

The Coastal Management Act requires that federal, state, and local policies eliminate or minimize “adverse impacts on coastal resources” arising from several types of coastal development, facilities, and uses.²²⁵ The definition of “adverse impacts on coastal resources” includes water quality degradation resulting from the “significant introduction” of pollutants into coastal waters or from the “significant alteration” of coastal waters (e.g., temperature, pH).²²⁶ The required coastal site plan review process is one of the chief mechanisms through which these adverse impacts can be avoided.²²⁷ Under state law, municipalities have an obligation to consider the water quality impacts of proposed developments during coastal site plan review, and they may deny development permission for projects where coastal site plan review indicates a potential to degrade water quality or cause other adverse impacts on coastal resources.²²⁸ Other state and federal permits and reviews must also be consistent with these goals and policies and thus consider water quality impacts arising from coastal development, facilities, and uses.

2.2.4.2 Dredge and Fill

DEEP is responsible for regulation of dredging and erection of structures and placement of incidental fill and work in state tidal and coastal waters seaward of the Coastal Jurisdiction Line (CJL), defined as the elevation of the highest predicted tide between 1983 and 2001.²²⁹ A permit or certificate from DEEP is required to engage in these activities (which include moorings, aquaculture, and other activities).²³⁰ Certificates of permission are available for maintenance and other activities, including certain natural and green infrastructure (open water marsh projects, beach nourishment e.g.).²³¹ DEEP may require that a person who removes sand, gravel, or other

²²¹ DEEP, *A Total Maximum Daily Load Analysis to Achieve Water Quality Standards for Dissolved Oxygen in Long Island Sound*, at http://www.ct.gov/deep/lib/deep/water/lis_water_quality/nitrogen_control_program/tmdl.pdf (last visited Aug. 31, 2016).

²²² Conn. Gen. Stat. §§ 22a-521 - 22a-527.

²²³ *Id.* §§ 22a-475, 478.

²²⁴ *Id.* § 22a-440.

²²⁵ *Id.* § 22a-92.

²²⁶ Conn. Gen. Stat. § 22a-93(15).

²²⁷ *See id.* §§ 22a-105, 22a-109.

²²⁸ *Sams v. Dep’t of Energy & Envtl. Prot.*, 63 A.3d 953 (Conn. 2013).

²²⁹ Conn. Gen. Stat. § 22a-359, 360; *see also* DEEP, *Coastal Jurisdiction Line - Fact Sheet*, at <http://www.ct.gov/deep/cwp/view.asp?A=2705&Q=511544> (last visited Aug. 31, 2016).

²³⁰ Conn. Gen. Stat. § 22a-361.

²³¹ *Id.* § 22a-363b.

material make that material available at cost to a coastal municipality (or for a reasonable fee to municipal fire, sewer, or other districts), for use in a flood or erosion control system or beach nourishment or habitat restoration project.²³² DEEP has issued 15 general permits relevant to coastal activities that it has re-characterized as falling within 3 categories: minor coastal structures; coastal maintenance; and coastal storm response. Some of these permits include coastal infrastructure work (e.g., seawall repair, beach grading), but no green infrastructure approaches currently appear to be within the definition of a general permit.²³³

2.2.4.3 Wetlands and Watercourses

Connecticut regulates the activities that can occur in multiple types of wetlands and watercourses. Most notably for coastal resiliency, the state maintains sole regulatory authority over tidal wetlands, while municipalities regulate activities affecting inland wetlands and watercourses. This section reviews these authorities, as well as regulation of encroachments into watercourses.

2.2.4.3.1 Tidal Wetlands

Connecticut has enacted a statute protecting tidal wetlands for reasons including, but not limited to, providing for flood protection.²³⁴ To protect these areas, no “regulated activities” can occur on wetlands without a permit from DEEP.²³⁵ Regulated activities include but are not limited to dredging, excavation, dumping, and erection of structures, but do not include conservation activities conducted by or under the authority of DEEP or construction or maintenance of aids to navigation.²³⁶ The Commissioner of DEEP is authorized to issue regulations to implement these requirements, consistent with the provisions of the federal CZMA and associated regulations related to tidal wetlands.²³⁷ DEEP is also directed to conduct tidal wetlands restoration and enhancement projects, including but not limited to open water marsh management and coastal culvert and tide gate management.²³⁸

2.2.4.3.2 Inland Wetlands and Watercourses

The Inland wetlands and watercourses act sits alongside the tidal wetlands protections and applies to wetlands and watercourses other than those protected by the tidal wetlands provisions.²³⁹ The state requires municipal regulation of activities affecting these wetlands and watercourses, including by requiring each municipality to establish an inland wetlands agency (or authorize an existing board or commission) to implement the inland wetlands and watercourses act, alone or

²³² *Id.* § 22a-361.

²³³ See DEEP, *General Permits: An Environmental Permitting Fact Sheet*, at <http://www.ct.gov/deep/cwp/view.asp?a=2709&q=324154> (last visited Aug. 31, 2016) (listing general permits)

²³⁴ Conn. Gen. Stat. § 22a-28.

²³⁵ *Id.* § 22a-32. See also *id.* § 22a-29 (defining “wetland” and “regulated activity”). Tidal wetlands are defined to include areas bordering on or beneath tidal waters, including areas formerly connected to tidal waters that are at or below one foot above local extreme high water, and on which wetlands plants are capable of growing. *Id.* § 22a-29.

²³⁶ *Id.* § 22a-29.

²³⁷ *Id.* § 22a-30.

²³⁸ *Id.* § 22a-35a.

²³⁹ Conn. Gen. Stat. § 22a-38.

jointly with other municipalities.²⁴⁰ The requirements of these programs include issuance of regulations to establish the boundaries of inland wetland and watercourse areas, provide for permitting of regulated activities, and address other needs.²⁴¹ Once the regulations are issued, regulated activities in the designated areas then require a permit from the designated municipal authority.²⁴²

2.2.4.4 Water Supply

DPH has jurisdiction over and duties concerning water supplies, companies, and operators of water treatment plans and distribution systems.²⁴³ Operators must maintain approved water supply plans.²⁴⁴ DPH is required to administer a procedure to coordinate the planning of water supply systems,²⁴⁵ and does so through delineation of water supply management areas, water utility coordinating committees for each area, and a coordinated water system plan developed by each committee and approved by DPH, with which permits must be consistent.²⁴⁶ State law includes provisions for water source protection, including identification of sources requiring protection²⁴⁷ and limitations on sale of source areas.²⁴⁸ Additional aquifer protection measures are under DEEP and municipal jurisdiction.²⁴⁹

2.2.4.4.1 Water Planning Council

There is a state Water Planning Council that includes the Public Utilities Regulatory Authority, DEEP, OPM, and DPH and which may establish an advisory group.²⁵⁰ The Council is charged with studying the water market and resources at a regional and statewide level, and with reporting its findings annually to the legislature.

The Water Planning Council is required, by July 2017, to prepare a state water plan, which may be relevant to coastal infrastructure although focused on the availability and conservation of freshwater supplies. In developing the plan, the Council must design a unified planning program and budget; consider regional water and sewer facilities plans; consider the impact of climate change on availability and abundance of water resources and the importance of climate resiliency; and undertake other aspects of water planning.²⁵¹ The plan must, among other elements, recommend steps to increase the climate resiliency of existing water resources and infrastructure, consider regional and local water and sewer plans and water reuse, and develop and recommend

²⁴⁰ *Id.* § 22a-42.

²⁴¹ *Id.*

²⁴² *Id.* § 22a-42a.

²⁴³ *Id.* § 25-32.

²⁴⁴ Conn. Gen. Stat. § 25-32d.

²⁴⁵ *Id.* § 25-33c.

²⁴⁶ *Id.* §§ 25-33c - 25-33j.

²⁴⁷ *Id.* § 25-33q.

²⁴⁸ *Id.* §§ 25-33k - 33l; 25-37g; 25-37a - 25-37i.

²⁴⁹ *See generally* Conn. Gen. Stat. §§ 22a-354a - 22a-354cc.

²⁵⁰ *Id.* § 25-33o.

²⁵¹ *Id.* § 22a-352.

strategies to address climate resiliency including the impact of extreme weather events. The General Assembly is to review and the plan will take effect upon legislative approval or inaction.²⁵²

2.2.4.5 Municipal and regional authorities and entities

Municipalities may designate a board or commission, or a regional water authority or sewer district where one exists, to manage the municipal sewerage system and ensure the effective management of community sewerage systems not owned by the municipality.²⁵³ Designated authorities must prepare and periodically update a water pollution control plan for the municipality complying with standards set out in law.²⁵⁴ Water pollution control authorities may be operated jointly with one or more other municipalities.²⁵⁵

The state water pollution control laws authorize any two or more municipalities to create, by concurrent ordinance, a regional water pollution control authority.²⁵⁶ Such regional authorities have the power to provide waste management and water pollution control services, with jurisdiction according to the ordinance, as well as powers otherwise accorded to municipal authorities.²⁵⁷

2.2.4.5.1 Soil and Water Conservation Districts

DEEP is authorized to create one or more soil and water conservation districts or boards, as well as a Council to coordinate their efforts.²⁵⁸ It has done so through the establishment of 5 districts and the Council on Soil and Water Conservation.²⁵⁹ All of the municipalities in the study area are within the southwest district bar Madison, which is in the southcentral district.²⁶⁰ Districts may be authorized, among other activities, to develop soil and water conservation, erosion, and sediment control programs, priorities, and workplans and to acquire and hold property.²⁶¹ In practice, DEEP has required them, among other things, to provide advice to the Commissioner on soil and water matters, assist in DEEP programs including on flood prevention, develop annual reports, set long-range goals, objectives, and priorities, set priorities for the district, and develop and implement annual plans.²⁶² They may also review and comment on local and regional projects, develop written policies and enter agreements with municipalities, and acquire property.²⁶³ The Council coordinates the activities of the districts with DEEP and other agencies and may propose regulations to DEEP. In addition, it is required to develop guidelines for soil erosion and sediment control on land being developed, including model regulations for use by municipalities, the most

²⁵² *Id.*

²⁵³ *Id.* §§ 7-246, 246f, 247.

²⁵⁴ Conn. Gen. Stat. § 7-246(b).

²⁵⁵ *Id.* § 7-272.

²⁵⁶ *Id.* § 22a-500.

²⁵⁷ *Id.* §§ 22a-501 to -518.

²⁵⁸ *Id.* § 22a-315.

²⁵⁹ Conn. Agencies Regs. §§ 22a-315-11, -15.

²⁶⁰ *Id.* § 22a-315-11. These entities are the successors to prior county boards.

²⁶¹ Conn. Gen. Stat. § 22a-315.

²⁶² Conn. Agencies Regs. § 22a-315-14.

²⁶³ *Id.*

recent version of which were released in 2002.²⁶⁴ Municipal land use regulations must require provisions for soil erosion and sediment control, submission of a control plan with applications for development, and municipal certification that the plan complies with the regulations.

2.2.4.5.2 New England Water Pollution Control Commission

Connecticut is a member of the New England Interstate Water Pollution Control Compact, which applies to interstate streams, ponds, and lakes and to tidal waters ebbing and flowing past the boundaries of two states. The compact creates the New England Water Pollution Control Commission, which is charged among other duties (e.g., sampling and testing, education and training) with creating water quality standards for various use classifications and may coordinate with New York state agencies regarding waters flowing between New York and New England. Each state member must classify its waters and submit them to the Commission for approval.²⁶⁵

2.2.4.5.3 Interstate Environmental Commission

Connecticut, New York, and New Jersey have entered into an interstate compact creating the Interstate Environmental District, which in Connecticut includes areas of Long Island Sound, estuaries, and tidal waters west of the easterly point of New Haven harbor (Morgan Point), as well as the Housatonic River as far north as the northern borders of Stratford and Milford.²⁶⁶ A Commission is created by the compact and charged with classifying the district waters as recreational non-recreational, or other classes as determined by the Commission. The compact restricts discharge of sewage into the district, except after treatment to effluent standards set out for each of the classes of waters.²⁶⁷ The Commission is empowered to make regulations and orders with regard to pollution of the waters of the district, and to compel compliance with the compact and its orders, including by referring the violation to DEEP for enforcement under state law, prior to use of its own authority.²⁶⁸ The Commission is also charged with cooperating and advising state and district authorities with jurisdiction over stream pollution and may prepare a general plan of practicable and economical methods of conforming to the standards set out in the compact.²⁶⁹

2.2.5 Parks, Wildlife, and Open Space

DEEP is responsible for supervision of all lands acquired by the state for public recreation and the preservation of natural beauty or historic reservation.²⁷⁰ These lands include, but are not limited to, state parks and forests purchased by the state, natural area preserves declared by the Governor, and other lands designated by the Commissioner as “lands of public use and benefit.”²⁷¹ DEEP may

²⁶⁴ Conn. Gen. Stat. § 22a-328; DEEP, *2002 Connecticut Guidelines for Soil Erosion and Sediment Control* (2002), at <http://www.ct.gov/deep/cwp/view.asp?A=2720&Q=325660> (last visited Aug. 31, 2016).

²⁶⁵ Conn. Gen. Stat. § 22a-309.

²⁶⁶ *Id.* § 22a-294.

²⁶⁷ *Id.*

²⁶⁸ *Id.* §§ 22a-297 – 300.

²⁶⁹ *Id.* §§ 22a-294, 301.

²⁷⁰ Conn. Gen. Stat. § 23-5.

²⁷¹ *Id.* § 23-4a. To qualify as lands of public use and benefit, land must be used for “conservation purposes, public enjoyment purposes, recreational purposes or any activity associated with improving or maintaining such conservation, public enjoyment or recreational purposes.” *Id.* § 23-4a.

place conservation or preservation restrictions on any land it manages,²⁷² and it may provide outdoor recreational services, including associated developments, in open space and park areas.²⁷³

Connecticut has enacted a goal to hold at least twenty-one percent of its land as open space for recreation and conservation purposes, with ten percent held by the state and eleven percent by partners (municipalities, land trusts, and water companies).²⁷⁴ To progress towards meeting this goal, the assembly required DEEP to prepare and periodically update a comprehensive strategy in consultation with other state, regional, and municipal authorities and nongovernmental land conservation organizations. The revision of this “green plan” was recently released in draft for review.²⁷⁵ The plan notes that Connecticut currently falls approximately 170,000 acres short of meeting its open space conservation requirements.²⁷⁶ Enhanced conservation of “Areas Significant to the Coast” is one of four themes for future acquisition,²⁷⁷ and “program administration” themes include “Strategize Acquisitions for Climate Change Resiliency.”²⁷⁸

2.2.5.1 Acquisition Programs

Connecticut has provided several mechanisms to support acquisition and protection of open space by the state and partners. The Commissioner may “acquire, maintain and make available,” open spaces by purchase or gift.²⁷⁹ Towns also may transfer full or partial responsibility for care and control of open space to DEEP upon terms and for periods established by agreement.²⁸⁰ Funding for DEEP acquisitions come through the recreation and natural heritage trust program, which authorizes the Commissioner to acquire and fund ongoing management of lands meeting certain criteria, which may be added to state forests, parks, preserves, and other areas for public benefit.²⁸¹

Municipalities have additional, independent authority to obtain lands and easements for open space through methods including purchase, condemnation, gift, and lease.²⁸² Municipalities may establish authorities to assist in acquiring land for open space, recreation, and housing.²⁸³ The state protected open space and watershed land acquisition grant program provides funding to municipalities, nonprofit land conservation organizations, and water companies for acquisition of land or conservation easements to be held in perpetuity in natural scenic or open condition.²⁸⁴ These grants can be matched with outside funds under the charter oak open space grant program, for which lands must meet certain criteria.²⁸⁵ The similar Charter Oak state park and forest

²⁷² Conn. Gen. Stat. § 23-4a.

²⁷³ *Id.* §§ 23-10, -10b.

²⁷⁴ *Id.* § 23-8(b).

²⁷⁵ DEEP, Comprehensive Open Space Acquisition Strategy (2016), available at

http://www.ct.gov/deep/lib/deep/open_space/Draft_Green_Plan_03-18-16.pdf (last visited Aug. 31, 2016).

²⁷⁶ *Id.* at i.

²⁷⁷ *Id.* at ii.

²⁷⁸ *Id.* at iii.

²⁷⁹ Conn. Gen. Stat. § 23-8(a).

²⁸⁰ *Id.* § 23-12.

²⁸¹ *Id.* §§ 23-74, -75.

²⁸² *Id.* § 7-131b(a).

²⁸³ *Id.* § 7-131p.

²⁸⁴ Conn. Gen. Stat. § 7-131d – 131-k.

²⁸⁵ *Id.* § 7-131t.

program allows the state to acquire land and preserve it, as a state park or forest, in its natural state, in perpetuity.²⁸⁶

2.2.5.2 State Forests

DEEP is responsible for management and protection of state forest lands²⁸⁷ through a State Forester who is accountable to the Commissioner.²⁸⁸ State forest lands may be owned, leased, or rented by the state, including from federal entities.²⁸⁹ With the Governor's approval, the Commissioner can lease state forest or park lands as long as doing so does not conflict with park or forest purposes,²⁹⁰ and the Commissioner may also make improvements to state forest lands that are necessary for the use and protection of forest lands.²⁹¹

2.2.5.3 Natural Area Preserves

Natural area preserves are areas of land or water worthy of preservation in their natural condition. The Governor designates natural area preserves with the approval of the Commissioner after a recommendation by the Natural Area Preserves Advisory Committee.²⁹² The Commissioner is responsible for the "selection, care, control, supervision and management of all natural area preserves" and must "maintain such preserves in as natural and wild a state as is consistent with the preservation and enhancement of protected resources and educational, scientific, biological, geological, paleontological and scenic purposes."²⁹³ When creating the system, the Commissioner must prioritize areas of critical habitat to endangered species as preserve areas.²⁹⁴ Lands acquired for preservation can be obtained by gift, devise, or purchase²⁹⁵ and cannot be sold except in limited circumstances.²⁹⁶

A preserve can only be approved after the recommendation by the Natural Area Preserves Advisory Committee.²⁹⁷ Private land with a conservation restriction may also be deemed a preserve with the approval of the Commission and the designation by the Governor.²⁹⁸ The purpose of a preserve cannot be alienated unless the Commissioner, after consulting with the Advisory Committee, finds that doing so serves a public necessity or the features of the preserve that were sought to be protected have been destroyed so that the purpose of preservation has been frustrated.²⁹⁹

²⁸⁶ *Id.* § 7-131u.

²⁸⁷ *Id.* § 23-20(a).

²⁸⁸ *Id.* § 23-19.

²⁸⁹ Conn. Gen. Stat. §§ 23-10(d); -21, -30, -31.

²⁹⁰ *Id.* §§ 23-25.

²⁹¹ *Id.* §§ 23-32.

²⁹² *Id.* §§ 23-5b, -5d.

²⁹³ Conn. Gen. Stat. § 23-5c.

²⁹⁴ *Id.*

²⁹⁵ *Id.* § 23-5h.

²⁹⁶ *Id.* § 23-5e.

²⁹⁷ *Id.* § 23-5d(a).

²⁹⁸ Conn. Gen. Stat. § 23-5d(b).

²⁹⁹ *Id.* § 23-5e(a).

2.2.5.4 Greenways and Bikeways

DEEP administers a greenways capital grant program that provides grants to municipalities and other organizations for development of greenways.³⁰⁰ Greenways are defined as corridors of open space that “(1) may protect natural resources, preserve scenic landscapes and historical resources or offer opportunities for recreation or non-motorized transportation, (2) may connect existing protected areas and provide access to the outdoors, (3) may be located along a defining natural feature, such as a waterway, along a man-made corridor, including an unused right-of-way, traditional trail routes or historic barge canals or (4) may be a greenspace along a highway or around a village.”³⁰¹ This definition includes, but is not limited to, transportation greenways supported by federal DOT programs under federal law.³⁰² The Connecticut Greenway Council assists in greenways administration, including through criteria for designation, maintenance of an inventory, and other duties.³⁰³ Currently, there are 74 designated greenways in Connecticut.³⁰⁴

In addition to greenways, the Commissioner may create bikeways using proceeds of bond sales.³⁰⁵ Likewise, there is a bikeway grant program with which to draw funds from for, “planning, design, land acquisition, construction, construction administration, equipment, trail amenities, trail facilities, parking lots, toilet buildings, signs, benches and publications for bikeways, pedestrian walkways, greenways and multiuse trails, and for development and maintenance of recreational trails and trail-related facilities for both motorized and non-motorized uses.”³⁰⁶ The Connecticut Greenway Council advises on the distribution of bikeway grants.³⁰⁷

2.2.5.5 Recreation and Natural Heritage Trust Program

Connecticut has also identified two sites that are recognized “Connecticut Heritage Areas,” which the state must consider when developing planning documents and processes and where the state may partner with “managing entities” on a range of projects.³⁰⁸ Two areas have been designated to date,³⁰⁹ neither of which touches the study area and both of which have been concurrently designated as “National Heritage Areas” by the U.S. Congress.³¹⁰

2.2.5.6 Rivers

DEEP is responsible for state-wide river policy and protection by identifying rivers to be protected, designating protected river corridors, and reviewing protected river maps and management

³⁰⁰ *Id.* § 23-101.

³⁰¹ *Id.* § 23-100.

³⁰² *Id.* § 23-101(a).

³⁰³ Conn. Gen. Stat. § 23-102(b).

³⁰⁴ DEEP, *supra* note 275, at 74.

³⁰⁵ Conn. Gen. Stat. §§ 23-103(a), (b).

³⁰⁶ *Id.* § 23-103(c).

³⁰⁷ *Id.* § 23-103(e).

³⁰⁸ *Id.* § 23-81(b).

³⁰⁹ *Id.* § 23-81a.

³¹⁰ 54 U.S.C. § 320101 note (discussing extension of authorization for national heritage areas through 2020 under Pub.L. 113-291 (2014)).

plans.³¹¹ Among these responsibilities is the creation of a model river protection ordinance in consultation with the River Protection Advisory Committee.³¹²

2.2.5.6.1 Protected Rivers Act

The Protected Rivers Act additionally and separately requires DEEP to adopt a list of rivers appropriate for designation as a protected river corridor and, upon request from one or more municipalities in a corridor, establish a river committee to plan for designation and protection and preservation of that corridor.³¹³ Such committees must inventory the resources and uses of the corridor and prepare a river corridor protection plan that includes a strategy and preservation objectives and makes recommendations for modification of municipal conservation and development plans and zoning, wetlands, and other regulations.³¹⁴ While the river plans are not themselves legally binding, they may result in protection through state legislation “designating” the corridor for protection after approval by each municipality, DEEP, and referral to the state legislature following a process set out in law. Designation requires amendment of relevant municipal regulations and plans, state major plans, and regional land use plans to be consistent with the river plan and adopt its recommendations.³¹⁵ DEEP and the Connecticut Siting Council are then also prohibited from issuing permits or approvals for activities in the river corridor unless they will not adversely affect any of the resources protected by the plan.³¹⁶

2.2.5.6.2 Multiple Use Rivers Act

The Multiple Use Rivers Act (which is closely analogous to the state Protected Rivers Act) authorizes any two or more municipalities to establish by ordinance a river commission (or designate a river advisory board) to plan for coordinated river management.³¹⁷ Commissions must inventory resources and uses, a statement of objectives, and a management plan including a strategy for achieving the objectives and avoiding user conflicts.³¹⁸ Once the plan has been approved by the municipality members of the Commission and then DEEP, each municipality will be required to modify its planning, zoning and other regulations and plans (and variances are not allowed unless compatible with the plan), and major state plans and regional plans must also be made consistent with the river plan.³¹⁹

2.2.5.7 Municipal Authorities

- *Public recreational facility authorities:* Municipalities may create public recreation authorities which are governed by a commission.³²⁰ While most often focusing on arenas or

³¹¹ Conn. Gen. Stat. § 25-102qq.

³¹² *Id.* § 25-102xx.

³¹³ *Id.* § 25-202, 203.

³¹⁴ *Id.* § 25-204.

³¹⁵ *Id.* § 25-205.

³¹⁶ Conn. Gen. Stat. § 25-206.

³¹⁷ *Id.* § 25-232.

³¹⁸ *Id.* § 25-234.

³¹⁹ *Id.* § 25-235, 236.

³²⁰ *Id.* § 7-130b (authorizing creation of authorities by one or more than one municipality), *Id.* § 7-130c.

similar infrastructure, relevant facilities include, among others, bathing beaches and marinas.³²¹

- *Municipal forest commissions*: “The legislative body of any town, city or borough may vote to establish a municipal forest for the purpose of raising timber, protecting water supplies, providing opportunities for outdoor recreation or employment of relief labor.”³²² Management and care of the forest must be in the charge of a municipal forest commission,³²³ such as the Roosevelt Forest Commission in Stratford or the Community Forest Commission in Branford.³²⁴ While the purposes of municipal forests are consistent with the intention of natural and green infrastructure, we are not aware of precedents for the use of municipal forests for coastal green infrastructure purposes. As such, municipal forest authorities are not considered in detail.
- *Municipal land acquisition and development authority*: These authorities may be created to assist the municipality in acquiring or developing “agricultural, recreational or open space land” or easements, interests or other rights in such land.³²⁵
- *Conservation commissions*: Municipalities may create conservation commissions “for the development, conservation, supervision and regulation of natural resources, including water resources, within [their] territorial limits.”³²⁶ The role of conservation commissions includes research and coordination; inventories of natural resources and open areas; development of plans for greenways and for watershed and drought management; making recommendations to zoning commissions, planning commissions, inland wetlands agencies and other municipal agencies on development and use of open space and proposed land use changes; and acquire and manage property for the municipality.³²⁷

2.2.6 Transportation Infrastructure

Connecticut manages both marine and terrestrial transportation infrastructure, including some aspects of port and harbor management and through its responsibility for the state highway system. This section reviews the relevant authorities in each area.

2.2.6.1 Navigation

While substantial responsibility for port and harbor management is delegated to municipalities, the state has both created those delegations and is directly responsible for some aspects of marine transportation.

2.2.6.1.1 Channels and Basins

DEEP is authorized, subject to a permit from USACE and after consideration of comments from the Connecticut Department of Transportation (CTDOT), to designate and lay out channels and boat

³²¹ Conn. Gen. Stat. § 7-130a.

³²² *Id.* § 7-131.

³²³ *Id.*

³²⁴ Stratford, Conn., Code § 152-2 *et seq.*; Branford, Conn., Code § 16-1 *et seq.*

³²⁵ Conn. Gen. Stat. § 7-131p.

³²⁶ *Id.* § 7-131a.

³²⁷ *Id.*

basins in land under tidal and coastal waters to provide access to and from deep water to uplands and for improvement of coastal and inland navigation.³²⁸

2.2.6.1.2 Connecticut Port Authority

The Connecticut Port Authority is a self-funded, quasi-governmental entity with a mandate to promote maritime commerce.³²⁹ The independent organization, led by an Executive Director selected by a seven-member Board of Directors appointed by the Governor, coordinates planning and funding for port development, including pursuing federal funding.³³⁰ The Authority does not have regulatory power.³³¹

2.2.6.1.3 Harbor Management commissions and plans

Connecticut authorizes any municipality with a harbor³³² to establish or designate a harbor management commission made up of members representing the planning commission, zoning commissions (or combined PZC), conservation commission, shellfish commission, and flood control board, as well as the harbor master as ex officio member.³³³ Municipalities may also create commissions jointly with neighboring municipalities.³³⁴ The ordinance must grant the commission jurisdiction over the area within the municipality and below the mean high water mark.³³⁵

Commissions are required to prepare a harbor management plan to identify the most desirable use of the harbor for recreational, commercial, industrial, and other purposes, consistent with the requirements of the Coastal Management Act and any existing coastal plan and after consideration of certain factors.³³⁶ The plan must be prepared in consultation with DEEP and CTDOT, reviewed by USACE, and approved by DEEP and CTDOT.³³⁷ The plan must identify problems and make recommendations, including proposed ordinances to implement the plan, and must include specific content.³³⁸ DEEP and CTDOT are required to prepare a model plan.³³⁹

Once completed, the commission may review and make recommendations consistent with the plan on any proposal affecting property on, in, or contiguous to the harbor area—including but not limited to proposals before planning and zoning bodies, historic district commissions, FECBs, shellfish commissions, sewer commissions, water pollution control authorities, and special districts with land use authority.³⁴⁰ Such authorities must consider the recommendations of the commission, and a two-thirds vote is required to approve a proposal that receives a negative

³²⁸ *Id.* § 22a-340.

³²⁹ Conn. Gen. Stat. § 32-435.

³³⁰ *Id.*

³³¹ *Id.* § 32-435(a)(7).

³³² *Id.* § 15-3a (defining “harbor”).

³³³ Conn. Gen. Stat. § 22a-113k.

³³⁴ *Id.*

³³⁵ *Id.*

³³⁶ *Id.* §§ 22a-113m; 22a-133o.

³³⁷ *Id.* § 22a-113m.

³³⁸ Conn. Gen. Stat. § 22a-113n (identifying mandatory elements of plan, acceptable recommendations).

³³⁹ *Id.* § 22a-113t.

³⁴⁰ *Id.* § 22a-113p.

recommendation.³⁴¹ Additionally, once a plan is in place, any mooring or anchorage requires a permit from the harbor master, and such permits must be consistent with the plan.³⁴² Finally, the commission may seek a general permit from USACE once its plan is approved.³⁴³

2.2.6.1.4 Port Authorities

Towns may establish a port district to be administered by a port authority.³⁴⁴ However, “port authority” is defined to mean exclusively the port authorities of Bridgeport, New Haven, and New London.³⁴⁵ These authorities have power over the survey, development, and operation of port facilities in their district and coordination with transportation authorities, as well as powers necessary to carry out these responsibilities.³⁴⁶ Port authority jurisdiction does not extend to safe conduct of vessels or other responsibilities of the state Department of Transportation.³⁴⁷

2.2.6.2 Highways

Highways in Connecticut are either state or town roads, which are under the jurisdiction of either the CTDOT or a municipality, respectively.

2.2.6.2.1 State and Local Highways

The Commissioner of CTDOT has jurisdiction over the state highway system, which includes designated state highways³⁴⁸ and all sections of the interstate highway system in the state.³⁴⁹ The Commissioner may take a highway into the state system if designation is in the best interest of the state and the highway is a:³⁵⁰

- primary highway “serving the predominant flow of traffic between the principal towns” of the state;
- secondary highway, or a connecting or feeder highway, “serving the predominant flow of traffic” between smaller towns; or
- special service highway providing access from a primary or secondary highway to federal or state facilities.³⁵¹

Highways not included in the state highway system are municipal. Municipalities are required to build and repair all necessary highways and bridges.³⁵² They may do this through their legislative authority (e.g., Board of Selectmen) or by appointment of a superintendent of highways and

³⁴¹ *Id.*

³⁴² *Id.* § 22a-113r.

³⁴³ Conn. Gen. Stat. §§ 22a-113q, 22a-2.

³⁴⁴ *Id.* § 7-329a.

³⁴⁵ *Id.* § 7-329b.

³⁴⁶ *Id.* § 7-329c.

³⁴⁷ *Id.* § 7-329a.

³⁴⁸ Conn. Gen. Stat. §§ 13a-1 (defining state highways as those designated by the Commissioner or by statute); 13a-16 (designating official state highways, as amended pursuant to other sections of the statute).

³⁴⁹ *Id.* § 13a-15.

³⁵⁰ *Id.* § 13a-42. A town may also petition the Commissioner to take a highway into the state system. *Id.*

³⁵¹ *Id.* § 13a-14.

³⁵² *Id.* § 13a-99.

bridges.³⁵³ Municipalities are authorized to designate “scenic roads” (other than state highways) on which they “may regulate future alterations and improvements” (e.g., widening).³⁵⁴ Decisions on designation of these roads may be delegated to a local PZC.

While, in general, each authority is responsible for laying out, constructing, and maintaining its own highways. However, these practices must conform to state law requirements governing construction and maintenance.³⁵⁵ In addition, certain duties may be altered by agreement. The Commissioner and a town may agree, in writing, for a town to maintain a designated section of a state highway, other than limited access highway, in exchange for reimbursement by the Commissioner.³⁵⁶ The Commissioner also may enter into an agreement to permit a town to improve a state highway in conjunction with a redevelopment project or utility improvement.³⁵⁷

State law also provides for discontinuance of highways and transfer from state to municipal control. The Commissioner may transfer (or in limited cases, abandon³⁵⁸) a state highway, along with associated rights in land,³⁵⁹ to a town if the highway no longer conforms with the categories of state highways or its inclusion in the state system no longer serves the best interest of the state.³⁶⁰ A municipality may accept these transferred state or proposed highways through the town’s legislative authority.³⁶¹ Municipalities may also discontinue highways or private ways except where laid out by a court or state statute, after providing notice to adjacent landowners and subject to future rights of way.³⁶²

2.2.6.2.2 Interaction with Rail Infrastructure

When a highway is constructed and the highway is to intersect or cross over or under any railroad, the Commissioner may order any railroad company to alter its existing facilities as required by such construction.³⁶³ In such a situation, the cost of the change or alteration will be included in construction cost of the highway.³⁶⁴ The Commissioner may enter into agreements with railroad corporations for the purpose of performing any work that may be necessary in construction with the construction of highways, bridges, and other public works undertaken by the Department of

³⁵³ Conn. Gen. Stat. §13a-8. A town must adopt §§ 13a-8 to 13a-11 to use a superintendent. *Id.*

³⁵⁴ *Id.* § 7-149a.

³⁵⁵ *Id.* § 13a-36 *et seq.*

³⁵⁶ *Id.* § 13a-97.

³⁵⁷ *Id.* § 13a-97a.

³⁵⁸ Conn. Gen. Stat. § 13a-43. Abandonment must be “in connection with a new highway constructed in a town” and does not otherwise provide for abandonment under duress, such as where sea level rise makes a highway untenable. *Id.*

³⁵⁹ *Id.* § 13a-46.

³⁶⁰ *Id.* § 13a-46.

³⁶¹ *Id.* § 13a-48.

³⁶² *Id.* § 13a-49 – 13a-55.

³⁶³ Conn. Gen. Stat. §13a-132.

³⁶⁴ *Id.*

transportation.³⁶⁵ Due to the possibly increase in costs, any such agreement is subject to the State Treasurer’s approval.³⁶⁶

2.2.6.3 Airports

The Connecticut Airport Authority³⁶⁷ has the power to, “manage, operate and develop,” airports in Connecticut, with specific duties and powers detailed in statute.³⁶⁸ There is also a Bureau of Aviation which seems to have been created to facilitate the transfer of control, management, and authority of all airports in Connecticut to fall under the jurisdiction of the Authority.³⁶⁹ In addition to the powers and duties laid out for the Authority, it also has the power to manage and operate any airport or restricted landing area within its jurisdiction, including Sikorsky Airport.³⁷⁰ The Executive Director has the power to create regulations and standards pertaining to aeronautics and airports.³⁷¹ Additionally, any municipality may establish an aviation commission that may be in charge of administering ordinances concerning airports and aeronautics.³⁷²

Management of Tweed-New Haven Airport is distinct from other airports in the state. The New Haven Airport Authority operates the airport under lease with the city of New Haven.³⁷³ The Authority is a regional quasi-public authority created by the state legislature and responsible for maintaining and improving the airport as an economic asset for the South Central region.³⁷⁴ The Authority is governed by a 15-member board appointed by New Haven (8 members), East Haven (5 members), and the South Central Regional Council of Governments (2 members).³⁷⁵

The Authority has “full control of the operation and management of the airport” pursuant to its lease agreements,³⁷⁶ but unless exempted from compliance with local ordinances by that lease will remain subject to land use and other restrictions put in place by each of its host municipalities. New Haven’s Zoning Ordinance designates a specific airport district that encompasses “that area which has been and is being developed by the Tweed-New Haven Airport.”³⁷⁷ The airport surfaces set out on maps prepared for the Authority in compliance with FAA regulations are shown on the zoning map and limit tree and building height in the area.³⁷⁸

³⁶⁵ *Id.* § 13a-133.

³⁶⁶ *Id.*

³⁶⁷ *Id.* § 15-120bb(a).

³⁶⁸ Conn. Gen. Stat. § 15-120cc.

³⁶⁹ *Id.* §§ 15-120ll, 15-120oo.

³⁷⁰ *Id.* § 15-120nn.

³⁷¹ *Id.* § 15-41.

³⁷² *Id.* §§ 15-80; 15-94.

³⁷³ Some of the airport located in East Haven is owned by New Haven, an arrangement that has given rise to litigation. *City of New Haven v. Town of East Haven*, 263 Conn. 108, 818 A.2d 741 (2003) (upholding decision denying East Haven’s attempt to tax New Haven as landowner of property located in East Haven).

³⁷⁴ Conn. Gen. Stat. § 15-120g *et seq.*

³⁷⁵ *Id.* § 15-120i.

³⁷⁶ *Id.* § 15-120j.

³⁷⁷ New Haven Zoning Ord. art. VI § 53.

³⁷⁸ New Haven Code Ord. § 4-3, 4-4.

2.2.7 Shellfish

Connecticut regulates the placement and harvest of shellfish through several agencies and delegates certain authorities to municipalities. This section reviews these authorities.

2.2.7.1 Aquaculture

Under the Agriculture code, the Department of Agriculture, Bureau of Aquaculture (DA/BA) is the lead agency for aquaculture development in the state and is directed to coordinate other state agencies, liaise with federal and local officials, and liaise between the government and industry.³⁷⁹ Aquaculture is defined in the Agriculture code as the controlled rearing, cultivation and harvest of aquatic plants and animals³⁸⁰—a definition that excludes development of oyster reefs for purposes other than harvest. However, we provide a brief overview of relevant entities and processes.

- The statute creates an Interagency Aquaculture Coordinating Committee to “provide for the development and enhancement of aquaculture in this state” by creating a strategy for aquaculture development.³⁸¹
- The Department must create regulations after consultation with DEEP for licensure of aquaculture facilities and operations.³⁸² However, no regulations exist at this time.
- Release of water, organisms, or other material from an aquaculture system is unlawful without prior notice to the Commissioner, who may issue an order to abate or discontinue a release.³⁸³
- The Department has exclusive authority over aquaculture permitting, except over water discharges permitted by DEEP. Certain aquaculture activities are exempt from other permitting requirements, such as placement of structures used in aquaculture which are exempt from Corps of Engineers permitting and do not interfere with navigation; and (2) transport of indigenous aquaculture products and stocking them in state waters with departmental approval.³⁸⁴
- The Commissioner is responsible for licensure and inspection of aquaculture producers, including seaweed producers.³⁸⁵ Special licensing provisions apply to seaweed.³⁸⁶

2.2.7.2 State Shellfisheries

Connecticut shellfishing law divides jurisdiction between the state and towns. The state has jurisdiction over all shellfisheries except those areas under town control and management.³⁸⁷ The

³⁷⁹ Conn. Gen. Stat. § 22-11d. The Bureau of Aquaculture is created by regulation at Conn. Agencies Regs. § 22-7-5.

³⁸⁰ Conn. Gen. Stat. § 22-11c.

³⁸¹ *Id.* § 22-11e. The Department is chair; other members include the Departments of Energy and Environmental Protection (DEEP) and Economic and Community Development. *Id.*

³⁸² *Id.* § 22-11f.

³⁸³ *Id.* § 22-11g.

³⁸⁴ *Id.* § 22-11h.

³⁸⁵ Conn. Gen. Stat. § 22-11i.

³⁸⁶ *Id.* § 22-11j.

³⁸⁷ *Id.* tit. 26 ch. 491, § 26-192 *et seq.*

Commissioner of Agriculture maintains a map of the areas under state control,³⁸⁸ which also includes designated natural oyster beds declared by statute.³⁸⁹ All waters not under state jurisdiction are managed by the towns, except where specifically indicated elsewhere in the code.³⁹⁰

The Department of Agriculture is the lead agency for shellfish, with responsibilities including management and regulation, coordinating other state agencies; liaising with federal agencies, local shellfish commissions; and industry; and ensuring compliance with federal shellfish sanitation standards.³⁹¹ The Department's shellfish responsibilities are supported by the Aquaculture Advisory Council, which is charged with reviewing and recommending plans for expanding shellfishing, mapping leases, reviewing the leasing process, and other matters.³⁹²

The Department's processes include:

- *Licensing*: The Department licenses commercial shellfish harvesters, producers and shippers,³⁹³ as well as (separately) persons and vessels engaged in taking shellfish for commercial purposes from a natural bed.³⁹⁴
- *Area classification (health)*: The Department is responsible for classification of "coastal waters, shores and tidal flats" for the taking of shellfish as approved, conditional, restricted, conditionally restricted, or prohibited.³⁹⁵ These classifications are based on sanitary considerations. Closures are enforced by local directors of health, with the assistance of local police and state shellfish police upon request.³⁹⁶
- *Leasing*: The Commissioner of Agriculture may lease grounds under state jurisdiction for the purpose of planting and cultivating shellfish, under which lessees must make good faith efforts harvest shellfish³⁹⁷ and which cannot conflict with a right of fishing.³⁹⁸ DA/BA may also lease to adjacent municipalities for recreational shellfishing.³⁹⁹ The Department may issue a "resource assessment permit" for one year to assess the viability of a shellfish area.⁴⁰⁰
- *Dispute resolution*: Where disputes arise between the State and a town as to jurisdiction in a particular area, the town can petition the superior court for resolution.⁴⁰¹ The Commissioner is empowered to resolve petitions on questions and disputes touching the

³⁸⁸ *Id.* §§ 26-192, 193. These areas generally lie south of a line set in 1882 and revised in 1918. The statute refers to the 1918 statute in section 26-192, but this reference is now circular and does not itself contain the state jurisdictional boundary.

³⁸⁹ *Id.* § 26-193.

³⁹⁰ Conn. Gen. Stat. § 26-257.

³⁹¹ *Id.* § 26-192a.

³⁹² *Id.* § 26-192m.

³⁹³ *Id.* § 26-192c.

³⁹⁴ *Id.* §§ 26-212 – 26-213.

³⁹⁵ Conn. Gen. Stat. § 26-192e

³⁹⁶ *Id.* § 26-192g

³⁹⁷ *Id.* § 26-194. Leasing can be to adjacent municipalities for recreational use. *Id.* § 26-194a.

³⁹⁸ *Id.* § 26-204.

³⁹⁹ *Id.* § 26-194a.

⁴⁰⁰ Conn. Gen. Stat. § 26-237e.

⁴⁰¹ *Id.* § 26-192.

ownership, title, buoys, boundaries, ranges, extent or location of any shellfish grounds within the exclusive jurisdiction of the state,⁴⁰² as well as boundary disputes crossing the state-town boundary line.

- *Surveying and buoying*: The Commissioner is responsible for buoying certain natural beds.⁴⁰³ The Commissioner must also cause to be made a survey and delineation of any new right to plant or cultivate shellfish.⁴⁰⁴
- *Shellfish police*: The Commissioner may, upon application, commission sworn shellfish police to enforce the shellfishing laws.⁴⁰⁵
- *Taxation*: The Commissioner manages taxation of shellfish grounds, including through subpoena and other powers.⁴⁰⁶
- *Area designation*: The Commissioner may designate spawning beds, marked by buoys, where it is unlawful to take oysters.⁴⁰⁷ The Commissioner may also designate by regulation waters for exclusive recreational harvest of clams, but no such waters are currently designated.⁴⁰⁸
- *Regulation of importation*: The Commissioner must regulate the deposit of shellfish imported from outside the state to prevent introduction of harmful parasites, pests and diseases.⁴⁰⁹
- *Cultch deposition*: The statute creates a program within the Department to purchase shell and cultch material for deposit on state shellfish beds, to be funded by a Shellfish Fund.⁴¹⁰

The state shellfishing statute also provides for gear restrictions (e.g., power dredge, chains), prohibitions, and enforcement provisions related to shellfishing.

2.2.7.3 Municipal Shellfish Authority

The Connecticut Fisheries and Game Code governs the control and management of shellfisheries at the local level separately from the state. Any town, city, or borough can establish a shellfish commission, alone or in conjunction with other municipalities. Such commissions have charge of the shellfisheries and shellfish grounds in the municipality(ies) not previously granted to others or under Department of Agriculture jurisdiction, including rivers, inland waters, and flats adjacent to beaches. Commission jurisdiction includes the power to designate areas to plant or cultivate oysters, clams or mussels (or temporarily close areas); issue licenses to take shellfish from those areas; and determine amounts, size, and gear used to take shellfish. Commissions are to prepare

⁴⁰² *Id.* § 26-195

⁴⁰³ *Id.* § 26-203. These include the Stratford bed, Fish Island and Roton Point beds, the Bridgeport bed and the Fairfield bar and Fairfield beds. *Id.*

⁴⁰⁴ *Id.* § 26-200.

⁴⁰⁵ Conn. Gen. Stat. § 26-206.

⁴⁰⁶ *Id.* §§ 26-207 – 26-211.

⁴⁰⁷ *Id.* § 26-220.

⁴⁰⁸ See Conn. Agencies Regs. § 26-235-1 (repealed).

⁴⁰⁹ Conn. Gen. Stat. § 26-224a.

⁴¹⁰ *Id.* § 26-237a.

and periodically update a shellfish management plan, which must be submitted to the Department of Agriculture and appropriate town elected officials for review and comment.⁴¹¹

A person wishing to plant or cultivate shellfish in town waters may apply in writing to the applicable shellfish commission, or to selectmen authorized to act, for designation of a ground. Designation requires a public hearing and a good faith effort to cultivate and harvest shellfish.⁴¹² Designated grounds are limited to those not previously granted and within the limits set by law (not including natural oyster or clam beds).⁴¹³ Grantees can petition in superior court for resolution of boundary disputes arising in town waters.⁴¹⁴

The owner of land with a saltwater creek or inlet may apply to the selectmen or shellfish commission for permission to erect a dam, gate, or lock for an oyster pond, which may be granted if it will not injure navigation or deprive the public of any rights or privileges.⁴¹⁵

The location of natural oyster or clam grounds can be determined by the superior court on application of the oyster-ground committee in any town. The court in such instances must appoint a three-member committee to hear ascertain, locate and describe the boundaries of natural beds, but cannot designate any bed designated for cultivation more than five years previously.⁴¹⁶ Maps of shellfish grounds, including natural beds, are to be kept in each town clerk's office.⁴¹⁷

2.3 Local and Regional Authorities

Local governments and regional authorities bear important responsibility for local and regional coastal resiliency. These responsibilities derive from state laws directing or authorizing local and regional authorities to act, as described above. This section reviews the structure and function of the relevant authorities. After introducing the regional authorities, it reviews the relevant charter and ordinance provisions that apply in each of the ten municipalities in the study area.

2.3.1 Regional authorities

The state laws discussed in the previous section enable a range of types of regional authorities. This section reviews the regional authorities that have been established pursuant to those state laws.

2.3.1.1 Councils of Governments

Two COGs have been established within the study area: the Connecticut Metropolitan Council of Governments (MetroCOG), in the area around Bridgeport, and the South Central Regional Council of

⁴¹¹ *Id.* § 26-257a.

⁴¹² *Id.* § 26-240.

⁴¹³ *Id.* §§ 26-242, -249, -251.

⁴¹⁴ Conn. Gen. Stat. § 26-246.

⁴¹⁵ *Id.* § 26-248.

⁴¹⁶ *Id.* § 26-258.

⁴¹⁷ *Id.* § 26-259.

Governments (SCRCOG), in the area around New Haven. In addition to their planning and zoning roles, COGs serve as MPOs for the municipalities in the planning region.⁴¹⁸

2.3.1.2 Greater New Haven Water Pollution Control Authority (GNHWPCA)

New Haven and East Haven have joined with other municipalities outside the study area to establish a regional water pollution control authority by concurrent ordinance as authorized by state law.⁴¹⁹ The concurrent ordinance also indicates that Stratford will join upon its enacting the ordinance and selling its wastewater treatment system to GNHWPCA—a process that has been attempted but stymied by citizen litigation.⁴²⁰ The GNHWPCA has all the powers provided for by state law.⁴²¹

2.3.1.3 Housatonic River Estuary Commission

Specified municipalities, including Milford and Stratford, may by ordinance establish a body known as the Housatonic River Estuary Commission to study any issues related to the river and make recommendations deemed necessary to maintain, protect, and restore the resources of the estuary. It is directed to consider the adverse impact of any action proposed in or for the estuary on the marine resources of the river and may deliver a report to the local legislative bodies of the member towns.⁴²² The Commission has been established.

2.3.1.4 Long Island Sound Entities

Connecticut has established a variety of entities with jurisdiction and responsibility over planning and management of Long Island Sound.

- The Connecticut-New York Bi-State Long Island Sound Committee was established “to make specific recommendations concerning the maintenance, protection and restoration” of natural resources in the Sound.⁴²³ It is charged with making recommendations (including proposed legislation) to effectuate this purpose on any issue other than those under the jurisdiction of the Bi-State Long Island Sound Commission, “including, but not limited to, standardization of jurisdiction of coastal waters by harbor management commissions, municipal waterfront authorities, municipal conservation commissions, municipal port authorities and municipal shellfish commissions.⁴²⁴ The committee shall consider the adverse impact any action proposed in or for Long Island Sound may have upon the public trust resources [including boating, fishing and shellfishing, and natural resources] of said sound.”⁴²⁵

⁴¹⁸ Joseph Holstead, Planning Organizations, OLR Research Report 2012-R-0089 (Feb. 1, 2012), *available at* <https://www.cga.ct.gov/2012/rpt/2012-R-0089.htm> (last visited Aug. 31, 2016).

⁴¹⁹ See NEW HAVEN, CONN. CODE § 25-81 *et seq.*

⁴²⁰ NEW HAVEN, CONN. CODE § 25-82; *Antezzo v. Harkins*, No. CV156049887S, 2015 WL 3974679 (Conn. Super. Ct. June 4, 2015).

⁴²¹ NEW HAVEN, CONN. CODE § 25-86, *citing* Conn. Gen. Stat. §§ 22a-500 – 22a-519.

⁴²² Conn. Gen. Stat. § 25-170.

⁴²³ *Id.* §§ 25-138, 139.

⁴²⁴ *Id.* § 25-140.

⁴²⁵ *Id.* § 25-140.

- The Bi-State Long Island Sound Commission is established to “review and consider major environmental, ecological and energy issues” affecting the sound, seek consensus on strategies and policies concerning these issues, and make recommendations for administrative and regulatory action to implement that consensus.⁴²⁶
- Three Long Island Sound Advisory Councils have been established, for the eastern, central, and western parts of the shoreline area, respectively.⁴²⁷ The municipalities in the study area from West Haven to Madison are in the central area, while the remaining municipalities are in the western area. Councils are made up of the chief executive from each municipality and appointed members. Each council was required to produce a report on the use and preservation of the sound within its boundaries, which must be updated as needed.⁴²⁸ The reports are reviewed by the Long Island Sound Assembly, made up of representatives from each council, for consistency with each other and coordination with the law and activities of the Bi-state committee. The Assembly is required to report annually to the legislature on its review and with recommendations.⁴²⁹
- The Long Island Sound Foundation is established “as a successor organization” to the Assembly with the mission of promoting research and education activities and public information programs about restoration and protection of the sound.⁴³⁰

⁴²⁶ *Id.* § 25-157n.

⁴²⁷ Conn. Gen. Stat. § 25-154.

⁴²⁸ *Id.*

⁴²⁹ *Id.* § 25-155.

⁴³⁰ *Id.* § 25-156.

2.3.2 Branford

Branford's municipal government is a town and operates on the Board of Selectmen / Representative Town Meeting format. The First Selectman is the chief executive for the town.⁴³¹

Branford contains two units with limited self-government authority: the Pine Orchard Association and the Civic Association of Short Beach.

2.3.2.1 Planning and Zoning

The Town of Branford's planning and zoning powers are granted through the Town's Ordinances and its Zoning Regulations. The primary agencies that deal with planning and zoning are the PZC⁴³² and the ZBA with the powers as set out in state law and with the support of the town Department of Planning and Zoning.⁴³³ The Commission develops the POCD, which sets out the plan for future development in the town; the recent version was adopted in 2008.⁴³⁴ Branford is a member of the South Central Regional Council of Governments, including for regional planning.⁴³⁵

2.3.2.1.1 Zoning Approvals

Land use practices may require a range of types of applications that may require review and approval by departmental staff through the zoning enforcement officer (ZEO, responsible for zoning permits, certificates of compliance, change of conforming use), the PZC (change of nonconforming use, design review, site plan application, special exemption application, coastal site plan review, or regulatory or zoning map amendments), or ZBA (some coastal site plan reviews, appeals from decisions, variances).⁴³⁶

Site plan review is required where specified for particular activities and is intended to ensure that any proposed works do not harm the public, is harmonious with the surrounding area, protect the water aquifers, and ensure traffic created will not adversely affect the town.⁴³⁷ The PZC will coordinate with other entities whose approval is also needed – notably, for Inland Wetlands and Watercourses review and floodplain review – prior to rendering site plan or special exception decisions.⁴³⁸

The ZBA has the power to review an appeal of a decision made by the ZEO⁴³⁹ and hears all variance requests.⁴⁴⁰

⁴³¹ BRANFORD, CONN. CHARTER §§ 1, 2, 10 [hereinafter *Branford Charter*].

⁴³² BRANFORD, CONN. CODE § 71 *et seq.* [hereinafter *Branford Code*].

⁴³³ *Id.* § 71 *et seq.*; BRANFORD, CONN. ZONING REGS. § 9.12 [hereinafter *Branford Zoning Regs.*]

⁴³⁴ Branford, Conn., BRANFORD'S WINDOW TO THE FUTURE: 2008 PLAN OF CONSERVATION AND DEVELOPMENT ii (2008).

⁴³⁵ *Branford Code* §§ 24-1 *et seq.* (councils of governments); 69-2 (regional planning agency).

⁴³⁶ *Branford Zoning Regs.* § 9.1 *et seq.*

⁴³⁷ *Id.* §§ 9.6, 9.7.

⁴³⁸ *Id.* §§ 9.6E, 9.8D.

⁴³⁹ *Id.* § 9.12A.

⁴⁴⁰ *Id.* § 9.13A.

2.3.2.1.2 Building Code

The town Building Inspector is responsible for administering the state building code and is appointed by the Board of Selectmen.⁴⁴¹

2.3.2.1.3 Flood Prevention and Management

Branford has established a FECB and given it powers as set out in state law.⁴⁴² In addition, the town has created a floodplain management ordinance pursuant to state law that applies to all areas of special flood hazard in the town, as determined on the basis of FEMA rate maps.⁴⁴³ Floodplain management attempts to ensure that any uses, constructs, or activities will not harm the public by increasing its risk to flood and erosion.⁴⁴⁴ The Town Engineer has the authority over floodplain management in Branford, and a development permit is required in regulated areas prior to commencement of development activity.⁴⁴⁵ In addition, general and specific construction and standards apply to all areas of special flood hazard and to specific activities and areas, including coastal high-hazard areas (CHHAs).⁴⁴⁶ The FECB hears and decides all appeals from decisions and requests for variances under the regulations.⁴⁴⁷

2.3.2.1.4 Coastal Management

The Coastal Management District is an overlay district intended to insure that development, preservation, and resource utilization occur in a manner as to preserve the resources to support a development.⁴⁴⁸ Any project to be done within the district requires a coastal site plan review from the PZC.⁴⁴⁹ Coastal site plans must list benefits and adverse effects of the project to the coastal area, provide an assessment of the suitability of the proposed location, demonstrate a spatial relationship to coastal resources, and provide a description of mitigation methods for potential environmental impacts.⁴⁵⁰

2.3.2.1.5 Inland Wetlands and Watercourses

Branford created the Inland Wetlands Commission pursuant to state law with most of its powers created by state law.⁴⁵¹ The town ordinances direct the Commission to promulgate regulations to protect the town's wetlands.⁴⁵²

2.3.2.1.6 Historic Districts

The Town Center Revitalization Review Board consists of seven members appointed by the Board of Selectmen and has powers as laid out in the local ordinances.⁴⁵³ The Board has jurisdiction over

⁴⁴¹ *Branford Code* §§ 15-1, 15-2.

⁴⁴² *Id.* §§ 50-1, 50-2.

⁴⁴³ *Id.* §§ 161-1 et seq., 161-6, 161-7.

⁴⁴⁴ *Id.* § 161-3.

⁴⁴⁵ *Id.* §§ 161-13, 161-8.

⁴⁴⁶ *Branford Code* §§ 161-16 – 161-19.

⁴⁴⁷ *Id.* §§ 161-21, 161-22.

⁴⁴⁸ *Branford Zoning Regs.* § 5.1A.

⁴⁴⁹ *Id.*

⁴⁵⁰ *Id.* § 9.7A.

⁴⁵¹ *Branford Code* § 109-1.

⁴⁵² *Id.* § 109-5.

⁴⁵³ *Id.* §§ 19-2, 19-4.

the Town Center Village District, which was created to protect and maintain the unique nature of Branford's Town Center.⁴⁵⁴ New and modified structures and activities in the district that require a site plan or special exception are subject to town center design review by the Board, which submits a recommendation to the PZC.⁴⁵⁵ The Board also serves as an advisor to the Board of Selectmen concerning revitalization of the district.⁴⁵⁶

2.3.2.1.7 Other

The Joint Conservation and Environmental Commission, created by ordinance, consists of eleven members appointed by the Board of Selectmen.⁴⁵⁷ Its powers and duties include investigating possible pollution, recommending procedures and methods of abating pollution in the town (including through ordinance and regulation), and other activities related to pollution.⁴⁵⁸ It does not have a formal regulatory role.

2.3.2.2 Water Quality

Branford has established a sewer authority, which is the designated Water Pollution Control Authority for the town.⁴⁵⁹ The WPCA's powers and authority include all those provided in state law and in practice include management of the town septic sewer system.⁴⁶⁰ Much of Branford is served by the sewer system, but there are substantial unserved areas, including coastal areas.⁴⁶¹ The Authority has powers and authority over sewage use, maintenance, and construction of sewage lines within private property in Branford.⁴⁶² Sewerage work and connections to the town sewer system require a permit from the town engineer.⁴⁶³ The town engineer is also responsible for stormwater management and is currently mapping the town stormwater system.⁴⁶⁴

2.3.2.3 Parks, Wildlife, and Open Space

Branford has established the Branford Park and Open Space Authority to regulate its parks and open space, with certain exceptions.⁴⁶⁵ The Authority has the power to regulate and manage parks and open spaces designated by the Board of Selectmen.⁴⁶⁶ In addition, there are the: Green Committee, who advise the Board of Selectmen concerning the preservation and maintenance of landscape on the Town Green;⁴⁶⁷ the Young's Park Commission, which has the power to adopt rules

⁴⁵⁴ *Id.* § 19-1; *Branford Zoning Regs.* § 5.2A.

⁴⁵⁵ *Branford Zoning Regs.* §§ 5.2B-I; 9.5.

⁴⁵⁶ *Branford Code* § 19-4.

⁴⁵⁷ *Id.* §§ 21-1, 21-2.

⁴⁵⁸ *Id.* § 21-4.

⁴⁵⁹ *Id.* § 106 *et seq.* The ordinances variously refer to this body as the sewer commission and sewer authority, but in most instances "authority" is used, and that is the term adopted here. This appears to be scrivener's error.

⁴⁶⁰ *Id.* §§ 106-1, § 204-16.

⁴⁶¹ See Town of Branford, *Sewered Areas of Branford* (2006), available at http://www.branford-ct.gov/filestorage/285/287/368/Sewered_Areas_22x34.pdf (last visited Aug. 31, 2016)

⁴⁶² *Branford Code* § 204-15.

⁴⁶³ *Id.* § 204-18.

⁴⁶⁴ Town of Branford, *Engineering Department*, at <http://www.branford-ct.gov/Engineering> (last visited Aug. 31, 2016).

⁴⁶⁵ *Branford Code* § 190-8; 190-14 (limits on jurisdiction)

⁴⁶⁶ *Id.* § 190-11

⁴⁶⁷ *Id.* § 53-1

concerning the area known as Young's Park;⁴⁶⁸ the Parker Memorial Park Commission, which has the power to make and enforce rules within Parker Memorial Park and Branford Point.⁴⁶⁹

2.3.2.4 Transportation Infrastructure

2.3.2.4.1 Navigation

Branford does not have any entity in charge of regulating its harbors but does have ordinances that cover various aspects of boating such as speed limits, tie ups, loading, and regulations on commercial boat vehicles.⁴⁷⁰

2.3.2.4.2 Highways

Branford's ordinances dictate rules regarding highways within the Town, including general standards as to the construction of any highways.⁴⁷¹ Under these provisions, a permit from the town engineer is required for any highway excavation.⁴⁷²

2.3.2.5 Shellfish

The Selectmen or Shellfish Commission of Branford have explicit charge to manage all shellfisheries and grounds in the town not granted to others or under state jurisdiction between the center line of the Farm or East Haven River and Guilford town line.⁴⁷³

The town has established a shellfish commission with responsibility for managing the town shellfisheries,⁴⁷⁴ including licensing, designation of areas for planting or cultivation of shellfish, and regulating the taking of shellfish (including prohibitions for not more than one year).⁴⁷⁵ Any lease, license, or transfer of town-owned shellfishing grounds requires approval from the Board of Selectmen, and certain inshore areas may not be leased, licensed, or transferred.⁴⁷⁶ The shellfish commission is further charged with development of a shellfish management plan, which must be submitted for review by the Board of Selectmen and the state Department of Agriculture.⁴⁷⁷

2.3.2.6 Other

The Pine Orchard Association is a chartered area of the town with its own bylaws and ordinances, including for planning and zoning.⁴⁷⁸ The Zoning Authority and ZBA review zoning applications and exceptions.⁴⁷⁹

⁴⁶⁸ *Id.* § 190-6

⁴⁶⁹ *Id.* §§ 190-16, 190-17, 190-31.

⁴⁷⁰ *Id.* § 126 *et seq.*

⁴⁷¹ *Branford Code* § 216-14

⁴⁷² *Id.* § 216-6.

⁴⁷³ Conn. Gen. Stat. § 26-266.

⁴⁷⁴ *Branford Code* § 88-1, 88-3.

⁴⁷⁵ *Id.* § 88-4

⁴⁷⁶ *Id.* § 88-8.

⁴⁷⁷ *Id.* § 88-6.

⁴⁷⁸ See PINE ORCHARD ASS'N CHARTER § 24, available at <http://pineorchardassociation.com/charter/> (last visited Aug. 31, 2016).

⁴⁷⁹ PINE ORCHARD ASS'N ZONING ORD. § 9, available at <http://pineorchardassociation.com/planning-zoning/#section12> (last visited Aug. 31, 2016).

The Civic Association of Short Beach is a similar chartered district led by an executive board and with independent authority, including over planning and zoning.⁴⁸⁰ The executive board serves as zoning commission, with appeals to a ZBA.⁴⁸¹ A zoning permit from the executive board is required for any activity other than a minor repair.⁴⁸² The zoning regulations include flood and coastal provisions referring back to the relevant town requirements.⁴⁸³

⁴⁸⁰ Conn. Spec. Act. 14-2 (2014).

⁴⁸¹ *Id.* § 10.

⁴⁸² CIVIC ASS'N OF SHORT BEACH ZONING RULES & REGS. § 2.1, *available at* <http://shortbeach.webs.com/rulesandregs.htm> (last visited Aug. 31, 2016).

⁴⁸³ *Id.* §§ 5.3, 5.4.

2.3.3 Bridgeport

Bridgeport is a city, instituted by charter, which uses a City Council Legislature, Mayoral Executive format of government.⁴⁸⁴ The Town of Bridgeport became a city in 1836.⁴⁸⁵ Legal actions are taken by and on behalf of the city alone under state and federal law;⁴⁸⁶ but administrative functions are shared between a City Clerk and Town Clerk.⁴⁸⁷

2.3.3.1 Planning and Zoning

The Department of Land Use Construction and Review holds responsibility for planning, zoning, building code compliance, historic preservation, and other land use functions through the Building Department and Planning and Zoning Department.⁴⁸⁸ Within the Department, the nine-member, appointed PZC promulgates a five-year city plan⁴⁸⁹ and conforming zoning regulations.⁴⁹⁰ The Office of Planning and Economic Development is responsible for developing and implementing economic plans,⁴⁹¹ including Neighborhood Revitalization Zone Plans⁴⁹² and an ongoing Comprehensive Waterfront Plan.⁴⁹³ Other planning initiatives include a partnership between the mayor's office and the Bridgeport Regional Business Council to create a BGreen 2020 sustainability, clean energy, and transit first plan.⁴⁹⁴

Bridgeport participates in regional planning through MetroCOG and the Greater Bridgeport Regional Council of Elected Officials.⁴⁹⁵

2.3.3.1.1 Zoning Approvals

New projects must obtain a Certificate of Zoning Compliance from the PZC.⁴⁹⁶ The zoning application process must be conducted in parallel to the building permit process.⁴⁹⁷ Special permits

⁴⁸⁴ BRIDGEPORT, CONN. CHARTER at ch. 3 (powers of the mayor), ch. 5 (powers of the council) [hereinafter *Bridgeport Charter*].

⁴⁸⁵ *An Act Incorporating the City of Bridgeport, in 1 RESOLVES AND PRIVATE LAWS OF THE STATE OF CONNECTICUT, FROM THE YEAR 1789 TO THE YEAR 1836* 354–368 (John B. Eldredge ed. 1837).

⁴⁸⁶ *Bridgeport Charter* at ch. 1 §§ 1-5.

⁴⁸⁷ *Id.* ch. 4 §§ 1-4.

⁴⁸⁸ *Id.* ch. 19 § 1.

⁴⁸⁹ *Id.* ch. 19 § 7; see also City of Bridgeport, BRIDGEPORT 2020: A VISION FOR THE FUTURE (2008), available at www.bridgeportct.gov/filestorage/89019/89751/94961/103639/MasterPlanofConservationandDevelopment.pdf (last visited Aug. 31, 2016).

⁴⁹⁰ *Bridgeport Charter* ch. 19 § 6.

⁴⁹¹ *Id.* ch. 18 § 1.

⁴⁹² BRIDGEPORT, CONN. CODE §§ 8.77 – 8.79, 8.94 – 8.99 [hereinafter *Bridgeport Code*].

⁴⁹³ See City of Bridgeport, *Bridgeport's Comprehensive Plan*, at <http://www.bridgeportct.gov/content/89019/89751/94961/269564.aspx> (last visited Aug. 31, 2016); City of Bridgeport OPED, *Bridgeport Comprehensive Waterfront Plan: 2nd Launch, Neighborhood Meeting 3/9/16* (Mar. 9, 2016), available at https://s3.amazonaws.com/media.courbanize.com/cities/boston_1/WaterfrontBPTPlan2nd_Launch_PPT_03-09-2016_lPIgf1q.pdf (last visited Aug. 31, 2016).

⁴⁹⁴ City of Bridgeport, BGREEN 2020: A SUSTAINABILITY PLAN FOR BRIDGEPORT, CONNECTICUT: 2013 PROGRESS REPORT (2013), available at <http://www.bridgeportct.gov/content/89019/97299/default.aspx> (last visited Aug. 31, 2016).

⁴⁹⁵ *Bridgeport Code* §§ 2.79-80.

⁴⁹⁶ BRIDGEPORT, CONN. ZONING & SUBD. REGS. § 14-1-1 [hereinafter *Bridgeport Zoning Regs.*].

⁴⁹⁷ *Id.* § 14-1-8.

are decided by the PZC,⁴⁹⁸ while the ZBA processes applications for variances due to unique hardship.⁴⁹⁹ Site plan review before the PZC is required for subdivisions, zoning changes, special use permits, activities within coastal zones, and activities within historic districts.⁵⁰⁰ For projects within a Neighborhood Revitalization Zone, the Zone implementation or planning body may submit comments on any zoning application.⁵⁰¹

The Department of Public Facilities is responsible to plan, construct, and maintain transportation infrastructure, sanitation, the airport, parks, and public facilities.⁵⁰² Plans to construct a “street, square, parkway or other public way . . . , park, playground or other public ground or open space and ... public building or public structure” must be approved by the PZC.⁵⁰³ The City Council holds authority under state law as the town FECB empowered to install flood control systems.⁵⁰⁴

2.3.3.1.2 Building Code

Bridgeport issues building permits for plans that conform to the state building code.

2.3.3.1.3 Flood Prevention and Management

A building permit cannot issue for a project located within a FEMA-designated SFHA until the city engineer conducts a site plan review for compliance with the floodplain management ordinance.⁵⁰⁵ The ZBA can grant variances from floodplain ordinance requirements.⁵⁰⁶ The city engineer also approves connections to the sewer system through the building permit process.⁵⁰⁷

2.3.3.1.4 Coastal Management

Coastal Site Plan Review for compliance with state law is required for projects within the Coastal Boundary; the review process is handled by the PZC or ZBA in parallel to the primary zoning process.⁵⁰⁸ “Activities conducted for the specific purpose of conserving or preserving soil, vegetation, water, fish, shellfish, wildlife and other coastal land and water resources” are exempt from this review process.⁵⁰⁹

2.3.3.1.5 Inland Wetlands and Waterways

The PZC is designated as the Inland Wetlands and Waterways Agency for Bridgeport.⁵¹⁰ A permit is required for filling, dredging, construction, and other destructive activities on properties that

⁴⁹⁸ *Id.* § 14-4.

⁴⁹⁹ *Id.* § 14-7.

⁵⁰⁰ *Id.* § 14-2-2.

⁵⁰¹ *Bridgeport Code* § 8.97.070.

⁵⁰² *Bridgeport Charter* at ch. 12 §§ 2-3, ch. 11-12.

⁵⁰³ *Id.* at ch. 19 § 7(c).

⁵⁰⁴ *Bridgeport Code* § 2.60.020.

⁵⁰⁵ *Id.* § 15.44.110.

⁵⁰⁶ *Id.* § 15.44.140.

⁵⁰⁷ *Id.* § 13.04.440(E).

⁵⁰⁸ *Bridgeport Zoning Regs.* § 14-3-1 *et seq.*

⁵⁰⁹ *Id.* § 14-3-3(f).

⁵¹⁰ *Bridgeport Code* § 2.78.010.

contain inland wetlands.⁵¹¹ Comment on applications is required at least from the City Engineer, Health Department, and City Council.⁵¹²

2.3.3.1.6 Historic Districts

Two Historic Districts have been designated in the city code: the Stratfield Historic District; and Historic District Number 1, which encompasses the entire city other than the Stratfield Historic District.⁵¹³ Two commissions, Historic District Commission Number 1 and the Stratfield Historic District, promulgate regulations for preservation of the districts' historic character, which are enforced by the Department of Land Use Construction Review.⁵¹⁴ Projects which modify the exteriors of structures must obtain a Certificate of Appropriateness from the respective Commission.⁵¹⁵ Designated Historic Properties are separately protected by the five-member, appointed Historic Preservation Board.⁵¹⁶

2.3.3.2 Water Quality

The City Council holds the authority, with public hearing, to construct and charge for use of the sanitary sewer system;⁵¹⁷ this authority is delegated to its WPCA.⁵¹⁸ The WPCA issues permits for residential/commercial and industrial discharges into the public sewer.⁵¹⁹

The stormwater drainage system is also administered by the WPCA.⁵²⁰ New projects must comply with the Stormwater Management Manual, compiled by the city engineer, during the zoning review process in order to ensure adequate management of water quantity, water quality, channel protection, and flood control.⁵²¹

2.3.3.3 Parks, Wildlife, and Open Space

Public parks, including public beaches,⁵²² are managed by the Board of Park Commissioners through the Department of Parks and Recreation.⁵²³ The Board issues regulations and plans for park use and development,⁵²⁴ and use is further regulated by ordinance.⁵²⁵ The Board must approve any installation of pipe or wired infrastructure on park land.⁵²⁶

⁵¹¹ BRIDGEPORT, CONN. INLAND WETLANDS & WATERCOURSES REGS. § 4.4.

⁵¹² *Id.* § 10.1(c).

⁵¹³ *Bridgeport Code* § 12.32.010 *et seq.*

⁵¹⁴ *Id.* § 2.98.010 *et seq.*

⁵¹⁵ Conn. Gen. Stat. § 7-147d, *adopted at Bridgeport Code* § 2.98.030.

⁵¹⁶ *Bridgeport Code* § 2.62.040.

⁵¹⁷ *Bridgeport Charter* at ch. 11 §§ 10-12.

⁵¹⁸ *Id.* at ch. 11 § 22; *Bridgeport Code* § 13.04.020.

⁵¹⁹ *Bridgeport Code* § 13.04.010 *et seq.*

⁵²⁰ *Id.* § 13.04.260.

⁵²¹ *Id.* § 15.48.010 *et seq.*

⁵²² *See Bridgeport Charter* at ch. 12 § 18.

⁵²³ *Id.* at ch. 12 §§ 10-22.

⁵²⁴ *See City of Bridgeport, BRIDGEPORT PARKS MASTER PLAN 2011, available at* http://www.bridgeportct.gov/filestorage/89019/95776/103881/Bridgeport_Parks_Manual_2012_print%2Bversion.pdf (last visited Aug. 31, 2016).

⁵²⁵ *Bridgeport Code* § 12.28.010 *et seq.*

⁵²⁶ *Bridgeport Charter* at ch. 12 § 14.

2.3.3.4 Transportation Infrastructure

2.3.3.4.1 Navigation

Harbor and port management is divided among the Harbor Master, the Harbor Management Commission, and the Port Authority. The Office of Harbor Master is specifically authorized by state law.⁵²⁷ It is administered by the Superintendent of Bridges in the Health Department⁵²⁸ and is responsible for managing vessel traffic, cargo loading and unloading, and use of municipal moorings and wharves.⁵²⁹

The Harbor Management Commission has jurisdiction over development in navigable waters of the city and land up to the mean high water mark.⁵³⁰ The Commission develops and implements a Harbor Management Plan, and reviews all federal, state, and local permits of activities within its jurisdiction for compliance with the plan.⁵³¹ The Commission also assists the Harbor Master with mooring management.⁵³² Harbor lines – channel boundaries within city waterways into which dock structures cannot extend – are established by the City Council.⁵³³

The Port Authority is established under state law to promote and manage maritime commerce in the harbor.⁵³⁴ The Authority, under the leadership of a five-member, appointed commission including the Director of Economic Development and the Harbor Master, may promulgate regulations within the Harbor District.⁵³⁵

2.3.3.4.2 Highways

Building lines – building setbacks around public streets – are established by the city council.⁵³⁶ The council holds original authority for street and sidewalk layout and maintenance and unilateral ability to “discontinue” streets.⁵³⁷

2.3.3.5 Shellfish

Bridgeport has established no entities or ordinances related to shellfish management.

⁵²⁷ Conn. Gen. Stat. § 15-7.

⁵²⁸ *Bridgeport Code* § 2.26.010.

⁵²⁹ *Id.* § 12.40.010 *et seq.*

⁵³⁰ *Id.* § 2.96.010 *et seq.*

⁵³¹ *Id.* § 2.96.040.

⁵³² *Id.*

⁵³³ *Bridgeport Charter* at ch. 11 § 8.

⁵³⁴ *Bridgeport Code* § 2.28.010.

⁵³⁵ *Id.* § 2.28.070.

⁵³⁶ *Id.* at ch. 11 § 7; *see Bridgeport Code* § 12.08.020.

⁵³⁷ *Bridgeport Charter* at ch. 11-12.

2.3.4 East Haven

The Town of East Haven, Connecticut operates under a charter and code of ordinances. It is governed by a mayor, who is responsible for administration of town departments, agencies, and offices and for making appointments of department heads and other town officers.⁵³⁸ The legislative authority in East Haven is the town council,⁵³⁹ which is responsible for making certain appointments to town boards and commissions.⁵⁴⁰

2.3.4.1 Planning and Zoning

East Haven has established a PZC, which is endowed with all the powers and duties prescribed by state law, including creation of a POCD and issuance of zoning regulations.⁵⁴¹ The PZC has issued both zoning regulations and subdivision regulations. The zoning regulations require the PZC to appoint a ZEO.⁵⁴² The head of the Planning and Zoning Department is the designated ZEO for the town. East Haven has also established a ZBA, whose members are appointed by the town council.⁵⁴³

2.3.4.1.1 Zoning Approvals

The Planning and Zoning Department, as the ZEO, is responsible for issuing zoning permits for construction and signage, as well as compliance inspections and other duties.⁵⁴⁴ Where a special exception or temporary special exception is required for a use, such exception is issued by the PZC.⁵⁴⁵ The PZC also reviews and approves site plans.⁵⁴⁶ The powers and duties of the ZBA hears and decides appeals from decisions by the ZEO and determines requests for variances, which may be granted where “a literal enforcement of these Regulations would result in exceptional difficulty or unusual hardship.”⁵⁴⁷

2.3.4.1.2 Building Code

The Mayor appoints a Building Official for the town, who with the Building Department is responsible for the administration and enforcement of the state building and demolition codes.⁵⁴⁸

2.3.4.1.3 Flood Prevention and Management

East Haven has created a FECB as authorized by state law and has explicitly adopted the relevant provisions of state law governing its powers and duties.⁵⁴⁹

East Haven has also promulgated a flood damage prevention ordinance applicable to property owners, as required by state law.⁵⁵⁰ The ordinance regulates floodplain development and complies

⁵³⁸ EAST HAVEN, CONN. CHARTER at ch. V [hereinafter *East Haven Charter*].

⁵³⁹ *Id.* ch. III § 1.

⁵⁴⁰ *Id.* ch. IV.

⁵⁴¹ *Id.* ch. VI §14.

⁵⁴² EAST HAVEN, CONN. ZONING REGS § 52.1 [hereinafter *East Haven Zoning Regs.*].

⁵⁴³ *East Haven Charter* at ch. IV § 2.

⁵⁴⁴ *East Haven Zoning Regs.* § 52.3.

⁵⁴⁵ *Id.* § 33.

⁵⁴⁶ *Id.*

⁵⁴⁷ *Id.* §§ 3, 51.2.

⁵⁴⁸ *East Haven Charter* at ch. VI § 6.

⁵⁴⁹ EAST HAVEN, CONN. CODE § 9-16 [hereinafter *East Haven Code*].

⁵⁵⁰ *Id.* § 9-31.

with requirements for participation in the NFIP.⁵⁵¹ The East Haven Town Engineer is the appointed flood plain administrator for East Haven.⁵⁵² A floodplain development permit is required from the engineer prior to commencement of any development.⁵⁵³ Permits require that development comply with the ordinance provisions for flood hazard reduction.⁵⁵⁴ The ZBA hears requests for variances from town floodplain requirements,⁵⁵⁵ which may be issued only in certain cases, as well as appeals from decisions by the engineer.⁵⁵⁶ The ZBA cannot issue variances from the zoning regulations related to the Farm River Flood Plain Overlay District.⁵⁵⁷

2.3.4.1.4 Coastal Management

East Haven implements the Coastal Management Act through its zoning regulations, which govern development seaward of the state-defined coastal boundary. In this coastal area, coastal site plan review is required prior to any activity involving the use of land, building and other structures.⁵⁵⁸ Coastal Site Plans are submitted shall be submitted to the Engineering Department and reviewed and approved or denied by the PZC or ZBA, as determined by the zoning regulations.⁵⁵⁹

2.3.4.1.5 Inland Wetlands and Watercourses

East Haven has established an Inlands Wetlands and Water Courses Commission established in accordance with state law.⁵⁶⁰ The Commission's responsibilities and powers are those authorized under state statutes.⁵⁶¹

2.3.4.1.6 Historic Districts

East Haven has not established any historic districts by charter, ordinance, or zoning regulation.

2.3.4.1.7 Other

- East Haven has a community development action plan agency, which has the powers and carries out all of the duties as provided in state law, including enabling the Town to qualify for grants from the state department of community affairs and to undertake those projects as required by the department of community affairs.⁵⁶²
- East Haven has created a joint airport zoning board with the City of New Haven known as the "New Haven-East Haven Airport Zoning Board."⁵⁶³ The Board has the powers and authority granted and provided in state law.⁵⁶⁴

⁵⁵¹ *Id.* § 9-32.

⁵⁵² *Id.* § 9-66.

⁵⁵³ *Id.* §§ 9-68 – 9-69.

⁵⁵⁴ *See East Haven Code* §§ 9-76 – 9-78.

⁵⁵⁵ *Id.* §§ 9-101 – 9-104.

⁵⁵⁶ *Id.* § 9-101.

⁵⁵⁷ *East Haven Zoning Regs.* § 29.9.1

⁵⁵⁸ *Id.* § 46.

⁵⁵⁹ *Id.* § 46.6.

⁵⁶⁰ *East Haven Code* § 14-66.

⁵⁶¹ *Id.* § 14-67.

⁵⁶² *Id.* § 14-18.

⁵⁶³ *Id.* § 3-16.

⁵⁶⁴ *See Conn. Gen. Stat.* §§ 15-88 - 15-97.

2.3.4.2 Water Quality

The East Haven charter requires the creation of a water pollution control agency for the town, which is to be responsible for “the operation and maintenance of all Sanitary Sewer Systems, including trunk lines, pump stations, lift stations and appurtenances” in town.⁵⁶⁵ However, in practice East Haven is a member of the Greater New Haven Water Pollution Control Authority, which is a regional water pollution control authority with powers set forth in state law.⁵⁶⁶

East Haven has issued stormwater management regulations as part of its zoning regulations. These regulations require any applicant seeking approval of a site plan, coastal site plan, and/or inland wetland permit application to submit a Stormwater Management Plan.⁵⁶⁷

2.3.4.3 Parks, Wildlife, and Open Space

The Parks Department maintains 133 acres, which includes cleaning and maintaining beach grounds (Town Beach, Beach House & recreational areas). All public beaches and public beach facilities within the Town are under the jurisdiction of the parks and recreation commission.⁵⁶⁸

2.3.4.4 Transportation Infrastructure

2.3.4.4.1 Navigation

East Haven has not established any ordinances or other authority regulating or managing harbors or ports.

2.3.4.4.2 Highways

The Department of Public Services has “supervision and control of the maintenance of all Town owned structures,” and “of the planning, surveying, constructing and reconstructing, altering, paving, repairing, maintaining, cleaning, lighting and inspecting highways, sidewalks and curbs, public and private drains, and other public improvements.”⁵⁶⁹ The town has promulgated limited ordinances governing town roadways, but these do not contain specific standards.⁵⁷⁰

2.3.4.5 Shellfish

East Haven has not established any ordinances or other authority regarding shellfish management.

⁵⁶⁵ *East Haven Charter* at ch. VI § 16.

⁵⁶⁶ *East Haven Code* §§ 20-46 – 2055; see Conn. Gen. Stat. §§ 22a-500 - 22a-519 (setting out powers of regional water pollution control agencies).

⁵⁶⁷ *East Haven Zoning Regs.* § 48.3.

⁵⁶⁸ *East Haven Code* § 13-16.

⁵⁶⁹ *East Haven Charter* at ch. VI § 5.

⁵⁷⁰ See *East Haven Code* at ch. 17.

2.3.5 Fairfield

Fairfield is a town, instituted by charter, using a Board of Selectmen Executive / Representative Town Meeting Legislature format.⁵⁷¹ Legislation can be challenged by referendum.⁵⁷² Legal controls are promulgated through its charter, a code of ordinances, zoning regulations, and subdivision regulations.

2.3.5.1 Planning and Zoning

Land use decision making is carried out by the Town Plan and Zoning Commission. This seven-member, elected, party-balanced Commission holds joint zoning, subdivision, and planning authority,⁵⁷³ combining those functions as defined in state law.⁵⁷⁴ The Commission is responsible for the preparation and adoption of a master plan.⁵⁷⁵ This work is supported by a Planning Director appointed by the Commission and a Town Plan and Zoning Department staff.⁵⁷⁶ The most recent master plan was passed in 2000,⁵⁷⁷ although it was amended in 2011 with regard to a particular subset of the town at the “Commerce Drive Station Area” for a mixed-use neighborhood.⁵⁷⁸ The 2000 plan incorporates an update to the Shore Area Management Plan, as required by the Connecticut Coastal Management Act,⁵⁷⁹ with recommendations for zoning reforms and open space development.⁵⁸⁰

Fairfield is a member of MetroCOG⁵⁸¹ pursuant to state law.⁵⁸² As of 2010, Fairfield is also member to the Greater Bridgeport Regional Council of Elected Officials in order to provide “a policy board to guide the [MetroCOG].”⁵⁸³

⁵⁷¹ FAIRFIELD, CONN, CHARTER §§ 4.1(A) (powers of the Representative Town Meeting), 6.1(C) (powers of the Board of Selectmen), 6.2(A) (powers of the First Selectman) [hereinafter *Fairfield Charter*].

⁵⁷² *Id.* §§ 13.1 - 13.2.

⁵⁷³ *Id.* § 8.5(B).

⁵⁷⁴ Conn. Gen. Stat. §§ 8-1 *et seq.*, 8-18 *et seq.*

⁵⁷⁵ *Fairfield Charter* § 8.5(B)(1).

⁵⁷⁶ *Id.* §§ 8.5(C), 9.23.

⁵⁷⁷ Town of Fairfield PZC, *Town Plan of Conservation and Development* (2000) [hereinafter *Fairfield POCD*].

⁵⁷⁸ Town of Fairfield PZC, *Fairfield Plan of Conservation and Development: Commerce Drive Station Area Addition to POCD* (May 3, 2011).

⁵⁷⁹ Conn. Gen. Stat. § 22a-90 *et seq.*

⁵⁸⁰ *Fairfield POCD* at 60.

⁵⁸¹ FAIRFIELD, CONN. CODE § 4-8 [hereinafter *Fairfield Code*].

⁵⁸² Conn. Gen. Stat. § 8-31 *et seq.*

⁵⁸³ *Fairfield Code* § 36-1.

2.3.5.1.1 Zoning Approvals

The Planning Director also implements zoning and planning regulations,⁵⁸⁴ which include zoning regulations⁵⁸⁵ and subdivision regulations.⁵⁸⁶ Appeals to zoning determinations are taken to the ZBA,⁵⁸⁷ pursuant to state law.⁵⁸⁸

2.3.5.1.2 Building Code

Fairfield has adopted the Connecticut Basic Building Code.⁵⁸⁹ The code, in addition to ordinances regulating construction and projects,⁵⁹⁰ is enforced by the Building Official and a staff including Building Inspectors, in cooperation with the Fire Marshal.⁵⁹¹ Building permits cannot issue for structures on properties not approved for that use by the Town Plan and Zoning Commission.⁵⁹² The Board of Building Appeals hears appeals from the Building Official's decisions.⁵⁹³

2.3.5.1.3 Flood Prevention and Management

The town FECB, has power to plan, build, and maintain flood controls, take property, and levy special district fees,⁵⁹⁴ pursuant to State authority.⁵⁹⁵ Under its most recent Mitigation Master Plan, the Control Board is concentrating on implementing flood hazard mitigation projects, including funding home elevation through FEMA's Hazard Mitigation Grant Program and building physical flood control barriers, including new infrastructure and beach replenishment.⁵⁹⁶ The plan is broken down into numbered projects by funding source.⁵⁹⁷

2.3.5.1.4 Coastal Management

Coastal Site Plan Review for compliance with state law is required for projects within the Coastal Boundary; the review process is handled by the Planning Director in parallel to the primary zoning process.⁵⁹⁸ "Activities conducted for the specific purpose of conserving or preserving soil, vegetation, water, fish, shellfish, wildlife and other coastal land and water resources" are exempt from this review process.⁵⁹⁹

⁵⁸⁴ *Fairfield Charter* § 8.5(D).

⁵⁸⁵ FAIRFIELD, CONN. ZONING REGS. § 2.20 [hereinafter *Fairfield Zoning Regs.*].

⁵⁸⁶ FAIRFIELD, CONN. SUBDIVISION REGS. § 1.0.

⁵⁸⁷ *Fairfield Charter* § 8.6(B).

⁵⁸⁸ Conn. Gen. Stat. §§ 8-5 - 8-7d. The Charter authorization includes § 8-7e, but that section has been repealed.

⁵⁸⁹ *Fairfield Code* § 56-2; see also Conn. Gen. Stat. § 29-252 (building code).

⁵⁹⁰ See *Fairfield Code* §§ 56-4 et seq., 57-1 et seq. 64-1 et seq. (adopting the Fire Prevention Code).

⁵⁹¹ *Fairfield Charter* § 9.8(C).

⁵⁹² *Fairfield Code* § 56-1.

⁵⁹³ *Fairfield Charter* § 10.11; Conn. Gen. Stat. § 29-266.

⁵⁹⁴ *Fairfield Charter* § 10.12.

⁵⁹⁵ Conn. Gen. Stat. §§ 25-84 to 25-94.

⁵⁹⁶ Fairfield FECB, *Fairfield Flood Mitigation Plan* (2015), available at http://www.fairfieldct.org/filestorage/10736/12067/17055/26401/Fairfield_Flood_Mitigation_Status_and_Plans_-_01-06-2015.pdf (last visited Aug. 31, 2016).

⁵⁹⁷ *Id.*

⁵⁹⁸ *Fairfield Zoning Regs.* § 2.14.1.

⁵⁹⁹ *Id.* § 2.14.2(a).

2.3.5.1.5 Inland Wetlands and Watercourses

The Commission develops and implements a comprehensive regulatory program for inland wetland protection as the town's Inland Wetland Agency,⁶⁰⁰ pursuant to State authority.⁶⁰¹ The Inland Wetlands Program reduces flooding, controlling sediment and erosion, protects habitat, and improves water quality multiple tiers of permitting for developments within a jurisdictional buffer which encompasses nearly half of the Town's land area.⁶⁰² Developments on property which contains a wetland or associated buffer must obtain a Certificate of Wetland Conformance, issued by staff according to an engineering assessment of soils impacts from the project.⁶⁰³ Developments on or affecting wetlands require a more extensive permit application process, including engineering reports and sometimes public hearings, ending with a vote by the Commission.⁶⁰⁴ Coastal developments are instead reviewed and permitted by the state.

2.3.5.1.6 Historic Districts

The five-member, appointed and confirmed, party-balanced Historic District Commission has the authority of both a historic district commission and historic properties commission under state law.⁶⁰⁵ Fairfield has three historic districts: Old Post Road Historic District, Greenfield Hill Historic District, and Southport Historic District.⁶⁰⁶ The Commission must approve any alteration to designated historic structures or structures in historic districts.⁶⁰⁷ Appeals from Commission determinations may be taken directly to superior court.⁶⁰⁸

2.3.5.1.7 Other Relevant Entities

- The seven-member, appointed Economic Development Commission studies opportunities for economic development and collaborates with private organizations,⁶⁰⁹ pursuant to state authority.⁶¹⁰
- The seven-member, appointed, party-balanced Affordable Housing Committee conducts studies and inventories of potential properties to purchase as affordable housing.⁶¹¹
- The Director of Community and Economic Development, appointed by the First Selectman,⁶¹² develops and implements an Affordable Housing Plan,⁶¹³ administers HUD's

⁶⁰⁰ *Id.* § 10.3(C); *Fairfield Code* §§ 67-1 *et seq.*

⁶⁰¹ Conn. Gen. Stat. §§ 22a-36 *et seq.*

⁶⁰² FAIRFIELD, CONN. INLAND WETLANDS AND WATERWAYS REGS. § 1.1.

⁶⁰³ *Id.* § 6.4.

⁶⁰⁴ *Id.* § 7.1 *et seq.*

⁶⁰⁵ *Id.* § 7-147a *et seq.*

⁶⁰⁶ *Fairfield Code* §§ 26-1 *et seq.*

⁶⁰⁷ See Fairfield Historic District Commission, HISTORIC DISTRICTS AND PROPERTIES HANDBOOK (rev. 2016).

⁶⁰⁸ Conn. Gen. Stat. § 7-147i.

⁶⁰⁹ *Fairfield Code* §§ 16-1, 16-2.

⁶¹⁰ Conn. Gen. Stat. § 7-136.

⁶¹¹ *Fairfield Code* §§ 6-1, 6-2.

⁶¹² *Fairfield Charter* § 9.12(A).

⁶¹³ See Fairfield Affordable Housing Committee, DIVERSIFYING FAIRFIELD'S HOUSING PORTFOLIO: TAKING CONTROL OF OUR FUTURE (2014), available at http://www.fairfieldct.org/filestorage/10726/11008/13302/18266/20316/AHC_Final_Report_103114.pdf (last visited Aug. 31, 2016).

Community Development Block Grant program⁶¹⁴ and Neighborhood Assistance Act and liaises between the EDC and the Task Force.⁶¹⁵

2.3.5.2 Water Quality

Sewerage is managed through the Public Works Department by a seven-member, appointed, party-balanced Water Pollution Control Board,⁶¹⁶ pursuant to State authority,⁶¹⁷ with services administered through a Sewer Department.⁶¹⁸

2.3.5.3 Parks, Wildlife, and Open Space

The nine-member, appointed, party-balanced Parks and Recreation Commission,⁶¹⁹ assisted by a Director of Parks and Recreation appointed by the First Selectman and a Department staff, is charged to create plans for the “development and maintenance” of public and private recreational spaces,⁶²⁰ including parallel filings presented to the Harbor Management Commission, Golf Commission, or Board of Education for properties under their specific authority.⁶²¹ The Department also has consultation obligations to the Department of Public Works and Conservation Commission.⁶²² Four public beaches are administered by the Commission, which has authority to require admission permits.⁶²³

The seven-member, appointed, party-balanced Land Acquisition Commission is required to develop a comprehensive plan to acquire “70 acres of open space for each 1,000 residents of the town.”⁶²⁴ A Land Acquisition Fund is used to effectuate this plan by resolution of the Representative Town Meeting,⁶²⁵ although the Commission itself has no authority to make purchases.⁶²⁶ Unless otherwise designated, all property acquired by the town is designated as open space.⁶²⁷ Taking for private economic development is prohibited.⁶²⁸

The seven-member, appointed, party-balanced Conservation Commission, assisted by a Conservation Commissioner,⁶²⁹ has a duty to protect and develop natural resources including open

⁶¹⁴ See Town of Fairfield Community & Econ. Dev., *Community Development Block Grant (CDBG) Application for Funding: Program Year 42* (2016), available at http://www.fairfieldct.org/filestorage/10726/11008/13302/18266/20275/CDBG_Application.pdf (last visited Aug. 31, 2016).

⁶¹⁵ *Fairfield Charter* § 9.12(C).

⁶¹⁶ *Fairfield Charter* § 10.13.

⁶¹⁷ Conn. Gen. Stat. §§ 25-55 *et seq.*

⁶¹⁸ See FAIRFIELD, CONN. WATER POLLUTION CONTROL AUTHORITY RULES & REGS (2006).

⁶¹⁹ *Fairfield Charter* § 10.10.

⁶²⁰ See FAIRFIELD, CONN. RULES AND REGS.: FAIRFIELD BEACHES, WATERWAYS, CHANNELS, MARINAS, PARKS, FIELDS, AND OPEN SPACE AREAS OWNED AND OPERATED BY THE TOWN OF FAIRFIELD (2015).

⁶²¹ *Fairfield Charter* § 9.11(B); *Fairfield Code* §§ 4-17, 4-18.

⁶²² *Fairfield Charter* § 9.11(B).

⁶²³ *Fairfield Code* § 50-2.

⁶²⁴ *Id.* § 35-10.

⁶²⁵ *Id.* § 35-11.

⁶²⁶ *Id.* § 35-10.

⁶²⁷ *Id.* § 35-12(C)(3).

⁶²⁸ *Fairfield Code* §§ 20-3.

⁶²⁹ *Id.* § 9.25(A).

space and waters.⁶³⁰ This Commission pursues and holds conservation easements in the name of the Town.⁶³¹

Tree and vegetation maintenance is managed by a licensed Tree Warden.⁶³²

Two Town-owned golf courses, the Par 3 Golf Course and the H. Smith Richardson Golf Course, are regulated by a seven-member, appointed, party-balanced Golf Commission.⁶³³ One is in the coastal area.

2.3.5.4 Transportation Infrastructure

2.3.5.4.1 Navigation

Using a harbor maintenance ordinance modelled under state authority,⁶³⁴ Fairfield regulates Southport Harbor as a “Harbor Management Area,”⁶³⁵ which includes Southport Inner Harbor, Southport Outer Harbor, and the Sasco Brook area.⁶³⁶ A Harbor Management Commission, housed within the Public Works Department, is responsible for composing a Management Plan that in turn is approved by USACE, State Commissioners of Environmental Protection and Transportation, and the Representative Town Meeting.⁶³⁷ Regulations under the Ordinance are enforceable by the Harbormaster (a state officer) and by the police.⁶³⁸ The Ordinance includes controls on usage, liability, facility maintenance, mooring and navigation, sanitation.⁶³⁹ The Parks and Recreation Commission has authority to designate mooring grounds and swimming areas.⁶⁴⁰

The Commission must conduct a Town Harbor Management Consistency Review of “proposed projects and activities affecting the Harbor Management Area,” which includes development proposals other than one and two family homes, uses below mean high water, and changes to Town plans, rules, and regulations.⁶⁴¹ The Commission is separately required to issue recommendations on any permit notice “affecting the real property on, in or contiguous to the Commission’s jurisdiction....”⁶⁴²

2.3.5.4.2 Highways

The Department of Public Works, led by a Director of Public Works appointed by the First Selectman,⁶⁴³ administers town facilities and provides expert engineering support to other

⁶³⁰ *Id.* § 10.3(B).

⁶³¹ *Id.* § 10.3(B)(2)(e).

⁶³² *Fairfield Charter* § 9.18; Conn. Gen. Stat. §§ 23-58 *et seq.*

⁶³³ *Fairfield Charter* § 10.18.

⁶³⁴ Conn. Gen. Stat. §§ 22a-113k *et seq.*

⁶³⁵ *Fairfield Code* § 24-1(D) (harbor management); *see also* Conn. Gen. Stat. §§ 22a-113k - 22a-113t.

⁶³⁶ *Fairfield Code* § 24-7.

⁶³⁷ *Id.* §§ 24-4(A), 24-6; *see also* Conn. Gen. Stat. § 22a-113m.

⁶³⁸ *Fairfield Code* § 24-3(D).

⁶³⁹ *Id.* §§ 24-11 - 24-13.

⁶⁴⁰ *Id.* § 54-3.

⁶⁴¹ *Id.* § 24-14(A-C).

⁶⁴² *Id.* § 24-8(C).

⁶⁴³ *Id.* § 9.7(A).

commissions and departments.⁶⁴⁴ The Director has rulemaking authority.⁶⁴⁵ A nine-member, appointed Town Facilities Commission (funded under the Public Works budget) coordinates, schedules, and accounts for town building projects.⁶⁴⁶

Significant Town building projects begin with a feasibility committee appointed by the Board of Selectmen.⁶⁴⁷ The Town Facilities Commission then appoints a project building (sub)committee (PBC), including at least one member of the feasibility committee.⁶⁴⁸ The PBC reports to the Town Facilities Commission at regular meetings, following a project management flow chart available at town offices.⁶⁴⁹

2.3.5.5 Shellfish

The seven-member, appointed Shellfish Commission is a subset of the Conservation Commission charged with protecting shellfishing grounds, issuing licenses, and development and implementation of a Shellfish Management Plan⁶⁵⁰ pursuant to state authority.⁶⁵¹ The plan includes goals, management guidelines for resource areas, and recommendations for other agencies.⁶⁵²

⁶⁴⁴ *Id.* §§ 9.7(B), 10.8.

⁶⁴⁵ *Id.* § 9.7(B)(5).

⁶⁴⁶ *Fairfield Code* § 39A-1 *et seq.*

⁶⁴⁷ *See id.* § 39A-2(A).

⁶⁴⁸ *Id.*

⁶⁴⁹ *Id.* at § 39A-2(B).

⁶⁵⁰ *Id.* § 39-1.

⁶⁵¹ Conn. Gen. Stat. § 26-257a.

⁶⁵² Fairfield Shellfish Commission, TOWN OF FAIRFIELD SHELLFISH MANAGEMENT PLAN (2003).

2.3.6 Guilford

Guilford is led by a board of five selectmen whose authority includes enacting ordinances.⁶⁵³ The first selectman serves as chief executive.⁶⁵⁴ The legislative body of the town is a town meeting.⁶⁵⁵

2.3.6.1 Planning and Zoning

The PZC and ZBA are the chief land use planning and zoning entities in Guilford. Both were established by the town charter and have the powers set out in state law.⁶⁵⁶ Guilford has established a town POCD as required by state law, as well as zoning and subdivision regulations and other regulations for specific purposes as described below.

2.3.6.1.1 Zoning Approvals

The town zoning regulations create a wide range of classes of districts and overlay districts, including some districts that are coastal or for conservation purposes (Marine Recreation District, Mixed Use/Open Space, Mixed Use/Conservation 1 and 2, Floodplain District (overlay)).⁶⁵⁷ Zones are associated with restrictions on allowable uses as well as area, location, and bulk requirements.⁶⁵⁸

Certain zones are subject to heightened or more specific requirements, including a requirement in many cases to obtain a special permit from the PZC for new or changed uses.⁶⁵⁹ Excavation, removal, or deposit of earth and other building materials requires a special permit from the PZC and is not covered in following sections.⁶⁶⁰ Special permits and certain other activities will require approval of a site plan and, in some cases, design review.⁶⁶¹ Site plans must be consistent with the POCD and meet other requirements, including, but not limited to, stormwater management, erosion and sediment control, wetlands and flood hazards.⁶⁶²

The ZBA has authority to hear appeals from zoning decisions as well as direct authority to review certain activities, which include designation of nonconforming lots and variances from the regulations.⁶⁶³

⁶⁵³ GUILFORD, CONN. CHARTER & ORD. § 3 [hereinafter *Guilford Code*].

⁶⁵⁴ *Id.* § C-3-2.

⁶⁵⁵ *Id.* § C-7.

⁶⁵⁶ *Id.* §§ C-4-6.

⁶⁵⁷ *Id.* § 273-4.

⁶⁵⁸ *Guilford Code* §§ 273-16 - 273-48.

⁶⁵⁹ *Id.* §§ 273-112 *et seq.*; *see also, e.g., id.* §§ 273-182 (requiring special permit for uses in mixed use/conservation 1 zones); 273-222 (requiring special permit for uses in mixed use/open space zones).

⁶⁶⁰ *Id.* § 273-66. While there are a number of exceptions, they do not appear to include natural/green infrastructure activities other than those limited in size or scope or included in, for example, bona fide landscaping activity. *Id.*

⁶⁶¹ *Id.* § 273-63; *see, e.g., id.* § 273-222(B) (requiring site plan and design review for new, changed, or expanded uses in mixed use/open space zones).

⁶⁶² *Guilford Code* § 273-76.

⁶⁶³ *Id.* §§ 273-15 (nonconforming lots), 273-91 (coastal site plans).

2.3.6.1.2 Building Code

Guilford has adopted the state building code, which is administered by a building official appointed by the Board of Selectmen.⁶⁶⁴ There is also a Building Code Board of Appeals as authorized by state law.⁶⁶⁵

2.3.6.1.3 Flood Prevention and Management

Guilford has established a FECB by charter and has explicitly adopted the state Flood and Erosion Control Board Act.⁶⁶⁶ The board is endowed with all the powers and duties provided by state law and a majority of its members are selectmen.⁶⁶⁷

Flood damage prevention ordinances require a permit from the Town Engineer prior to the commencement of any development activities in a SFHA, as determined per the relevant FIRM.⁶⁶⁸ The ordinances include general and specific provisions for flood hazard reduction.⁶⁶⁹ Special requirements also apply specifically to development in CHHAs, including certification of secure anchoring and adequacy of breakaway walls and other building design and practices.⁶⁷⁰ Variance applications and appeals from decisions of the Town Engineer are heard by the Building Code Board of Appeals, whose decisions may be further appealed to state court.⁶⁷¹ Variances may be available only in specific situations outside of floodways, including for registered historical buildings, but variances are rarely granted.⁶⁷²

The town zoning regulations also include specific regulations for the floodplain district (FEMA Zones A, AE, and VE), in which a permit from the Town Engineer is required prior to construction, movement, or substantial improvement of any building or structure in accordance with the town code.⁶⁷³ Permits are also required to engage in paving (other than normal maintenance and repair) or excavation, removal, grading, or depositing of earth materials.⁶⁷⁴

2.3.6.1.4 Coastal Management

Coastal site plan review is included in the zoning regulations as required by state law and consistent with recommendations of the municipal coastal program included in the town POCD.⁶⁷⁵ Buildings, uses, and structures shoreward of the coastal boundary require submission of a coastal site plan to the PZC (activities requiring a site plan, subdivisions, activities requiring a special permit, referred municipal projects) or ZBA (variances). Exempted activities, including “activities conducted for the specific purpose of conserving or preserving soil, vegetation, water, fish, shellfish,

⁶⁶⁴ *Id.* §§ 148-1, 148-2.

⁶⁶⁵ *Id.* § 9-3.

⁶⁶⁶ *Id.* §§ 42-1, 42-4

⁶⁶⁷ *Guilford Code* §§ 9-9, §42-2. The charter specifies a seven-person board with 5 selectmen as members, while the ordinances specify a five-person board with 3 selectman members. *Id.* § 9-9.

⁶⁶⁸ *Id.* §§ 174-6 - 174-8, 174-13.

⁶⁶⁹ *Id.* §§ 174-16, 174-18

⁶⁷⁰ *Id.* §§ 174-15, 174-19

⁶⁷¹ *Id.* §§ 174-21, 174-22.

⁶⁷² *Guilford Code* § 174-23, -24

⁶⁷³ *Id.* § 273-89.

⁶⁷⁴ *Id.*

⁶⁷⁵ *Id.* § 273-91.

wildlife and other coastal land and water resources,” do not require a permit – but shoreline FECS are not exempt.⁶⁷⁶ Certain activities need special permits only in the coastal overlay zone, including non-residential uses and multi-family residential uses, and certain water-dependent uses can be authorized by special permit in zones where they would otherwise not be allowed.⁶⁷⁷ Certain activities are also excluded in the coastal overlay zone, including mining, deposit, or processing of sand and gravel, rock, or other material except subject to DEEP regulation of dredged material.⁶⁷⁸ Other requirements relate to setbacks from critical coastal resources, reduction in impervious surface, impacts on views, vegetated buffers, LID (stormwater), and public access.⁶⁷⁹

Guilford has created a Hazard Mitigation Commission in furtherance of the town’s responsibilities under the Coastal Management Act.⁶⁸⁰ Its purpose is to advise the Board of Selectmen on implementation of the town Hazard Mitigation Plan, which has been adopted by the Board and approved by FEMA.⁶⁸¹

2.3.6.1.5 Inland Wetlands and Watercourses

Guilford has established an Inlands Wetlands Commission, as required by state law.⁶⁸² The IWC has created regulations defining the boundaries of the town inland wetlands and watercourses and providing for their protection.⁶⁸³ It has issued these regulations,⁶⁸⁴ which are consistent with state law and identify uses permitted as of right and activities requiring notice to the commission.⁶⁸⁵ The latter category includes non-regulated uses (including operations for conservation of soil, vegetation, water, fish, shellfish, wildlife, including minor erosion control work, provided they do not disturb the natural and indigenous character of the wetland or watercourse) and activities requiring a permit—which include all activities not specifically excluded.⁶⁸⁶ The town has explicitly delegated exclusive jurisdiction to DEEP for activities undertaken by an instrumentality of the state, tidal wetlands, and dams.⁶⁸⁷ The regulations further provide for the permitting process and review.

2.3.6.1.6 Historic Districts

There is a Historic District Commission in Guilford with powers as set out in state law and that is charged with preservation of two historic districts in town.⁶⁸⁸ A certificate of appropriateness as to external architectural features is required from the HDC prior to erecting, altering, restoring,

⁶⁷⁶ *Id.*

⁶⁷⁷ *Guilford Code*

⁶⁷⁸ *Id.* § 273-91.

⁶⁷⁹ *Id.*

⁶⁸⁰ *Id.* § 9-13

⁶⁸¹ *Id.* § 50-1

⁶⁸² *Guilford Code* § 64-1.

⁶⁸³ *Id.* § 64-6.

⁶⁸⁴ GUILFORD, CONN. INLAND WETLANDS & WATERCOURSES REGS. (2012), *available at* www.ci.guilford.ct.us/pdf/inland-wetlands-regulations.pdf (last visited Aug. 31, 2016).

⁶⁸⁵ *Guilford Code* §§ 271-10 – 271-13.

⁶⁸⁶ *Id.* Non-regulated activities require notice to the commission only if they “may “disturb the natural and indigenous character of the wetland or watercourse.” *Id.* § 271-13.

⁶⁸⁷ *Id.* §§ 271-15, 271-16

⁶⁸⁸ *Id.* §§ 9-14, 187-3, 187-5.

moving, or demolishing a building or structure in a district; a certificate is also required as to parking for any non-residential use in a district.⁶⁸⁹

Guilford has established additional requirements for building demolition regardless of location. A permit from the building department is required prior to demolition of any structure, and permits for “significant buildings” cannot issue until after a waiting period and an opportunity for the public to comment and meet with the property owner to discuss alternatives to demolition.⁶⁹⁰

2.3.6.2 Water Quality

Guilford does not have a municipal sanitary or storm sewer system. Instead, all properties are managed under septic systems. However, the town has established a sewer authority, which is the designated WPCA for the town and has all the powers and duties provided in state law.⁶⁹¹

Stormwater is managed through best management practices, as required by state law, and through roadway catch basins managed by the Department of Public Works.

2.3.6.3 Parks, Wildlife, and Open Space

The town Parks and Recreation Commission is charged with control, development, management, and operation of town parks and recreational facilities, which includes coastal access areas, through a Director of Parks and Recreation and under the general direction of the Board of Selectmen.⁶⁹²

The Public Works Department may be directed to undertake maintenance and care of beaches and parks upon direction from the Public Works Commission after a request from the Parks and Recreation Commission.⁶⁹³

The town ordinances establish regulations for the use of town parks and public places, including beaches and the marina, which are enforced by the Parks and Recreation Department and Marina Commission, respectively.⁶⁹⁴

Guilford has established a seven-member conservation commission with the powers and duties provided under state law.⁶⁹⁵ The commission has an advisory role and also is the governing agency for two areas of public land in Guilford: the Timberlands and East River Preserve.⁶⁹⁶

Guilford has also established a land acquisition commission, which consists of 14 members, including representatives from 10 other town boards and entities.⁶⁹⁷ The commission is charged

⁶⁸⁹ *Id.* § 187-6.

⁶⁹⁰ *Guilford Code* § 160-3.

⁶⁹¹ *Id.* §§ 9-32; 119-1, 119-2.

⁶⁹² *Guilford Code* at ch. 85, § 4-10.

⁶⁹³ *Id.* § 5-1.

⁶⁹⁴ *Id.* at ch. 214.

⁶⁹⁵ *Guilford Code* §§ 9-5, 14-1, 214-1 (as amended).

⁶⁹⁶ *Id.* § 214-1.

⁶⁹⁷ *Id.* §§ 9-19, 73-1.

with review and prioritization of parcels for sale based on the goals and objectives in the town open space plan, as well as actions related to budgeting and facilitating of acquisitions.⁶⁹⁸

2.3.6.4 Transportation Infrastructure

2.3.6.4.1 Navigation

Guilford has a marina commission, which is responsible for management of the town marina but does not have regulatory functions.⁶⁹⁹ In addition, there is a town harbor commission, which has the powers and duties as established under state law, including responsibility for creating a harbor management plan and authority to review and make recommendations on applications to municipal land use entities that involve property in or contiguous to the harbor area.⁷⁰⁰ It has created a harbor management plan.⁷⁰¹

2.3.6.4.2 Highways

Town roadways are managed by the Public Works Department, which is under the oversight of the Public Works Commission.⁷⁰² However, excavation of a roadway requires the written permission of the Town Engineer (located in the Building and Engineering Department), and a permit from the engineer is required for any deposition or draining of water on or under a public highway or into the public drainage system. The town has also established standards for design and construction of roadways and acceptance by the town as an accompaniment to the town subdivision regulations.⁷⁰³ Among other provisions in this chapter, Guilford requires the Board of Selectmen to hold a public hearing prior to major reconstruction, alteration, or improvement (including elevation) of roads meeting the state criteria for scenic roads.⁷⁰⁴ There is a Scenic Roads Advisory Committee, which is a study committee without regulatory authority but which would be important in determining the appropriateness of changes to these scenic roads.⁷⁰⁵

2.3.6.5 Shellfish

Guilford has established a Shellfish Commission as provided by state law.⁷⁰⁶ The Commission is charged with management of town shellfisheries and shellfish grounds, including licensing and conditions for the take of shellfish, creation of a shellfish management plan, and issuance of rules and regulations.⁷⁰⁷

⁶⁹⁸ *Id.* § 73-2; *see also* Guilford Land Acquisition Committee, Town of Guilford, Connecticut Plan for Open Space and Municipal Land Needs (1999), *available at* <http://www.ci.guilford.ct.us/pdf/plan-for-open-space-and-municipal-land-needs.pdf> (last visited Aug. 31, 2016).

⁶⁹⁹ *Id.* at ch. 80.

⁷⁰⁰ *Id.* at ch. 48, § 9-12.

⁷⁰¹ Guilford Harbor Mgmt. Comm'n, Guilford Harbor Management Plan (rev. 2012), *available at* http://www.ci.guilford.ct.us/pdf/BOS_Adopted_FINAL_HMP_12-03-12.pdf (last visited Aug. 31, 2016).

⁷⁰² *Guilford Code* §§ C-4-11, C-5-1, § 92-1 *et seq.*

⁷⁰³ *Id.* §§ 241-8 *et seq.*

⁷⁰⁴ *Id.* § 241-16. State highways, highways with intensive commercial development, and highways with intensive vehicular traffic are excluded. *Id.*

⁷⁰⁵ *Id.* §9-26.

⁷⁰⁶ *Id.* §§ 9-27, 106-1.

⁷⁰⁷ *Guilford Code* § 106-5.

2.3.7 Madison

Madison is a town operating under a charter and code of ordinances and is governed by a Board of Selectmen that uses town meetings for many of its decision making procedures.⁷⁰⁸

2.3.7.1 Planning and Zoning

Madison planning and zoning powers are granted through the town's charter, zoning regulations, and ordinances. The PZC⁷⁰⁹ and the ZBA are the primary planning and zoning entities in town; however, other entities are also relevant, as discussed below.⁷¹⁰ Madison is also part of the South Central Regional Council specifically for planning in which the powers and duties of the Council are laid out by state law.⁷¹¹

Madison last updated its POCD in 2013.⁷¹² The Plan guides zoning decisions by recommending the best locations for certain types of development to maintain the character of the community that drew the residents to the town and protect the resources of the town.⁷¹³

2.3.7.1.1 Zoning Approvals

The PZC's powers are those established by state law,⁷¹⁴ including enactment of zoning and land use ordinances,⁷¹⁵ site plan review within the town, which is required in specified circumstances, including but not limited to applications for special exception permits.⁷¹⁶ In a limited set of cases, the ZEO approves or denies zoning requests.⁷¹⁷ The ZBA, created by the town's charter,⁷¹⁸ hears and decides appeals of decisions made by the ZEO⁷¹⁹ and is responsible for deciding applications for use variances.⁷²⁰

2.3.7.1.2 Building Code

Madison applies the state building code.⁷²¹

2.3.7.1.3 Flood Prevention and Management

The town has created a FECB whose members are both appointed by the Board of Selectmen and elected.⁷²² The Board's powers are those designated by state law.⁷²³

⁷⁰⁸ MADISON, CONN. CHARTER §§ 1.1, 2.1 [hereinafter *Madison Charter*].

⁷⁰⁹ *Id.* § 8.1; MADISON, CONN. CODE §§ 15-81 to 15-100 [hereinafter *Madison Code*].

⁷¹⁰ *Madison Charter* § 6.1; MADISON, CONN. ZONING REGS., SUBDIVISION REGS., ZONING MAP § I-13.3 (2015) [hereinafter *Madison Zoning & Subd. Regs.*].

⁷¹¹ *Madison Code* § 15-102 *et seq.*

⁷¹² Madison PZC, *Madison: 2013 Plan of Conservation and Development* (2013).

⁷¹³ *Id.*

⁷¹⁴ *Madison Charter* § 8.1(J).

⁷¹⁵ Conn. Gen. Stat. § 8-17a.

⁷¹⁶ *Madison Zoning & Subd. Regs.* § I-29 *et seq.*; I-4-1 *et seq.* (special exceptions).

⁷¹⁷ *Id.* §§ I-2.15, I-3.3, I-9.1.4, I-10.3.4.

⁷¹⁸ *Madison Charter* § 6.1.

⁷¹⁹ *Madison Zoning & Subd. Regs.* § I-13.3.

⁷²⁰ *Id.* § I-13.4.

⁷²¹ *Madison Code* § 6-1 *et seq.*

⁷²² *Madison Charter* § 8.1(G).

⁷²³ *Madison Code* § 2-173.

The zoning regulations include Flood Plain Districts as designated by the Federal Emergency Management Agency.⁷²⁴ If someone wishes to perform substantial improvements – as defined by the ordinance – or construct or repair a structure within the District, then a permit must be obtained from the Town Engineer.⁷²⁵ These extra requirements are in place to protect the health and safety of the people, ensure flood prone structures are sufficiently fortified, prevent or regulate any barriers that may alter the natural flow of waters or cause greater harm, and control other actions that may result in further harm from flooding.⁷²⁶

2.3.7.1.4 Coastal Management

Coastal site review is required by section 25 of Madison’s Zoning Regulations for proposed changes to buildings or uses that reside within the coastal zone, as defined by state law – unless such change falls under an exemption under Section 25.2.1.⁷²⁷ Any coastal FECS, as defined by the regulation, must have a permit to be constructed or modified and does not fall into any of the exemptions.⁷²⁸ Coastal site review is conducted by the PZC unless accompanied by a variance request, in which case the ZBA reviews both applications simultaneously. Coastal site review may involve a public hearing, at the commission’s discretion, and an applicant must demonstrate that the adverse impacts of the proposed activity are acceptable, as determined by factors listed in the regulations.⁷²⁹

Madison’s Zoning Regulations also include provisions for Stormwater Management and Soil Erosion and Sediment Control.⁷³⁰ This section is geared towards protecting all waterbodies within and adjacent to Madison from various sources of pollution to both protect the waters of the town and ensure that these waters do not subsequently harm Long Island Sound.⁷³¹ Additionally, land-based activities that may compromise the integrity of the soil, or may not conserve and protect the lands, cannot accelerate the effects of erosion.⁷³² For land-based activities, a Soil Erosion and Sediment Control Plan must be submitted to and approved by the ZEO.⁷³³ Stormwater Management is a required part of the Development or Subdivision Plan for any construction within Madison.⁷³⁴

2.3.7.1.5 Inland Wetlands and Watercourses

The Inland Wetlands Agency is an appointed agency created pursuant to and with the powers set out in State law.⁷³⁵ The Agency has created Inland Wetlands Regulations describing the Agency’s

⁷²⁴ *Madison Zoning & Subd. Regs.* § I-2A; *Madison Code* § 9-7.

⁷²⁵ *Madison Zoning & Subd. Regs.* § I-2A.1.1.

⁷²⁶ *Madison Code* § 9.3.

⁷²⁷ *Madison Zoning & Subd. Regs.* § I-25.2.

⁷²⁸ *Id.*

⁷²⁹ *Id.* § I-25.3 *et seq.*

⁷³⁰ *Id.* bk. III.

⁷³¹ *Id.* § III-I.

⁷³² *Id.*

⁷³³ *Madison Zoning & Subd. Regs.* § III-III.

⁷³⁴ *Madison Zoning & Subd. Regs.* § III-V.

⁷³⁵ *Madison Code* §§ 15-41, 15-42.

powers and procedures, including mandatory applications and approval for activities within 100 feet of a regulated wetland.⁷³⁶

2.3.7.1.6 Historic Districts

Madison has established two Historic Districts, neither of which is coastal.⁷³⁷ The Madison Historic Commission oversees both districts and has established regulations and guidelines for any building within a District.⁷³⁸ The Commission requires an owner to file an application prior to certain regulated activities in the historic district, including construction.⁷³⁹ The activity that will be performed upon the building will determine if an application will need to be filed with the Commission.⁷⁴⁰ The Commission holds a public hearing for each application and will determine whether to issue a certificate of appropriateness allowing the work to proceed.⁷⁴¹ Regulated activities will be required to adhere to the design guidelines, also set out by regulation, which apply to specific building elements, such as the windows, entrances, porches, and roofs, and differ based upon the style of the building.⁷⁴²

2.3.7.1.7 Other

- The Conservation Commission, created by the Charter, has the responsibilities of advising any Board or Commission or Committee in relation to the town's natural resources.⁷⁴³ The Commission advises both the Planning and Zoning Board and the Inland Wetlands Agency on open space and environmental issues but is solely advisory.
- The Economic Development Commission is geared towards improving the town's economic viability which may include revitalizing certain areas of town in an attempt to increase the tax base.⁷⁴⁴ It is advisory.
- The Advisory Committee on Community Appearance consists of nine members who serve an advisory role for land use applications.⁷⁴⁵ The Committee requires a preliminary review prior to a final design submission, however, its ruling is not binding but is simply presented for recommendation.⁷⁴⁶ The Committee evaluates whether proposals will "harmonize with and enhance the appearance of the area in which it is situated."⁷⁴⁷

2.3.7.2 Water Quality

Madison has not established a municipal system for sanitary sewage or for stormwater. However, it has created a WPCA for managing water and pollution control, which is endowed with the powers

⁷³⁶ MADISON, CONN. INLAND WETLANDS REGS. §§ 1.1 *et seq.*, 8.1 *et seq.* (2013).

⁷³⁷ *Madison Code* § 15-62.

⁷³⁸ MADISON, CONN. HISTORIC DISTRICT REGULATIONS AND GUIDELINES (2010).

⁷³⁹ *Madison Code* § 15-66.

⁷⁴⁰ MADISON, CONN. HISTORIC DISTRICT REGULATIONS AND GUIDELINES § 4 (2010).

⁷⁴¹ *Madison Code* § 15-67.

⁷⁴² MADISON, CONN. HISTORIC DISTRICT REGULATIONS AND GUIDELINES § 5 (2010).

⁷⁴³ *Madison Charter* § 8.1(C)

⁷⁴⁴ *Id.* § 8.1; Madison Economic Development Commission, *About the MEDC*, at <http://madisonedc.org/about-medc/> (last visited Aug. 31, 2016).

⁷⁴⁵ *Madison Zoning & Subd. Regs.* §§ I-22.1, I-22.2.

⁷⁴⁶ *Id.* § I-22.2.

⁷⁴⁷ *Id.* § I-22.4.

authorized under state law and which has direct authority over any water control facilities in town.⁷⁴⁸ In addition, the ordinances prohibit discharge of sewage, septage, and grease in the town otherwise than into Madison's septage treatment facility absent authorization in writing.⁷⁴⁹ Additionally, the WPCA has created the Water Pollution Control Plan which lays out the boundaries of municipal sewage systems, the locations of treatment plants, areas of non-municipal sewage systems, areas to not allow sewers, and other matters.⁷⁵⁰ The WPCA is also designated as the protector of the town's aquifers and has the authority to create regulations after obtaining the advice of other organizations listed in the ordinance.⁷⁵¹

2.3.7.3 Parks, Wildlife, and Open Space

Madison has established a Beach and Recreation Commission that manages the parks, opens spaces, recreational areas, and beaches of the town.⁷⁵² While not required by law, in practice the commission will make a recommendation to the board of selectmen prior to activities within its areas that may require a permit.⁷⁵³ Subcommittees of the Commission have been established for specific park areas, including the Walter H. Coe Park and Madison Salt Meadow Park.⁷⁵⁴

Hammonasset State Park is located in Madison. The municipality does not have authority to review or approve activities within the park.

2.3.7.4 Transportation Infrastructure

2.3.7.4.1 Navigation

Madison does not have any specific Harbor management entities. Management of the harbor is under the jurisdiction of the state Harbor Master.

2.3.7.4.2 Highways

Madison has established ordinances pertaining to sidewalks and roadways.

2.3.7.5 Shellfish

Madison has both regulations concerning shellfish and an active Shellfish Commission that manages and controls the shellfish and oyster grounds in the town's jurisdiction.⁷⁵⁵ Harvesting can only occur between sunrise and sunset during periods the Commission designates as open season.⁷⁵⁶ Anyone wishing to harvest shellfish needs to obtain a permit.⁷⁵⁷ Additionally, the Commission has established various limitations on the use of "Commercial Hydraulic Clam Harvesting" or

⁷⁴⁸ *Madison Charter* § 8.1; *Madison Code* § 10-27.

⁷⁴⁹ *Madison Code* § 10-46.

⁷⁵⁰ Madison Water Pollution Control Authority, *Water Pollution Control Plan* (2015), available at <http://www.madisonct.org/DocumentCenter/View/524> (last visited Aug. 31, 2016).

⁷⁵¹ *Madison Code* § 10-88.

⁷⁵² *Madison Charter* § 8.1(A); *Madison Code* § 14-28.

⁷⁵³ The first selectman signs permit applications on behalf of the town and would be likely to request input from the commission prior to signing.

⁷⁵⁴ *Madison Code* §§ 14-1, 14-54, 14-110.

⁷⁵⁵ *Madison Charter* § 8.1(N); *Madison Code* §§ 17-1 *et seq.*, 17-26 *et seq.*

⁷⁵⁶ *Madison Code* § 17-3.

⁷⁵⁷ *Id.* § 17-5.

dredging.⁷⁵⁸ The Commission has supported and engaged in oyster restoration and would be consulted in an advisory capacity on projects such as beach nourishment that could affect such efforts.

Madison is also authorized under state law to appoint two or more special constables to inspect and measure shellfish and shells taken from the Hammonasset River and to prosecute violations.⁷⁵⁹

⁷⁵⁸ *Id.* § 17-51 *et seq.*

⁷⁵⁹ Conn. Gen. Stat. §§ 26-277, 26-278.

2.3.8 Milford

Milford is a consolidated city and town operating under a charter and code of ordinances.⁷⁶⁰ It also contains the borough of Woodmont⁷⁶¹ and Laurel Beach Association,⁷⁶² which were incorporated and chartered by the state and are discussed at the end of this section.

2.3.8.1 Planning and Zoning

Milford planning and zoning is a function of the charter, planning ordinances, and zoning regulations. These authorities are implemented by an elected Planning and Zoning Board (PZB),⁷⁶³ appointed ZBA,⁷⁶⁴ and city Department of Permitting and Land Use, which includes a land use division and building division,⁷⁶⁵ as well as by special boards, commissions, authorities, and districts.

Milford is also a member of two regional entities. It is a member of the Housatonic River Estuary Commission, created under state law and is authorized by Milford to study and report on the impacts of activities proposed in or for the estuary.⁷⁶⁶ Milford is also a member of the South Central Regional Council of Governments for planning, and the council can exercise all the powers provided under state law.⁷⁶⁷

The substance of the city planning and zoning requirements is set out in the zoning regulations. The regulations set out districts and district use regulations, including for coastal areas including beach erosion zones, open space, and Housatonic and waterfront design districts.⁷⁶⁸ Supplementary regulations address a variety of topics, including earth filling and removal; flood hazard and damage prevention; coastal site plans; and erosion and sediment control.⁷⁶⁹

2.3.8.1.1 Zoning Approvals

The PZB is responsible for site plan approval, which is required for permit issuance by the ZEO and which follows procedures set out in the regulations. The PZB is also responsible for approval of special permit applications, which are first reviewed by the city engineer, police department, city health department or sewer commission, fire department, and tree commission, and for special

⁷⁶⁰ See Conn. Special Act No. 139 of 1959 (incorporating city).

⁷⁶¹ Conn. Spec. Act No. 208 of 1893 (incorporating Woodmont Improvement District); Conn. Spec. Act No. 431 of 1903 (revising charter, changing name to Woodmont Association); Conn. Spec. Act No. 92 of 1957 (changing the Association to borough status); Conn. Spec. Act No. 646 of 1957 (granting borough all the powers and duties of a borough under the general statutes).

⁷⁶² Conn. Spec. Act No. 148 of 1899 (incorporating the association); Conn. Spec. Act No. 297 of 1919 (amending charter); Conn. Spec. Act No. 109 of 1925 (amending charter).

⁷⁶³ MILFORD, CONN. CHARTER § III-16 [hereinafter *Milford Charter*].

⁷⁶⁴ *Id.* § IV-7.

⁷⁶⁵ MILFORD, CONN. CODE §§ 18-203 – 18-205 [hereinafter *Milford Code*].

⁷⁶⁶ *Id.* §§ 18-206 – 18-208.

⁷⁶⁷ *Id.* §§ 18-117 *et seq.*

⁷⁶⁸ MILFORD, CONN. ZONING REGULATIONS at art. 2-3 (2011) [hereinafter *Milford Zoning Regs.*]

⁷⁶⁹ *Id.* at art. 5.

exceptions to the regulations, through a 2/3 vote of the board.⁷⁷⁰ The ZBA is responsible for hearing and deciding appeals from ZEO decisions and issuance of variances.⁷⁷¹

2.3.8.1.2 Building Code

ZEOs are part of the Department of Permitting and Land Use and are responsible for the administration and enforcement of the regulations and review and approval of building permits, which are required in addition to other permits and processes that are required under other provisions.⁷⁷²

2.3.8.1.3 Flood Prevention and Management

Milford has created a FECB by ordinance, and it has also adopted wholesale the related provisions of state law governing FECBs.⁷⁷³

Flood regulations apply to areas as defined by FEMA (A, AE, VE) and require that a special permit after site plan review by the PZB is needed for any development or construction of a building, structure, or use.⁷⁷⁴ Permits may not issue for uses that may “adversely affect the capacity of channels, watercourses, drainage ditches, or other drainage facilities and/or will increase flood damages to other lands or accelerate erosion,” and “natural protective barriers” must remain intact; open space uses may be allowed below the flood protection elevation.⁷⁷⁵ Other permit requirements apply to buildings and other improvements, and permits may result in conditions including channel improvements. Other particular provisions apply to coastal high hazard areas and floodways.

Earth removal requires a special permit (including site plan review) from the PZB, and filling within 25 feet of a flood hazard area, watercourse, waterbody, or wetland requires the same.⁷⁷⁶

2.3.8.1.4 Coastal Management

Coastal site plans are required as part of planning and zoning applications for buildings, uses, and structures within the state-set coastal boundary, except for certain activities including “activities conducted for the specific purpose of conserving or preserving soil, vegetation, water, fish, shellfish, wildlife and other coastal land and water resources.” Coastal site plans are reviewed according to the requirements of state law.⁷⁷⁷

A soil erosion and sediment control (SESC) plan is also required as part of any application for development greater than ½ acre, which the PZC or New Haven Soil and Water Conservation Board must certify as compliant with the regulations (which incorporate state law).

⁷⁷⁰ *Id.* at art. 7.

⁷⁷¹ *Id.* at art. 9.

⁷⁷² *Id.* at art. 8.

⁷⁷³ *Milford Code* at ch. 18, art. 5, *citing* Conn. Gen. Stat. §§ 25-84 - 25-94.

⁷⁷⁴ *Id.* § 5.8.

⁷⁷⁵ *Id.* § 5.8.6

⁷⁷⁶ *Id.* § 5.7.

⁷⁷⁷ *Id.* § 5.12.

2.3.8.1.5 Inland Wetlands and Watercourses

An inland wetlands agency is created as required by state law, which is authorized to carry out required duties and responsibilities, including review of permit applications for regulated activities.⁷⁷⁸

2.3.8.1.6 Historic Districts

Milford has created two separate Historical Districts, each of which is overseen by a separate historic district commission with all the powers and duties set out in state law. A certificate of appropriateness from the relevant commission is required prior to erection, demolition, or alteration of a building or structure, approval of which is determined based on set considerations.⁷⁷⁹

Milford has created a Historic Preservation Commission to protect the historic and architectural character of properties not within a historic district but listed or under consideration for listing on the national register.⁷⁸⁰ A certificate of appropriateness is required prior to erection, alteration, or demolition of a building or structure on a protected property, absent a variance.⁷⁸¹

2.3.8.1.7 Other Entities

- A Conservation Commission is established with the powers and duties set out in state law.⁷⁸² Its functions are advisory.
- There is a Tree Commission and tree warden. The commission is charged with developing a forestry management plan for the city, limited to trees on municipal property, while the warden is responsible for implementation of the street tree regulations.⁷⁸³
- The Department of Community Development and Economic Development Commission are both established but not given duties related to coastal management.⁷⁸⁴
- A redevelopment agency is created and Milford Progress, Inc. is designated as the downtown development agency for the city, both with all the powers and duties as provided in state law.⁷⁸⁵
- The Milford Housing Partnership was created to increase the supply of affordable housing through participation in the state housing partnership program. Its duties include identifying potential locations for affordable housing on municipal land; suggest zoning changes and develop a long-range plan, and other tasks.⁷⁸⁶

2.3.8.2 Water Quality

The city is designated as a sewer district in which discharge or deposit of sewage or other waste is unlawful except as provided in the ordinances, including through obtaining a connection permit

⁷⁷⁸ *Milford Code* § 18-159 *et seq.*

⁷⁷⁹ *Id.* §§ 18-147 *et seq.*, 18-158.1 *et seq.*

⁷⁸⁰ *Id.* §§ 18-218 *et seq.*

⁷⁸¹ *Id.*

⁷⁸² *Id.* §§ 18-13 *et seq.*

⁷⁸³ *Milford Code* §§ 18-200 *et seq.*

⁷⁸⁴ *Id.* §§ 18-28 *et seq.*; 18-43 *et seq.*

⁷⁸⁵ *Id.* §§ 18-100 *et seq.*

⁷⁸⁶ *Id.* §§ 18-174 *et seq.*

from the city sewer commission. Discharge of unpolluted water, including runoff, to the sanitary sewer is prohibited; such waters must be discharged to a combined or stormwater sewer.⁷⁸⁷

2.3.8.3 Parks, Wildlife, and Open Space

There is a Park, Beach and Recreation Commission, established by the Charter and charged with “operation and management of the City's parks, playgrounds, recreational facilities and activities.”⁷⁸⁸ The commission issues licenses for use of city open space pursuant to city ordinances, which also establish prohibited and regulated activities in particular city parks and spaces.⁷⁸⁹

2.3.8.4 Transportation Infrastructure

2.3.8.4.1 Navigation

The city planning ordinances create the Harbor Management Commission, which has jurisdiction in a defined area of Milford waters and authority.⁷⁹⁰ Its powers and duties include recommendations on issues under its jurisdiction, which must be requested by the city land use authorities, regulation of moorings and anchorages, rulemaking, and oversight of the harbormaster.⁷⁹¹

The city has adopted the 1986 Harbor Management Plan and its rules and regulations, the latter of which are set forth in the code.⁷⁹² Among other topics (e.g., mooring and anchoring permits and requirements; sanitation; boat and traffic control), the regulations require review by the commission of all structures in Milford waters (as defined) for consistency with the HMP.⁷⁹³

2.3.8.4.2 Highways

Streets are under the authority of the Department of Public Works, and their construction is subject to city ordinances. The ordinances do not include provisions for abandonment of streets.⁷⁹⁴

2.3.8.5 Shellfish

The Commissioner of Agriculture exercises jurisdiction over shellfish grounds and franchises within the limits of Milford once surveyed and mapped, provided that the Selectmen of Milford have exclusive jurisdiction over and power to designate or lease grounds in town waters of Indian River, Gulf Pond, and the portion of Milford Harbor north of the breakwater.⁷⁹⁵

Selectmen of Milford may prohibit taking of long [razor?] or soft-shell [steamer?] clams from portions of their natural clam grounds for periods not exceeding one year at a time.⁷⁹⁶

⁷⁸⁷ *Id.* at ch. 23.

⁷⁸⁸ *Milford Charter* at art. IV. § 13.

⁷⁸⁹ *Milford Code* at ch. 16.

⁷⁹⁰ *Id.* §§ 18-77 – 18-84.4.

⁷⁹¹ *Id.*

⁷⁹² *Milford Code* §§ 18-84.3, ch. 16.1; *see also* Milford, Conn. HARBOR MGMT. PLAN (5th ed. 2008), *available at* http://www.ci.milford.ct.us/sites/milfordct/files/file/file/harbor_plan_complete.pdf (last visited Aug. 31, 2016).

⁷⁹³ *Milford Code* § 16.1-31.

⁷⁹⁴ *Id.* at ch. 20.

⁷⁹⁵ Conn. Gen. Stat. § 26-257.

⁷⁹⁶ Conn. Gen. Stat. § 26-260.

2.3.8.6 Other

The borough of Woodmont has all the powers and duties of a borough under state law, which include a broad array of authorities. Woodmont operates under a charter⁷⁹⁷ and code of ordinances and is governed by a warden and board of warden and burgesses, which is the legislative authority for the borough.⁷⁹⁸ Woodmont retains both the powers given to boroughs under state general laws and powers provided by special act, including highways, fire, lighting, garbage, sewers, and piers and docks.⁷⁹⁹ Milford is required to and does provide funding to the borough for certain of these activities.

The borough ordinances include provisions governing creation of new roads, obtaining building permits, activities on beaches, and other matters. In addition, the ordinances create a FECB⁸⁰⁰ and Harbor Management Commission.⁸⁰¹ The Commission has jurisdiction and rulemaking authority (with approval from the board of warden and burgesses) over all navigable waters below the mean high water mark within the borough of Woodmont, as well as over boats on beaches and beach access rights of way. The Commission appears not to have created any plans or regulations to date.

The Laurel Beach Association charter grants the association several powers and duties relevant to shoreline protection. These include “the power to ... construct, accept, and own breakwaters, palisades, piers, clocks, sewers, grounds, buildings, and other structures within said limits and contiguous thereto,” to maintain and repair such structures, and “to protect by suitable means the property within said limits from loss by fire, theft, or any other cause.”⁸⁰² The association was also provided certain powers of a town.⁸⁰³ The town charter did not alter the association charter, which continues in effect.⁸⁰⁴

⁷⁹⁷ This review is based on the charter as amended in 1973 rather than the revised charter posted online by the borough, as the latter appears to be a draft, rather than a final, document. See WOODMONT, CONN. CHARTER, (1966), *as amended*, at <http://www.boroughofwoodmont.us/charter/files/1966-charter-revision> (last visited Aug. 31, 2016).

⁷⁹⁸ WOODMONT, CONN. CHARTER § IV.

⁷⁹⁹ *Id.* § X

⁸⁰⁰ WOODMONT, CONN. ORD. ch. 7 (providing powers only as of state laws from 1955), *citing* Conn. Gen. Stat §§ 2385d -2393d (1955). The board is established and operating, although it does not appear to have created any regulations. See Milford FECB, *Regular Meeting* (Feb. 10, 2015), at http://www.ci.milford.ct.us/sites/milfordct/files/minutes/minutes-file/flood_erosion_control_board_-_2-10-2015_0.pdf (last visited Aug. 31, 2016) (reviewing presentation from borough board to Milford FECB).

⁸⁰¹ WOODMONT, CONN. ORD. ch. 8.

⁸⁰² Conn. Spec. Act No. 148 of 1899 at § 3-5.

⁸⁰³ *Id.* § 8.

⁸⁰⁴ *Milford Charter* at art VII § 1.

2.3.9 New Haven

New Haven is a consolidated town and city government governed by a mayor and board of aldermen under a charter and through a code of ordinances, special laws, a zoning ordinance, and other regulations.

2.3.9.1 Planning and Zoning

Planning and zoning are carried out in New Haven by a number of entities working together, including the Board of Alders, the City Planning Commission, ZBA, City Plan Department (ZEO), and Office of Building Inspection and Enforcement.⁸⁰⁵ New Haven is authorized by law to be a member of the SCRCOG.⁸⁰⁶

The City Planning Commission bears responsibility for preparation and recommendation of the city development plans, with support from the City Plan Department, and it is vested with all the powers and duties of a zoning commission.⁸⁰⁷ The board of alders is authorized, by ordinance, to issue regulations concerning zoning after a report from the commission on such regulations and in conformance with the comprehensive plan.⁸⁰⁸

The Zoning Ordinance is the primary zoning regulation for the city. It creates districts for a variety of use types (e.g., residential, business), including special uses, which include park, airport, historic, coastal management, inland wetland, flood damage prevention, and soil erosion and sediment control districts.⁸⁰⁹ For each district, the description, purpose, and uses permitted are identified, as well as other information where needed.

2.3.9.1.1 Zoning Approvals

The City Plan Department acts as ZEO for the city.⁸¹⁰ The ZBA reviews appeals from CPD decisions as well as requests for variances.⁸¹¹ In some instances, applications are made directly to the Board of Aldermen. The City Plan Commission's role in zoning applications includes advice to other entities, review and approval of site plans, and issuance of special permits.⁸¹²

⁸⁰⁵ See NEW HAVEN, CONN. ZONING ORD. § 61 [hereinafter *New Haven Zoning Ord.*]. The Office is technically the “building division” of the Livable City Initiative (LCI), but in practice its activities are largely autonomous. LCI replaced the prior office of housing and neighborhood development. NEW HAVEN, CONN. CODE tit. III § 21-21 [hereinafter *New Haven Code*]. It is authorized to engage in activities related to the city housing code, including elimination and prevention of blight and rehabilitation of viable buildings and structures. Its powers and duties therefore include, among other things, demolition of unsafe buildings; acquisition and disposal of real estate; building code and zoning ordinance enforcement; and planning and technical assistance in conjunction with the City Plan Department. *Id.* tit. III § 21-22.

⁸⁰⁶ *New Haven Code* tit. III § 21-1.

⁸⁰⁷ *Id.* tit. I, art. VII § 3.

⁸⁰⁸ *Id.* tit. I, art. XIII § 2.

⁸⁰⁹ *New Haven Zoning Ord.* at art. II.

⁸¹⁰ *Id.* § 62.

⁸¹¹ *New Haven Code* tit. I, art. VII § 4, *New Haven Zoning Ord.* § 63.

⁸¹² *New Haven Zoning Ord.* § 61.

Site plans are required for all variance, special permit, or special exemption applications as well as in specified other cases of new development.⁸¹³ The zoning ordinance requires stormwater management plans to protect against discharge of nonpoint source pollution. Under this section, a plan must be included in any application for zoning approval, coastal site plan review, or inland wetlands permit meeting certain conditions. The plan may be referred to the state environment commissioner for determination whether a discharge permit is required, or the application may be approved if consistent with certain requirements.⁸¹⁴

2.3.9.1.2 Building Code

The Office of Building Inspection and Enforcement, through its Building Official, is responsible for administering and enforcing the state building code.⁸¹⁵

2.3.9.1.3 Flood Prevention and Management

The zoning ordinance requires compliance with the Flood Damage Prevention Ordinance (FDPO),⁸¹⁶ which was enacted pursuant to New Haven's police powers to minimize public and private losses due to flood conditions in specific areas.⁸¹⁷ It accomplishes this by restricting uses that are dangerous due to water or erosion hazards (or that may exacerbate these hazards), require protection of vulnerable uses and against flood damage, control the alteration of natural floodplains and other natural barriers; control development that may increase erosion or flood damage; and prevent or regulate construction of flood barriers that may unnaturally divert waters and thereby increase flood hazards.⁸¹⁸ The FDPO applies in SFHAs, defined based on FEMA zones A, AE, and VE.⁸¹⁹ In these areas, a Floodplain Development Permit is required prior to development activities.⁸²⁰ The city Building Inspector—through the City Plan Department, the director of which is the city's floodplain manager—is responsible for administration and implementation of the FDPO, including through review and issuance of permits.⁸²¹ Absent a variance, permits cannot issue without compliance with substantial conditions for residential and non-residential construction.⁸²²

2.3.9.1.4 Coastal Management

The Office of Business Development is run by a Director and is authorized to engage in services related to economic development. While many of these roles are tangential to coastal management

⁸¹³ *Id.* § 67.

⁸¹⁴ *Id.* § 60.

⁸¹⁵ *New Haven Code* tit. III §§ 21-23, 9-44.

⁸¹⁶ *New Haven Zoning Ord.* § 56.

⁸¹⁷ NEW HAVEN, CONN. FLOOD DAMAGE PREVENTION ORD. (2013), available at <http://www.cityofnewhaven.com/CityPlan/pdfs/Flood%20damage%20prevention.pdf> (last visited Aug. 31, 2016) [hereinafter *New Haven FDPO*].

⁸¹⁸ *Id.* § 1.3.

⁸¹⁹ *Id.* §§ 3.1, 3.2.

⁸²⁰ *Id.* § 3.3.

⁸²¹ *Id.* § 4.1.

⁸²² *New Haven FDPO* §§ 5, 7 (variance).

(e.g., seeking federal and state grants), the office is charged with directing local implementation of the state Coastal Management Act.⁸²³

A coastal site plan review and certification by the City Plan Department is required for all buildings, structures, uses, or activities located in the district to determine whether the potential adverse impacts are acceptable under the state Coastal Management Act.⁸²⁴

The zoning ordinance requires compliance with the Soil Erosion and Sediment Control (SESC) Regulations, which were enacted pursuant to the corresponding state statute, for activities in the SESC District.⁸²⁵ Under the regulations, any development activity not exempted requires submission and approval of a SESC plan to, and receipt of a SESC permit from, the City Plan Commission.⁸²⁶ The permit will contain conditions and require the use of minimum acceptable control standards as set by the state.⁸²⁷

2.3.9.1.5 Inland Wetlands and Watercourses

The City Planning Commission is also designated as the city's conservation commission under state law and is therefore empowered to regulate activities affecting wetlands and watercourses within the city's territorial limits.⁸²⁸

The Zoning Ordinance requires compliance with the Inland Wetlands and Watercourses Regulations,⁸²⁹ which were created pursuant to the state Inland Wetlands and Watercourses Act and are implemented by the City Plan Commission.⁸³⁰ The regulations apply to all designated wetlands and watercourses, which are shown on a map.⁸³¹ A permit from the commission is required to undertake any activity or use classified as Permitted or Regulated Activities in or within 50 feet of these areas that involves an alteration or use not specifically authorized by the regulations.⁸³² These activities may fall into a number of different classifications based on their location and impacts, each of which is subject to different restrictions.⁸³³

2.3.9.1.6 Historic Districts

The Historic District Commission was established to regulate buildings and structures in historic districts and was given all the powers identified in state law.⁸³⁴ As provided in the zoning ordinance, no building or structure in a historic district may be, among other things, moved, erected, or

⁸²³ *Id.* tit. III §§ 21-31, 32.

⁸²⁴ *New Haven Zoning Ord.* § 55.

⁸²⁵ *Id.* § 58.

⁸²⁶ NEW HAVEN, CONN. SOIL EROSION & SEDIMENT CONTROL REGS. (2004) § 3.

⁸²⁷ *Id.* §§ 6, 8.

⁸²⁸ *New Haven Code* tit. III §§ 2-641, 2-642, *citing* Conn. Gen. Stat. §§ 22a-36 - 22a-45a.

⁸²⁹ *New Haven Zoning Ord.* § 57.

⁸³⁰ NEW HAVEN, CONN. INLAND WETLANDS & WATERCOURSES REGS. (2008) § 1.3.

⁸³¹ *Id.* § 1.4.

⁸³² *Id.* § 3.1.

⁸³³ *Id.* § 4, 5.

⁸³⁴ *New Haven Code* tit. III § 2-731.

demolished without a certificate of appropriateness from the commission.⁸³⁵ The commission is required to hold a hearing on each application for a certificate of appropriateness, a procedure set out in state law.⁸³⁶ There are three historic districts, at least two of which have coastal exposure.⁸³⁷

In addition, the Municipal Preservation Board was established to prevent the unreasonable destruction of historic structures and landmarks and to recommend properties or districts for nomination to the National Register of Historic Places (after a public hearing).⁸³⁸

2.3.9.1.7 Other Entities

- New Haven has established five special services districts by ordinance. These include Whalley Avenue SSD, Ninth Square SSD, Chapel West SSD, Town Green SSD, and Grand Avenue SSD.⁸³⁹ Certain city services may be provided by each SSD to properties in their districts in accordance with state law.
- The New Haven Redevelopment Agency is created by ordinance, as authorized by chapter 130 of state general statutes. The Agency is authorized to acquire land for redevelopment and to sell or lease such land to a redeveloper or public agency, provided that it be developed and used in accordance with a redevelopment plan approved by the Agency.⁸⁴⁰ To approve a redevelopment plan, the Agency must refer it to the City Plan Commission for review and written approval, hold a public hearing, ensure the plan meets mandatory conditions, and obtain plan approval from the city housing authority and board of Aldermen.⁸⁴¹ There is also a Redevelopment Advisory Board whose function is to advise and assist the Agency in preparation and execution of a redevelopment program for New Haven and assist in coordination of agencies with that program.⁸⁴²

2.3.9.2 Water Quality

Sanitary and industrial sewer systems in New Haven, including municipal systems, are under the control and subject to regulation by the regional Greater New Haven Water Pollution Control Authority,⁸⁴³ which was created in accordance with state law.⁸⁴⁴ New Haven has also established an Advisory Committee, which is composed of a representative from each municipality with a contractual agreement with the WPCA.⁸⁴⁵

However, other agencies are also given responsibilities: Installation of connections requires approval of the City Engineer. In addition, the Director of Public Works is responsible for the care

⁸³⁵ *New Haven Zoning Ord.* § 54.

⁸³⁶ *New Haven Code* tit. III § 2-732.

⁸³⁷ *New Haven Zoning Ord.* § 54.

⁸³⁸ *New Haven Code* tit. III §§ 2-791, 2-792.

⁸³⁹ *Id.* tit. III, ch. 33-37.

⁸⁴⁰ *Id.* tit. III § 21-9.

⁸⁴¹ *Id.* tit. III §§ 21-5, 21-6.

⁸⁴² *Id.* tit. III § 21-13.

⁸⁴³ *Id.* tit. III § 25-1.

⁸⁴⁴ *Id.* tit. III § 25-47.

⁸⁴⁵ *New Haven Code* tit. III § 25-56.

and management “of all sewers, drains, culverts, sluiceways and catch basins, and the collection and disposition of sewage, ashes, garbage and refuse.”⁸⁴⁶

2.3.9.3 Parks, Wildlife, and Open Space

New Haven’s park system is under the oversight and control of the Parks and Recreation Department,⁸⁴⁷ in consultation with and subject to advice from the Board of Park Commissioners, which is responsible for setting park policy and make regulations.⁸⁴⁸ The Department is led by a Director, who is supported by advice from and evaluation by the Board of Park Commissioners.⁸⁴⁹ The city code establishes rules of conduct and prohibited acts in public parks, including digging, construction, and other activities, both in general and for specific types of facilities.⁸⁵⁰ Some public parks, including Lighthouse Point Park and Fort Hale,⁸⁵¹ are located in coastal locations. In addition, special laws provide for easements for electrical transmission easements over park lands on the east side of New Haven harbor.⁸⁵²

2.3.9.4 Transportation Infrastructure

2.3.9.4.1 Navigation

The city has created the New Haven Port Authority, governed by a Board of Commissioners, to develop and promote facilities and freight shipment through New Haven’s port district.⁸⁵³ In carrying out these duties, the Authority has all of the powers allowed under state law and may make and enforce rules and regulations “for the proper development, maintenance and use of the port facilities.”⁸⁵⁴ Port facilities include wharves docks, piers, air and bus terminals, railroads, equipment, and other facilities (e.g. warehouses, residences) within the port district that are necessary for commerce or waterfront development.⁸⁵⁵ The boundaries of the port district are set out in the code.⁸⁵⁶

While the Port Authority has authority over the whole of the port district, the Director of Public Works has “charge and control of the wharf property belonging to the city, including all the wharf piers, bulkheads, and structures thereon, and all the slips, basins, docks, water fronts, land under water, and structures thereon,” as well as other related property rights held by the city.⁸⁵⁷ These duties extend to “all the cleaning, dredging and deepening necessary, in or about the same.” The Director may appoint a Dockmaster to carry out associated responsibilities.⁸⁵⁸

⁸⁴⁶ *Id.* tit. I, art. VI § 8.

⁸⁴⁷ *Id.* tit. I, art. VI § 13.

⁸⁴⁸ *Id.* tit. I, art. VII § 3.

⁸⁴⁹ *New Haven Code* tit. III §§ 19-3, 19-4.

⁸⁵⁰ *Id.* tit. III §§ 19-5 *et seq.* See also *id.* tit. III § 19-13 (special rules for Lighthouse Point Park).

⁸⁵¹ *Id.* tit. II § 100.

⁸⁵² *Id.* tit. II §§ 101-102.

⁸⁵³ *New Haven Code* tit. III §§ 15-31, 15-32.

⁸⁵⁴ *Id.* tit. III §§ 15-35, 15-36.

⁸⁵⁵ *Id.* tit. III § 15-32.

⁸⁵⁶ *Id.* tit. III § 15-32, Sched. A (not available online).

⁸⁵⁷ *Id.* tit. I § 8, tit. III § 15-1.

⁸⁵⁸ *New Haven Code* tit. III § 15-2.

Other authorities related to harbors and ports in New Haven include:

- The New Haven Development Commission was created pursuant to state law (7-136) to promote and develop the economic resources of the city. It is the designated municipal development agency under CGS 8-186 as well as the harbor improvement agency under CGS 13b-56 and -57 and can exercise the powers granted to those entities under state law.⁸⁵⁹ The Commission has a variety of duties, including preparation, review, and approval of any plans required by state law, as well as a wide range of promotional and advisory activities intended to foster economic development.⁸⁶⁰

2.3.9.4.2 Highways

Jurisdiction over streets in New Haven is split among the Department of Public Works, which is responsible for maintenance and use;⁸⁶¹ the City Engineer, who is responsible for infrastructure improvement, the Department of Traffic and Parking, which is responsible for traffic, and the Department of Parks and Recreation, which is responsible for street trees.⁸⁶²

The city code contains permitting and licensing requirements related to excavations and construction in the public ways,⁸⁶³ acceptance of new city streets for perpetual maintenance and issuance of building permits,⁸⁶⁴ and abandonment of streets (which requires a petition to the aldermen from a property owner/developer).⁸⁶⁵ The code does not contain specific provisions for removal of streets or other public ways at the city's own behest.

Districts and authorities related to transportation in New Haven include:

- The Greater New Haven Transit District is established and has all the powers available to such districts as provided in state law.⁸⁶⁶ Membership in the district is open to any municipality in the region upon application.⁸⁶⁷
- The parking authority is empowered to manage parking facilities in the city, subject to specific authorization and approval of the board of alderman following receipt of a report from the city planning commission on the suitability of property for parking use.⁸⁶⁸ These facilities may be subject to bonds or other trust obligations.

⁸⁵⁹ *Id.* tit. III § 21-14.

⁸⁶⁰ *Id.* tit. III § 21-14.

⁸⁶¹ The Director of Public Works is responsible for the care and management, among other things, of "all streets, avenues, highways, alleys, bridges, sidewalks and public grounds of said City." *Id.* tit. I, art. VI § 8.

⁸⁶² *New Haven Code* tit. III § 27-2.

⁸⁶³ *Id.* tit. III §§ 27-101 *et seq.*

⁸⁶⁴ *Id.* tit. III §§ 27-151 *et seq.*

⁸⁶⁵ *Id.* tit. III § 27-181.

⁸⁶⁶ *Id.* tit. III §§ 30½-1 *et seq.*

⁸⁶⁷ *New Haven Code* tit. III § 30½-2.

⁸⁶⁸ *Id.* tit. II § 86.

2.3.9.5 Shellfish

The state Commissioner of Agriculture exercises jurisdiction over shellfish grounds and franchises within the limits of New Haven, once those grounds have been surveyed and mapped.⁸⁶⁹

2.3.9.6 Other

The Environmental Advisory Agency is created to support the city with respect to the environment, including through collecting and disseminating information and interpretations of federal, state and local environmental laws; advising the municipality and the private sector on implementation; collecting information on environmental conditions and natural resources; collaborating with other cities and towns and with nongovernmental entities; and by recommending the establishment of boards and commissions, laws and regulations, and other matters related to the environment.⁸⁷⁰

The EAA has no regulatory authority.

⁸⁶⁹ Conn. Gen. Stat. § 26-257.

⁸⁷⁰ *New Haven Code* tit. III § 2-703.

2.3.10 Stratford

Stratford is a town, instituted by charter, using a Town Council Legislature / Mayoral Executive format.⁸⁷¹ The town transitioned from a town manager to a mayor in 2005.⁸⁷² Legislation passed by the Town Council can be approved or vetoed by the Mayor⁸⁷³ and can be challenged by referendum.⁸⁷⁴

2.3.10.1 Planning and Zoning

Stratford has a separate Planning Commission,⁸⁷⁵ Zoning Commission,⁸⁷⁶ and ZBA.⁸⁷⁷ The work of these commissions is supported by a staff in the Planning and Zoning Department. The five-member, elected Planning Commission promulgates the POCD pursuant to state law.⁸⁷⁸ The nine-member, appointed Conservation Commission provides advisory support to this mission.⁸⁷⁹ The five-member, elected Zoning Commission promulgates zoning regulations in conformance with the POCD.⁸⁸⁰ Stratford also participates in regional planning through MetroCOG and the Greater Bridgeport Regional Council of Elected Officials.⁸⁸¹

2.3.10.1.1 Zoning Approvals

Building applications are submitted through the Planning and Zoning Department to all three governing bodies, concurrently with application for a building permit.⁸⁸² Plans for subdivisions must be approved by the Planning Commission for consistency with the POCD.⁸⁸³ Improvements to public property which is discussed or proposed in the POCD must be approved as conforming to the plan.⁸⁸⁴ All development plans must conform to the zoning regulations.⁸⁸⁵ Application for special use permits, called “special cases,” are reviewed by the Zoning Commission and must conform to use requirements.⁸⁸⁶ The five-member, elected ZBA has authority to issue variances “in the manner provided by state statute” if the applicant demonstrates unusual hardship.⁸⁸⁷ The ZBA also processes appeals to flood damage prevention ordinance requirements through the same

⁸⁷¹ STRATFORD, CONN. CHARTER §§ 1.2 (duties of the mayor), 2.2.1-6 (powers of the council) [hereinafter *Stratford Charter*].

⁸⁷² *Id.* at preface, ed. note.

⁸⁷³ *Id.* § 1.2(6)(a).

⁸⁷⁴ *Id.* § 8.3.1.

⁸⁷⁵ *Id.* §§ 4.2.5-8.

⁸⁷⁶ *Stratford Charter* §§ 4.2.1-4.

⁸⁷⁷ *Id.* § 4.3.

⁸⁷⁸ *Id.* § 4.2.6; Conn. Gen. Stat. § 8-18 *et seq.* See Town of Stratford, *Plan of Conservation and Development* (2014).

⁸⁷⁹ STRATFORD, CONN. CODE § 5-7 [hereinafter *Stratford Code*].

⁸⁸⁰ *Stratford Charter* § 4.2.2; see STRATFORD, CONN. ZONING REGS. (2015) [hereinafter *Stratford Zoning Regs.*].

⁸⁸¹ *Stratford Code* § 29.

⁸⁸² *Stratford Zoning Regs.* § 22.2 *et seq.*

⁸⁸³ *Stratford Charter* § 4.2.6; *Stratford Zoning Regs.* § 4.

⁸⁸⁴ *Stratford Code* § A221-26.

⁸⁸⁵ *Stratford Zoning Regs.* § 3.1.

⁸⁸⁶ *Id.* § 20.1.

⁸⁸⁷ *Id.* § 21.1.

process.⁸⁸⁸ The Zoning Commission has the authority to amend zoning regulations on petition through a notice and hearing process.⁸⁸⁹

2.3.10.1.2 Building Code

Stratford has adopted the state building code. Code requirements are enforced by the Office of the Building Official within the Department of Public Works.⁸⁹⁰

2.3.10.1.3 Flood Prevention and Management

The flood damage prevention ordinance, which requires a development permit for construction or significant modification within a SFHA, is enforced by the Building Official during the permitting process rather than by a separate Flood Control Board.⁸⁹¹

2.3.10.1.4 Coastal Management

Coastal management and erosion control regulations are incorporated into the zoning ordinance and their requirements are folded into the zoning application process.⁸⁹² Applicants must submit a coastal site plan and/or soil erosion and sediment control plan if the properties meet jurisdictional requirements.⁸⁹³ The Zoning Commission conducts the site plan review process for building proposals alongside the zoning review for consistency with municipal regulations and state policies.⁸⁹⁴

2.3.10.1.5 Inland Wetlands and Watercourses

For activities on properties that include wetlands, a concurrent permit application, including a site development plan, must be submitted to an Inland Waters Commission.⁸⁹⁵ The seven-member, appointed Inland Waters Commission, with one member from the Waterfront Authority and two from the Conservation Commission, promulgates and implements the regulations pursuant to state law.⁸⁹⁶

2.3.10.1.6 Historic Districts

The five-member, appointed Historic District Commission was established pursuant to state law with the authority of a municipal historic district commission and a historic properties commission.⁸⁹⁷ Applicants must obtain a certificate of appropriateness to any modification to the exterior of a structure within a historic district or identified as historic.⁸⁹⁸ An Architectural Review

⁸⁸⁸ *Stratford Code* § 102-15.

⁸⁸⁹ *Stratford Zoning Regs.* § 19.

⁸⁹⁰ *Id.* § 62; *Stratford Charter* § 5.3.1.

⁸⁹¹ *Stratford Code* § 102-12.

⁸⁹² *Stratford Zoning Regs.* § 3.1.

⁸⁹³ *Id.* §§ 3.1.1.2; 3.1.2.2.

⁸⁹⁴ *Id.* § 3.1.1.5.

⁸⁹⁵ STRATFORD, CONN. INLAND WETLANDS & WATERCOURSES REGS. (2012).

⁸⁹⁶ *Stratford Code* § 217-4.

⁸⁹⁷ *Id.* § 121-3.

⁸⁹⁸ *Id.* § 121-6.

Board is also designated to give guidance during the permitting process,⁸⁹⁹ but the commission is vacant.⁹⁰⁰

2.3.10.2 Water Quality

The Water Pollution Control Authority is designated under NPDES implementing regulations as the body to issue permits for industrial waste discharge into the sewer,⁹⁰¹ meter and charge for flow into the sewer,⁹⁰² and enforce pollution regulations.⁹⁰³ Other sewerage construction, maintenance, and access permitting is done by the Department of Public Works.⁹⁰⁴ Construction requirements for both storm drains and sanitary sewers are included into zoning regulations, subdivision regulations, and ordinances, pursuant to Clean Water Act requirements.⁹⁰⁵ The ordinance establishing the Water Pollution Control Authority as an elected body was repealed by referendum in November 2015.⁹⁰⁶

2.3.10.3 Parks, Wildlife, and Open Space

Parks in Stratford are under the management of the Department of Public Works, which is responsible for their maintenance.⁹⁰⁷ Activities in town recreational areas, including beaches, ponds, forests, and parks, are subject to ordinances governing allowable activities.⁹⁰⁸ Certain town areas are governed through additional entities, including the Roosevelt Forest and Great Meadows Park,⁹⁰⁹ as well as Short Beach. Short Beach is administered by the seven-member, appointed Short Beach Park Commission, which promulgates rules for use of the beach.⁹¹⁰ Improvements to land or public structures within the park requires a recommendation from the Commission.⁹¹¹ Long Beach is privately owned.

2.3.10.4 Transportation Infrastructure

2.3.10.4.1 Navigation

The eleven-member, appointed Stratford Waterfront and Harbor Management Commission maintains a Harbor Management Plan to protect water resources and balance coastal land uses, giving priority to water-dependent uses.⁹¹² The Commission may make recommendations regarding any permit for proposal on, in, or contiguous to the harbor.⁹¹³ The Commission also has authority to designate control buffers around any waterway and to require permits for construction

⁸⁹⁹ *Id.* § 5-94.

⁹⁰⁰ See Town of Stratford, *Architectural Review Board*, at <http://www.townofstratford.com/content/39832/40029/42537.aspx> (last visited Aug. 31, 2016)

⁹⁰¹ *Id.* § 172-9.

⁹⁰² *Stratford Code* §§ 172-31, 172-86 *et seq.*

⁹⁰³ *Id.* § 172-42.

⁹⁰⁴ *Id.* § 172-45 *et seq.*

⁹⁰⁵ *Id.* § 172.

⁹⁰⁶ See *id.* § 39.

⁹⁰⁷ *Stratford Charter* § 5.3.

⁹⁰⁸ *Stratford Code* § 152.

⁹⁰⁹ *Id.*

⁹¹⁰ *Id.* § 5-70.

⁹¹¹ *Id.* § 5-71.

⁹¹² *Stratford Code* § 210-3(a)(1).

⁹¹³ *Id.* § 210-7.

within the buffer that may affect flooding.⁹¹⁴ The Harbor Master enforces Commission regulations and manages mooring grounds and anchorages.⁹¹⁵

2.3.10.4.2 Highways

Streets and roadways in Stratford are managed by the Department of Public Works. City ordinances govern street construction, acceptance of new streets, and work within public rights-of-way, which require compliance with DPW direction and a license from DPW.⁹¹⁶ Other provisions potentially applicable to street elevation include sanitary sewer connections, stormwater connections, and public utility emergency work authorization.⁹¹⁷

2.3.10.5 Shellfish

A license from the five-member, appointed Shellfish Commission is required to take oysters from areas under its jurisdiction.⁹¹⁸ The ordinances provide no authority related to leasing of areas or other provisions but may recommend regulations to the Mayor and Town Council.⁹¹⁹ The Shellfish Commission may advise on Planning Commission and Waterfront and Harbor Management Commission actions.⁹²⁰

⁹¹⁴ *Id.* § 210-11.

⁹¹⁵ *Id.* §§ 114-1 *et seq.*, 210-9.

⁹¹⁶ *Id.* at ch. 186.

⁹¹⁷ *Stratford Code* §§ 186-30 - 186-33.

⁹¹⁸ *Id.* § 175-3.

⁹¹⁹ *Id.* § 5-16.

⁹²⁰ *Id.* § 5-16.

2.3.11 West Haven

West Haven is a consolidated town and city⁹²¹ with a mayor and city council, operating under a charter and code of ordinances. The charter establishes the city government, including certain departments, while additional authorities are established by ordinance.

2.3.11.1 Planning and Zoning

Municipal planning and zoning responsibilities are shared across multiple city authorities and are chiefly governed by town zoning regulations. The Commissioner of Planning and Development (or a Director), who is also the ZEO, oversees the Departments of Planning and Zoning, Building, Grants and Community Development Administration, and the Inland Wetlands Agency and is charged with enforcing the zoning regulations and supporting implementation of the zoning regulations.⁹²² The PZC and ZBA have all powers established by state law regarding planning and zoning in West Haven and operates pursuant to details set out in the town zoning regulations.⁹²³

West Haven is a member of the SCRCOG, has adopted the relevant state statutes, and has authorized SCRCOG to exercise all rights and authority and responsibilities and duties provided therein.⁹²⁴ In addition, the city specifically agrees to participate in the regional planning commission of SCRCOG.⁹²⁵

2.3.11.1.1 Zoning Approvals

The zoning regulations establish districts with their associated land use controls. These districts include FEMA flood prevention and coastal area management districts, among others, each of which has specific regulations on allowable uses.⁹²⁶ The regulations also establish citywide use controls and standards as well as regulation of particular activities before turning to resource regulations.⁹²⁷ These include regulations for flood plain management, coastal area management, inland wetlands and watercourses, resource removal, filling and grading, and soil erosion and sediment control.⁹²⁸ The regulations also include requirements for site plans.⁹²⁹

The PZC has exclusive charge of hearing and deciding on site plans, the regulations, special permits, and amendments of the zoning map or text upon application.⁹³⁰ The ZBA reviews variances and special use exceptions and reviews administrative decisions and orders on appeal.⁹³¹

⁹²¹ WEST HAVEN, CONN CHARTER ch. I § 6 [hereinafter *West Haven Charter*].

⁹²² *Id.* ch. XIV(A) § 1-3; WEST HAVEN, CONN. ZONING REGS. art. 9 [hereinafter *West Haven Zoning Regs.*]

⁹²³ WEST HAVEN, CONN. CODE § 32-1 [hereinafter *West Haven Code*]; *West Haven Charter* ch. XIV(B) § 1; *West Haven Zoning Regs.* art. 10, 11; *West Haven Charter* ch. XIV(B) § 2; *see also* Conn. Gen. Stat. § 8-6.

⁹²⁴ *West Haven Code* §§ 15-7 - 15-9, *citing* Conn. Gen. Stat. §§ 4-124c - 4-124q.

⁹²⁵ *West Haven Code* § 15-12.

⁹²⁶ *West Haven Zoning Regs.* art. 1, 2.

⁹²⁷ *Id.* art. 3-6.

⁹²⁸ *Id.* art. 7.

⁹²⁹ *Id.* art. 8.

⁹³⁰ *Id.* §§ 85, 86.

⁹³¹ *West Haven Zoning Regs.* art. 11.

2.3.11.1.2 Building Code

West Haven has adopted the state building code through a mayorally-appointed Building Official, who has the powers and duties established under state law.⁹³²

2.3.11.1.3 Flood Prevention and Management

West Haven has created a flood management program whose purposes specifically include, among others, “control [of] the alteration of natural floodplains, stream channels and natural protective barriers, which are involved in the accommodation of floodwaters.”⁹³³ The PZC is the designated the administering agency for the flood management program and is responsible for adopting and administering flood hazard area regulations and creating a permitting procedure for regulated activities in the flood area, which are included in the zoning regulations.⁹³⁴ The Director of Planning is responsible for implementation of the program in practice through activities including, but not limited to, review of proposed development permits; notification of adjacent communities and state agencies prior to alteration or relocation of a watercourse; and verifying compliance with flood zone building requirements.⁹³⁵ Applicants in flood districts must meet the zoning regulation requirements or obtain a variance as provided by regulation.

West Haven has further established a FECB, which is endowed with all the powers available under state law.⁹³⁶ The Board is the designated Flood Hazard Appeal Board and in this capacity is charged with hearing appeals from applicants and property owners related to the city flood management program.⁹³⁷

2.3.11.1.4 Coastal Management

The zoning regulations require a coastal site plan review, as required by state law, for certification, permits, exceptions, variances, or other zoning activities; the regulations set out the exceptions, process, review criteria by which the PZC or ZBA, as relevant, reviews the site plan.⁹³⁸

Under the zoning regulations governing soil erosion and sediment control, applicants for development are be required to complete a SESC plan unless exempted, which will result in classification based on impact and imposition of state-identified minimum acceptable control standards or other conditions. The PZC may refer the plan for review by the New Haven County Soil and Water Conservation District, City Engineer, or others.⁹³⁹

2.3.11.1.5 Inland Wetlands and Watercourses

West Haven has created the Inland-Wetland Agency pursuant to the state Inland Wetlands and Watercourses Act and has endowed the agency with all the powers, duties, and responsibilities

⁹³² *West Haven Charter* ch. XIV(D).

⁹³³ *West Haven Code* § 111-2.

⁹³⁴ *Id.* § 111-5, WHZR § 70.

⁹³⁵ *Id.* § 111-6.

⁹³⁶ *Id.* § 19-1, citing Conn. Gen. Stat. § 25-84; *West Haven Charter* ch. XIV(B) § 5.

⁹³⁷ *West Haven Code* § 111-8.

⁹³⁸ *West Haven Zoning Regs.* § 71.

⁹³⁹ *Id.* § 74.

provided under state law, including rulemaking authority.⁹⁴⁰ The city also has given the agency the additional duties, among others, to:

- compile an index of public and private “open lands” to obtain information on their proper use;
- adopt regulations and boundaries of wetland and watercourse areas; and
- recommend to the PZC, mayor, or city council plans and programs for the development and use of regulated land areas, including through the acquisition of conservation easements.⁹⁴¹

The Agency has issued Inland Wetland and Watercourse Regulations, which establish a permitting system for uses and activities regulated by the agency and provisions for implementation of the agency’s other duties.⁹⁴² Jurisdiction over tidal wetlands, dams, dredge and fill of wetlands, and activities in or affecting wetlands by a state entity is reserved exclusively to DEEP.⁹⁴³ Inland wetland permitting occurs simultaneously with required zoning approvals.⁹⁴⁴

2.3.11.1.6 Historic Districts

West Haven has not established historic districts or commissions.

2.3.11.1.7 Other Entities

- The charter establishes a Redevelopment Agency with powers allowed by state law.⁹⁴⁵
- The city Economic Development Commission is created to promote and develop business and industry in West Haven, and is empowered to recommend amendments to the city comprehensive plan to the PZC,⁹⁴⁶ as well as to confer with similar commissions in abutting municipalities to make recommendations with respect to development of roads, utility services, and industrial sewage disposal.⁹⁴⁷

2.3.11.2 Water Quality

The city charter provides for a Water Pollution Control Commission (WPCC) responsible for management of the city wastewater treatment works, notably including budgeting and fiscal management of the works through user charges.⁹⁴⁸ The Water Pollution Control Administrator (which may be an entity or person) acts as a liaison among the WPCC and related departments (e.g., the Department of Public Works), ensures compliance with federal and state law, and assists the Director of DPW in formulating the WPCC annual budget and strategic plan.⁹⁴⁹ The WPCC has charge of a user charge operating fund, for account for operation, maintenance, administration, and

⁹⁴⁰ *West Haven Code* § 22-1, citing Conn Gen. Stat. §§ 22a-45; 22-2. The Agency is established by the charter as the Inland Wetlands and Watercourses Agency. *West Haven Charter* ch. XIV(B) § 3.

⁹⁴¹ *West Haven Code* § 22-4.

⁹⁴² WEST HAVEN, CONN. INLAND WETLANDS & WATERCOURSES REGS. (2015).

⁹⁴³ *Id.* § 5.

⁹⁴⁴ *West Haven Zoning Regs.* § 72.

⁹⁴⁵ *West Haven Charter* ch. XIV(B) § 4.

⁹⁴⁶ *West Haven Code* 18-1, 18-5; *West Haven Charter* ch. XIV(C) § 1.

⁹⁴⁷ *West Haven Charter* ch. XIV(C) § 3.

⁹⁴⁸ *West Haven Charter* ch. XIX(C); *West Haven Code* § 222-4.

⁹⁴⁹ *West Haven Code* § 222-12.

repair and replacement costs; and a user charge capital fund, used to pay principal and interest on bonds used to pay for the treatment works.⁹⁵⁰ These funds can only be used for specific allowable uses, which are prioritized.⁹⁵¹ The treatment facility is operated by the Department of Public Works, which must prepare an annual strategic plan and annual budget and present them to the WPCC.⁹⁵²

The specific sewer connection and operation requirements are contained within a separate sewer ordinance governing the permitting and operation of sewers in the town.⁹⁵³ These provisions govern connections to the public sewers, restrictions on sewer discharges to water pollution control facilities, permitting, and other requirements related to the management and operation of the city sewer systems and independent sewage systems.⁹⁵⁴

West Haven has enacted two separate pollution control ordinances for air and water pollution, respectively.⁹⁵⁵ It has also provided for a Director of Pollution Control responsible for administering and enforcing the ordinances, as well as subsidiary rules and regulations,⁹⁵⁶ and a Pollution Control Commission to advise and assist the Director.⁹⁵⁷ This Commission is empowered, upon recommendation from the Director and after public hearing, to create rules and regulations necessary to carry out the pollution control ordinances.⁹⁵⁸ The Pollution Control Commission also acts as an appeal board for review of decisions of the Director under the air pollution ordinance.⁹⁵⁹ The city water pollution ordinance includes articles focused on water and beach areas and on discharge of fats, oil, and grease. The former prohibit independent wastewater systems from discharging into Long Island Sound, and prohibit dumping and littering on the shore or beaches.⁹⁶⁰

2.3.11.3 Parks, Wildlife, and Open Space

Parks, beaches, nature centers and shoreline walkways, and other park and recreational facilities are subject to the supervision and management of the Director of Parks and Recreation.⁹⁶¹ The charter also establishes a Board of Parks and Recreation charged with recommending to the Council the adoption of ordinances for these areas and promulgating rules and regulations for their use.⁹⁶² The Board is also empowered to accept and procure property in the name of the city.⁹⁶³

The city has enacted ordinances for Parks and Recreation Areas. Under these ordinances, no property under Board jurisdiction, including beaches and contiguous waters, can be leased or used

⁹⁵⁰ *Id.* § 222-16.

⁹⁵¹ *Id.* § 222-18.

⁹⁵² *Id.* § 222-119, 222-20.

⁹⁵³ *Id.* ch. 191.

⁹⁵⁴ *Id.*

⁹⁵⁵ *West Haven Code* ch. 67 (Air pollution); *Id.* ch. 224 (Water pollution).

⁹⁵⁶ *Id.* § 39-3.

⁹⁵⁷ *Id.* § 39-1.

⁹⁵⁸ *Id.* § 39-2.

⁹⁵⁹ *Id.* § 39-2.

⁹⁶⁰ *West Haven Code* § 224-1.

⁹⁶¹ *West Haven Charter* ch. XII § 3 (excluding facilities controlled by the Department of Education).

⁹⁶² *Id.* ch. XII §§ 1-2.

⁹⁶³ *West Haven Code* § 170-1.

for commercial purposes.⁹⁶⁴ Other ordinances address specific activities within the parking areas, beaches, and parks (e.g., dumping, fires, disorderly conduct, use of vehicles).⁹⁶⁵ Board regulations are also incorporated into the ordinances by reference.⁹⁶⁶

The city has also enacted a trees ordinance intended, in part, to prevent “damage from erosion and destruction of the natural habitat.”⁹⁶⁷ It establishes a Tree Commission, which advises and consults with the Tree Warden on matters related to the ordinance and its enforcement, establishes tree policies, and prepares a forestry management plan in collaboration with the Warden.⁹⁶⁸ The commission is also directed to advise and cooperate with the PZC and other boards and commissions, and the PZC must notify the commission before approving or initiating development plans that could adversely affect the general health or preservation of city-owned trees.⁹⁶⁹

The Warden has powers and duties as set out in state law, including managing city trees and selection of landmark trees, and preventing damage to city trees.⁹⁷⁰ A permit from the Warden is required to disturb or injure any tree on city property (required for all except the Department of Parks and Recreation in parks, public utility companies for rights of way, and the department of education on school grounds).⁹⁷¹

2.3.11.4 Transportation Infrastructure

2.3.11.4.1 Navigation

The Harbor Management Commission is established by the West Haven Code in order to prepare a Harbor Management Plan (HMP).⁹⁷² In developing the HMP, the Commission must conform to the requirements for such plans as set out in state law and consider any HMPs or policies in force in other subdivisions of West Haven and adjacent municipalities.⁹⁷³ The jurisdiction of the Commission extends to all waters within the territorial boundaries of the City and below the mean high water line.⁹⁷⁴

The Commission also has powers related to HMP implementation and harbor management, including but not limited to:

- recommending ordinances to implement the HMP;
- reviewing and making recommendations regarding proposed water and land use activities contiguous to the waterfront and in harbor waters;

⁹⁶⁴ *Id.* § 170-2 (excepting food vendors).

⁹⁶⁵ *Id.* §§ 170-3 - 170-30.

⁹⁶⁶ *Id.* § 170-31.

⁹⁶⁷ *Id.* § 213-1.

⁹⁶⁸ *West Haven Code* § 213-3.

⁹⁶⁹ *Id.* § 213-3

⁹⁷⁰ *Id.* § 213-3, citing Conn. Gen. Stat. §§ 23-58 *et seq.*

⁹⁷¹ *Id.* § 213-4.

⁹⁷² *West Haven Code* § 20-4.

⁹⁷³ *Id.* § 20-3; Conn. Gen. Stat. §§ 22a-113m - 22a-113o.

⁹⁷⁴ *West Haven Code* § 20-3.

- reviewing public notices and applications for federal, state, and local permits for consistency with the HMP; and
- seeking general permits from the Army Corps of Engineers and/or delegation of state enforcement authority.⁹⁷⁵

In addition, the Commission must be notified of, and review and make recommendations consistent with the HMP on, any proposal affecting real property on or contiguous to the harbor that are submitted to city agencies, including:

- Planning [and Zoning] Commission;
- ZBA;
- Water Pollution Control Authority [presumably, Pollution Control Commission];
- Inland Wetlands Commission [presumably, Inland-Wetlands Agency];
- Conservation Commission; or
- Parks and Recreation Commission [presumably, the Parks and Recreation Board].⁹⁷⁶

These agencies must consider recommendations, and a two-thirds vote is needed to approve proposals that do not receive a favorable recommendation from the Commission.

2.3.11.4.2 Highways

The charter establishes a Department of Public Works, which is responsible for care and management of city property, highways and street trees, sewers and drains, other public improvements, and refuse collection.⁹⁷⁷ The Commissioner of Public Works leads the Department, and the City Engineer leads the Bureau of Engineering within the Department.⁹⁷⁸

The city has established ordinances for streets and highways⁹⁷⁹ and, separately, for vehicles and traffic.⁹⁸⁰ The former regulations include articles governing, among other things, construction and excavation of sidewalks and streets, and municipal liability.⁹⁸¹ It also contains specific provisions for discontinuance of highways by request to the Director of Planning containing required information.⁹⁸² The Director must circulate copies to the WPCC, Director of Public Works, and other relevant municipal authorities, which must provide written advice of reasons why discontinuance would not be in the best interests of the city; following receipt, the Director must bring the request to the PZC with his own written recommendation, and the PZC must consider the request and

⁹⁷⁵ *Id.* § 20-4.

⁹⁷⁶ *Id.* § 20-5.

⁹⁷⁷ *West Haven Charter* ch. XI § 1.

⁹⁷⁸ *Id.* ch. XI §§ 2-3.

⁹⁷⁹ *West Haven Code* ch. 206.

⁹⁸⁰ *Id.* ch. 219.

⁹⁸¹ *Id.* ch. 206.

⁹⁸² *Id.* §§ 206-15 - 206-16.

forward it to the Council with its recommendation.⁹⁸³ The Council must hold a public meeting, after which it can abandon the street at the petitioner's expense.⁹⁸⁴

West Haven is a member of the Greater New Haven Transit District.⁹⁸⁵

2.3.11.5 Shellfish

The Commissioner of Agriculture exercises jurisdiction over shellfish grounds and franchises within the limits of West Haven once surveyed and mapped.⁹⁸⁶

Selectmen of West Haven may prohibit taking of long [razor?] or soft-shell [steamer?] clams from portions of their natural clam grounds for periods not exceeding one year at a time.⁹⁸⁷

⁹⁸³ *Id.* § 206-17

⁹⁸⁴ *West Haven Code* §§ 206-18, 206-20.

⁹⁸⁵ *Id.* §§ 15-1 *et seq.*

⁹⁸⁶ Conn. Gen. Stat. § 26-257.

⁹⁸⁷ Conn. Gen. Stat. § 26-260.

3 Legal, Policy, and Regulatory Resilience Audit

This chapter provides an audit of federal, state, and local legal authorities related to coastal land use and green infrastructure affecting ten municipalities in southern Connecticut. This audit reviews local ordinances, zoning conditions, land use policy, variances, and incentives, as affected by state and federal regulatory and permitting requirements influencing and dictating these authorities and related local practice. This audit identifies opportunities and constraints at the municipal scale within the study area that can or will affect the development of a regional framework for coastal resiliency.

This chapter is organized around the following regional resiliency strategies:

- Regulating uses of coastal lands;
- Retaining coastal land as open space;
- Mitigating flood hazards in the built environment; and
- Building resilient transportation infrastructure.

The chapter addresses each of these topics in detail by considering a variety of more specific legal tools that can enable and support activities that improve coastal resiliency within each municipality and across the region as a whole.

3.1 Coastal Land Use

Coastal areas are subject to coastal flooding and erosion. In these areas, enhanced building requirements (in addition to those related to freeboard) may be needed to reduce vulnerability and to enable coastal natural or green infrastructure. These protections may be offered either through floodplain management provisions—under which CHHAs (FEMA “V” zones) are subject to enhanced building standards—or zoning regulations restricting the type of development in a coastal district or overlay zone. This section reviews several aspects of coastal building regulation, including coastal zoning districts, coastal site plan reviews, setbacks, and vegetated buffers.

3.1.1 Coastal Zoning Districts

Coastal resiliency may require different patterns of land use in coastal areas than inland. Municipalities can ensure that development and land use are consistent with resilience needs by using their planning and zoning authorities to create coastal zoning districts or overlay districts specific to coastal locations. This section reviews whether and how each municipality in the study area has used planning and zoning tools to manage its coastal areas. Not included in this section are provisions related to implementation of state-mandated coastal site plan review or specific provisions regarding setbacks and buffers, all of which are discussed in more detail below.

3.1.1.1 Branford

Branford has created a Coastal Management District as an overlay district to implement the state Coastal Management Act. It does not limit uses but does include provisions on vegetated buffers in addition to coastal site plan review requirements (see below).⁹⁸⁸

3.1.1.2 Bridgeport

Bridgeport has created a Mixed Use Waterfront Zone (MU-W) encourage dense development of large tracts of “undeveloped or underdeveloped” property bordering Long Island Sound or Bridgeport Harbor.⁹⁸⁹ This zone primarily encourages the mix of residential and commercial uses on one tract in order to enable increased residential density in high-rise buildings.⁹⁹⁰

Eligible properties must be re-zoned to take advantage of MU-W incentives.⁹⁹¹ To be eligible for MU-W zoning, a property or contiguous properties:

- must cover at least ten acres of land;
- cannot be zoned for single-family residential;
- must abut a principal street; and
- must border a main coastal waterbody for at least 500 feet.⁹⁹²

Re-zone proposals must include a water-dependent use component.⁹⁹³ All other applicable permits must be obtained in addition to having the property rezoned as a MU-W.⁹⁹⁴

3.1.1.3 East Haven

East Haven has not created a specific zoning district in the coastal area other than to implement the coastal site plan review requirements of the state Coastal Management Act.

3.1.1.4 Fairfield

Fairfield has established a Beach District “to provide zoning guidelines that promote a shorefront residential land use that does not adversely impact the coastal resources and preserves and protects the quality of life that has developed.”⁹⁹⁵ Only certain uses are authorized in the Beach District, including:

- single-family homes;
- customary home occupations;
- Town buildings, uses, and facilities under a Special Exception; and

⁹⁸⁸ *Branford Zoning Regs.* § 5.1.

⁹⁸⁹ *Bridgeport Zoning Regs.* § 9-3-1.

⁹⁹⁰ *Id.*

⁹⁹¹ *Id.* § 9-3-2.

⁹⁹² *Id.* § 9-3-2.

⁹⁹³ *Id.*

⁹⁹⁴ *Bridgeport Zoning Regs.* § 9-3-5.

⁹⁹⁵ *Fairfield Zoning Regs.* § 11.0.

- accessory uses incidental to other allowed uses, subject to additional criteria.⁹⁹⁶

No variances are available for establishing or permitting a non-allowed use in the Beach District.⁹⁹⁷

Buildings in the Beach District must adhere to specific coastal and road setbacks (see below) and other regulations, including for frontage, height, minimum floor area, rooftop deck, and lot coverage.⁹⁹⁸

3.1.1.5 Guilford

Guilford has created a “Coastal Area Overlay District” which is coterminous with the coastal boundary as defined under the state Coastal Management Act. Most non-residential uses and residential uses consisting of greater than two-family dwellings require a special permit, if permitted in the underlying district.⁹⁹⁹ Conversely, certain water-dependent uses are eligible for a special permit in the coastal area overlay district even if not allowed in the underlying zone.¹⁰⁰⁰

Certain uses are not permitted within the Coastal Area Overlay District because they have been found to “pose an unacceptable risk of negative impacts on coastal resources,” including many industrial uses such as foundries, filling stations, and waste transfer facilities.¹⁰⁰¹

Uses in the coastal area overlay district are subject to additional restrictions, including coastal setbacks; vegetated buffers (see below); view protection; low-impact development, and public access to the shoreline.¹⁰⁰²

3.1.1.6 Madison

Madison has not created a zoning district governing uses of the coastal zone other than for implementation of the state Coastal Management Act.

3.1.1.7 Milford

Milford has defined a Beach Erosion Zone that includes all land created by fill or engineering works after 1955 located to the water side of the mean high water mark (as determined by the Department of Public Works).¹⁰⁰³ Only certain uses are permitted in the beach erosion zone, including public parks, certain private beaches or recreational facilities, and parking areas.¹⁰⁰⁴ Other uses are authorized by special permit, including:

- “structures, piers, seawalls, bulkheads, docks or fences constructed as part of a public program for beach maintenance or protection;”

⁹⁹⁶ *Id.* § 11.1.

⁹⁹⁷ *Id.* § 11.2.

⁹⁹⁸ *Id.* §§ 11.6-11.16.

⁹⁹⁹ *Fairfield Zoning Regs.* § 273-91(f).

¹⁰⁰⁰ *Id.*

¹⁰⁰¹ *Id.* § 273-91(g).

¹⁰⁰² *Id.* §§ 273-91(h) - (m).

¹⁰⁰³ *Milford Zoning Regs.* § 3.15.

¹⁰⁰⁴ *Id.* § 3.15.1.

- groins and jetties not more than 2 feet above mean high water; and
- other structures intended to prevent erosion after special exception and consent of the Planning and Zoning Board.”¹⁰⁰⁵

Structures other than FECS must meet all other lot and building requirements set by the board, including flood hazard regulations.¹⁰⁰⁶

Milford has also defined a Boating Business District in which all uses are special uses. The only allowed uses in this district are boat clubs, marinas, yards, dwelling units for caretakers of marinas or yards, and other non-prohibited principal uses that may be permitted by special exception. Certain listed accessory uses are also allowed.¹⁰⁰⁷ Residential uses are prohibited, as are certain storage uses, particularly in the winter or in a parking area.¹⁰⁰⁸ Building dimensional requirements apply in this district to ensure that the buildings are of reasonable size, under two stories tall, and look similar to the area around the building.¹⁰⁰⁹ Lots must be at least two acres and have at least 150 feet of water frontage.¹⁰¹⁰

Milford has also created a Waterfront Design District in which all uses within are deemed Special Uses. Only certain listed uses may be authorized in this District, including: single- and multi-family residential, marinas, private beaches, public utility buildings, and other uses all subject to lot and building requirements of the District.¹⁰¹¹ Each use must have a site plan submitted with its application, exterior lighting approved by the Planning and Zoning Board, street access, utilities, and other principal and/or accessory uses deemed appropriate by the Board.¹⁰¹² Each lot must be at least 2 acres, have 1/5 of the perimeter fronting the water.¹⁰¹³ Each building must be in accordance with the character of the neighborhood, be reasonable in size, adhere to the height requirement of multiple dwelling lots, and have a maximum building coverage of thirty percent.¹⁰¹⁴ No special coastal resiliency or green infrastructure requirements apply in this district.

3.1.1.8 New Haven

New Haven has not created two marine districts for business and light industrial uses, respectively. The “Business C – Marine” district “separate[s] out certain waterfront areas which have—and are encouraged to be—a mix of water-dependent public access, recreational boating, public and private marinas, commercial and recreational fishing, community based, water related activities and waterfront residential environments.”¹⁰¹⁵ The “Industry M District” is located “in areas of the city with both waterfront and industrial characteristics with limited freight transportation connections

¹⁰⁰⁵ *Id.* § 3.15.2.

¹⁰⁰⁶ *Id.* §§ 3.15.4 -3.15.5.

¹⁰⁰⁷ *Milford Zoning Regs.* § 3.7.2.

¹⁰⁰⁸ *Id.* § 3.7.5.

¹⁰⁰⁹ *Id.* § 3.7.4.3.

¹⁰¹⁰ *Id.* § 3.7.4.2.

¹⁰¹¹ *Id.* § 3.13.2 *et seq.*

¹⁰¹² *Milford Zoning Regs.* § 3.13.2.11.

¹⁰¹³ *Id.* § 3.13.4.1.

¹⁰¹⁴ *Id.* § 3.13.4.3.

¹⁰¹⁵ *New Haven Zoning Ord.* § 41.

and/or located in close proximity to a residential neighborhood. Uses allowed within the district are both marine and light industrial in nature.”¹⁰¹⁶ The specific permitted, prohibited, and special permit/exception uses in each of these zones are defined as for other business and industrial zoning districts.¹⁰¹⁷

In addition to these two zoning districts, New Haven has established an overlay Coastal Management District implementing the state Coastal Management Act.¹⁰¹⁸ This overlay district requires coastal site plan review but does not include other standards or restrictions on uses beyond those present in the underlying zoning district.¹⁰¹⁹

3.1.1.9 Stratford

Stratford has created Coastal Area Management regulations for implementation of the state Coastal Management Act. In addition to site plan review, the regulations provide that water-dependent uses are preferred in the CAM area, and uses bordering water must meet minimum standards unless exempted by the Zoning Commission (which are to be granted for non-subdivision single-family residential). Minimum standards pertain to view lanes and pedestrian and vehicular access easements. Uses that are water-dependent by virtue of providing general public access must provide two or more categories of public amenities, including conservation easements protecting sensitive coastal resources; open space easements; boat ramps, fishing piers and walkways, public docking facilities, boat rentals, and upland winter boat storage.¹⁰²⁰

Stratford has also created a Coastal Industrial District that includes “areas . . . which border on existing industrial areas yet are areas subject to frequent, occasional, periodic or potential flooding or contain or border on sensitive coastal resources or open water, estuarine embayments or coastal flood hazard areas.”¹⁰²¹ The CI district is a “transitional” district intended to allow less intensive development than other industrial districts while recognizing the environmental sensitivity of the area.¹⁰²²

Various commercial and industrial uses listed in the regulations are allowed by right, and others in special cases, including planned economic developments on tracts greater than 30 acres.¹⁰²³ Other heavy industrial uses are prohibited in the district.¹⁰²⁴ Coastal Industrial uses must comply with specific requirements for setbacks and design, including production of mandatory information because of their location in an environmentally sensitive area—including stormwater runoff calculation.¹⁰²⁵

¹⁰¹⁶ *Id.*

¹⁰¹⁷ *Id.* at § 42.

¹⁰¹⁸ *Id.* at § 55.

¹⁰¹⁹ *Id.*

¹⁰²⁰ *Stratford Zoning Regs.* § 3.1.1.3.

¹⁰²¹ *Id.* § 10.1.

¹⁰²² *Id.*

¹⁰²³ *Id.* § 10.1.3.14.

¹⁰²⁴ *Id.* § 10.1.4.

¹⁰²⁵ *Stratford Zoning Regs.* § 10.1.5.

Stratford also has established a Waterfront Business District “preserve and enhance existing water dependent uses, encourage new water dependent uses where appropriate and encourage development which is compatible with the coastal resource characteristics.”¹⁰²⁶ All uses must be heard as a special case in this district and are subject to coastal site plan review.¹⁰²⁷ Waterfront Business District permitted uses include specified: (i) marine uses; and (ii) residential, retail, and restaurant uses only when part of a mixed-use project that incorporates marine and non-marine uses.¹⁰²⁸ Specific standards (e.g., setbacks, density) apply to structures within the Waterfront Business District, including special requirements for residential as well as architectural guidelines.¹⁰²⁹

3.1.1.10 West Haven

West Haven has established a Waterfront Design District “to foster a pedestrian-oriented environment within a low to mid-rise mixed use commercial and residential community and encourages water dependent uses and provides incentives to encourage incorporation of public usable open space to extend shorefront public space.”¹⁰³⁰ The district promotes waterfront development but accounts for resiliency concerns by encouraging “use of at grade parking with structures above, or garages accessed from a service alley” and discouraging “large expanses of surface parking and garages with individual street access.”¹⁰³¹

Only allowable uses are permitted in the waterfront design district, subject to general requirements and specific limitations on residential uses, sidewalks, and other provisions.¹⁰³² Other uses may be allowed by special permit and special use exception.¹⁰³³

West Haven has also established a Shoreline Commercial Retail District to “provide for convenient commercial development in appropriate locations in proximity to residential areas with uses that take advantage of the waterfront location of the district and review standards that recognize the unique characteristics of the sites.”¹⁰³⁴

3.1.1.11 Summary of Coastal Zoning Districts

Many, but not all municipalities have established specific zoning districts applicable in the coastal area. These may either be zoning districts or overlay districts. Overlay districts are commonly integrated with coastal site plan review requirements (discussed below), and in some cases include additional use limitations. Waterfront zoning districts, on the other hand, contain their own use limitations focused on particular types of activities desired and prohibited. These districts generally contain more rigorous and thorough controls on activities than are present in overlay districts, and

¹⁰²⁶ *Id.* § 8.1.

¹⁰²⁷ *Id.* § 8.2

¹⁰²⁸ *Id.* § 8.2.

¹⁰²⁹ *Stratford Zoning Regs.* §8.3

¹⁰³⁰ *West Haven Zoning Regs.* § 36.1.

¹⁰³¹ *Id.* § 36.2.

¹⁰³² *Id.* § 36.3.

¹⁰³³ *Id.*

¹⁰³⁴ *Id.* § 20.2.4.

may therefore more effectively target and require developments that are consistent with coastal resiliency needs.

Table 1. Coastal zoning districts by municipality.

Municipality	Coastal District(s)	Type
Branford	Coastal Management	Overlay
Bridgeport	Mixed Use - Waterfront	Zoning
East Haven	--	--
Fairfield	Beach	Zoning
Guilford	Coastal Area	Overlay
Madison	--	--
Milford	Beach Erosion Zone	Zoning
	Boating Business	Zoning
	Waterfront Design	Zoning
New Haven	Coastal Management District	Overlay
	Light Industry – Marine	Zoning
	Marine	Zoning
Stratford	Coastal Area Management	Overlay
	Coastal Industrial	Zoning
	Waterfront Business	Zoning
West Haven	Waterfront Design	Zoning

The contents of coastal districts differ substantially by municipality. Urban jurisdictions seeking to develop their shorefront areas consistent with their coastal resiliency needs have created waterfront business districts to promote mixed use residential and light industrial and commercial use of their less developed—but potentially highly valuable—waterfronts. Suburban jurisdictions, on the other hand, appear to use coastal districts to limit development in coastal areas with a focus on protecting coastal resources, often but not always through an overlay district used exclusively to apply coastal site review requirements, rather than on promoting development. These differences reflect the distinct needs and preferences of each type of municipality.

Urban waterfront zoning districts differ in their approach to coastal resiliency. Some municipalities do not incorporate resiliency concerns. For example, Bridgeport explicitly seeks densification of its waterfront areas without mandating incorporation of resilience considerations. In this context, the long-term resiliency of developments will depend on the coastal site plan review process and the incorporation of resiliency-focused design elements by developers. Other jurisdictions provide more guidance; for example, West Haven seeks low- to mid-rise mixed use development but seeks building elevation with at-grade parking on the ground floor, thus reducing building exposure to coastal flood hazards.

Other municipalities have created multiple zoning or overlay districts to regulate different types of activities in the coastal zone. Milford has created three coastal zoning districts that set areas aside

primarily for recreational and park uses; create separate areas where water-dependent marina and boating uses can be allowed by special permit; and identify where (primarily) residential uses may be appropriate by special permit. These three zones in practice occupy only a small part of the coastal area, however: most areas within Milford's coastal area management boundary are designated under other general or corridor zones that allow residential, commercial, industrial, or open space uses without special reference to coastal issues. Thus, despite coastal-specific zoning, the coastal site review process remains a critical element of resilience in Milford as elsewhere.

Stratford's approach to coastal zoning applies coastal-specific elements in a more encompassing fashion through the use of an overlay zone. Stratford has created two waterfront zoning districts similar to those in Milford, and like Milford has zoned its coastal area to include not just these two zones but also a wide array of other general zoning districts. Stratford, however, has created an overlay zone that applies to any development in the coastal area and requires not only coastal site review but also specific additional standards (e.g., view lanes). This overlay allows Stratford to avoid large-scale changes to its legacy zoning districts and plan while also requiring affected areas to meet higher standards, which can include resiliency-focused elements.

The municipalities in the study area illustrate the wide variety of approaches available to address coastal zoning. Cities and towns can successfully plan for resilience by using waterfront-specific coastal districts, overlay districts, or both. Municipalities without either type of coastal district may be equally capable of managing their coastal areas through regulations rather than districts (e.g., through coastal site plan review regulations that do not reference a particular district), but this method may be difficult to ally with other coastal resiliency-focused use restrictions. However a municipality designs its selected approach, it must implement that approach in a coherent, consistent, and forward-looking manner for it to operate effectively in practice. The locations of relevant districts and the specific requirements that apply are both important to success.

3.1.2 Coastal Site Plan Review

The state Coastal Management Act requires all municipalities to implement specific planning and approval processes in the coastal area, including through submission and review of coastal site plans for activities requiring planning and zoning approval seaward of the defined coastal boundary. Municipalities are authorized to exempt certain activities from the requirement to receive approval of a coastal site plan. This section audits whether and how each municipality has established the required coastal site plan review structure, including unique provisions of each municipality's approach.

3.1.2.1 Branford

Branford has created a Coastal Management District as an overlay district intended "to insure that the development, preservation or use of land and water resources proceeds in a manner consistent with the capability of the land and water resources to support such development, preservation or use without significantly disrupting either the natural environment or sound economic growth."¹⁰³⁵

¹⁰³⁵ *Branford Zoning Regs.* § 5.1.A.

In general, use of land, buildings, and other structures in the district must adhere to the underlying zoning district's regulations.¹⁰³⁶ However, any building, use, or activity in the district requires a Coastal Site Plan Review unless exempted.¹⁰³⁷ Exemptions include all those identified in state law.¹⁰³⁸ Landowners in the districts must also comply with additional requirements for coastal setbacks and vegetated buffers (see below).

3.1.2.2 Bridgeport

Bridgeport has established coastal site plan reviews as a special case of its general site plan review provisions rather than through an overlay district.¹⁰³⁹ Under the provisions, site plan review is required except where exempt. Exemptions are worded differently than the state statute in some cases, but notably differ only in that residential dwellings are exempt from review even if less than 100 feet from coastal resources for additions that are less than a 20% expansion in area.¹⁰⁴⁰

3.1.2.3 East Haven

East Haven has created a Coastal Area Management Zone as an overlay zone. The development standards on a particular property depends upon the underlying zoning.¹⁰⁴¹ Construction or use of land in the CAM zone requires a Coastal Site Plan Review unless exempted.¹⁰⁴² Non-conforming activities are not exempted within 50 feet of mean high water or certain coastal resources such as: wetlands, beaches, dunes, coastal bluffs and escarpments, estuarine embayments, or rocky shore fronts.¹⁰⁴³

3.1.2.4 Fairfield

Fairfield uses a regulation rather than an overlay to govern coastal site plan review. Under the regulations, buildings, uses, and structures in the coastal boundary are subject to review unless exempt.¹⁰⁴⁴ The exemptions follow state law almost exactly.¹⁰⁴⁵

3.1.2.5 Guilford

As noted above, Guilford has created a Coastal Area Overlay District that is coterminous with the coastal boundary as defined under the state Coastal Management Act. The district implements the Coastal Management Act as well as containing specific zoning requirements. All structures and uses within a coastal zone require Coastal Site Plan Review unless exempted.¹⁰⁴⁶

¹⁰³⁶ *Id.* § 5.1.A.

¹⁰³⁷ *Id.* § 5.1.A.

¹⁰³⁸ Compare *id.* § 5.1.C; Conn. Gen. Stat. § 22a-109. The only difference is exclusion of elevated decks and below-ground swimming pools from the list of "structures incidental to the enjoyment and maintenance of residential property" specifically exempted from the coastal site plan requirement. *Id.*

¹⁰³⁹ *Bridgeport Zoning Regs.* § 14-3.

¹⁰⁴⁰ *Id.* § 14-3-3(c).

¹⁰⁴¹ *East Haven Zoning Regs.* § 46.1.

¹⁰⁴² *Id.* § 46.2. East Haven recognizes a subset of the exceptions allowed by state law. *Id.*

¹⁰⁴³ *Id.* § 46.3.

¹⁰⁴⁴ *Fairfield Zoning Regs.* § 2.14.

¹⁰⁴⁵ *Id.*

¹⁰⁴⁶ *Guilford Zoning Regs.* § 273-91. Exemptions include those provided under state law, with minor differences.

3.1.2.6 Madison

Madison has defined a “coastal zone” coterminous with the coastal boundary as established by the state Coastal Management Act.¹⁰⁴⁷ All “proposed changes to buildings, uses, structures and [FECS]” in the coastal zone are subject to coastal site plan review unless exempted.¹⁰⁴⁸

3.1.2.7 Milford

Milford separately requires compliance with coastal site plan review. Buildings, uses, and structures within the coastal boundary are subject to site plan review unless exempted.¹⁰⁴⁹ Milford has exempted all those activities authorized under state law.¹⁰⁵⁰

3.1.2.8 New Haven

New Haven has created a Coastal Management District as an overlay district “to ensure that the development, preservation or use of the land and water resources of the coastal area proceeds in a manner consistent with the capability of the land and water resources to support development, preservation or use without disrupting either the natural environment or sound economic growth and to ensure public access along the city's waterfront and the preservation of a natural viewpoints and vistas.”¹⁰⁵¹

The uses allowed by the underlying district are allowed in this district, provided the coastal site plan review shows acceptable potential adverse impacts from the proposed use on coastal resources and water-dependent uses.¹⁰⁵² Coastal Site Plan Review is required for all buildings, structures, and uses within the coastal management district, except those specifically exempted.¹⁰⁵³ No other requirements apply within the district.

3.1.2.9 Stratford

Stratford has created Coastal Area Management regulations for implementation of the state Coastal Management Act. Under the regulations, coastal site plan review is required except where exempted. Exemptions follow state law, except that no exemption is available for any activity within 50 feet of coastal resources.

3.1.2.10 West Haven

West Haven has created a Coastal Area Management (CAM) overlay district to fulfill the Coastal Management Act.¹⁰⁵⁴ Development in the CAM is allowed based on the underlying zoning district, provided that coastal site plan review is required unless excepted, and the use must have an acceptable adverse impact on coastal resources and water-dependent activities.¹⁰⁵⁵

¹⁰⁴⁷ *Madison Zoning Regs.* § 25.1.1.

¹⁰⁴⁸ *Id.* § 25.2.

¹⁰⁴⁹ *Milford Zoning Regs.* § 5.12.1.

¹⁰⁵⁰ *Id.* § 5.12.2.

¹⁰⁵¹ *New Haven Zoning Regs.* § 55.

¹⁰⁵² *Id.*

¹⁰⁵³ *Id.* § 55.

¹⁰⁵⁴ *West Haven Zoning Regs.* § 71.1.

¹⁰⁵⁵ *Id.* § 71.

3.1.2.11 Summary of Coastal Site Plan Review

As required by state law, each municipality in the study area has established a coastal site plan review process as part of its zoning regulations. These requirements differ only in minor respects, with a few exceptions.

First, while most towns have created an overlay district to serve as the mechanism governing coastal site plan review, several municipalities have simply incorporated regulations for the review without an overlay district. This distinction has little import, except that municipalities have used such overlay districts to incorporate other, related provisions to enhance coastal resiliency, such as vegetated buffers (see elsewhere in this section).

Second, the exemptions from coastal site plan review differ in some respects. Most municipalities have adopted the optional exemptions provided in state law almost or exactly verbatim. Others, however, have modified the language in marginal or more substantial respects. Differences may result from changes to state law that are not carried over to the municipal level or from more intentional decisions based on the expected development in or the geography of particular municipalities.

Adoption of setback limitations are an example of intentional municipal decision to limit the scope of exemptions from the law. Several municipalities have limited availability of one or more exemptions to create and modify setback requirements. Where a setback limit is set for an exemption, an applicant must undergo coastal site plan review even for activities that would otherwise be exempt. While this may raise expenses for municipalities by increasing the coastal site plan review load, it also may reduce the risk that otherwise-minor development activity causes temporary or irreparable harm to coastal resources that provide important ecosystem services to the community.

In one case—East Haven—the setback limitation is global, insofar as no activity within 50 feet of coastal resources is exempt. All other municipalities with setback limits apply these limits to particular state-allowed exemptions, either alone or with other differences not summarized here but including area limits based on square footage of percent increase in impervious surface; shoreline access losses, or particular activities (e.g., decks). Setback limitations vary from none (as in most but not all exemptions under state law) to 100 feet, as shown in

Table 2.

Table 2. Coastal site plan review exemption setback limitations.

Exemption	Municipality	Setback limit
Minor additions to or modifications of existing buildings or detached accessory buildings...	Guilford	100 ft
	Madison	25 ft
	Stratford	100 ft
	West Haven	50 ft

Construction of new or modification of existing structures incidental to the enjoyment and maintenance of residential property	Madison	25 ft; regrading affecting topography
	West Haven	50 ft
Construction of new or modification of existing on-premise structures . . . as will not substantially alter the natural character of coastal resources or restrict access along the public beach	Madison	25 ft; regrading affecting topography
	West Haven	50 ft

3.1.3 Coastal Setbacks

Coastal setback requirements set limits on how close coastal property development can occur to the water. Setbacks are an important tool for both supporting coastal green infrastructure like wetlands and dune systems and for reducing casualty loss. Coastal setbacks are distinct from the limitations on exemptions based on setback, as described above, in that they govern where activity can occur rather than the process required to approve the activity. As such, both types of setback may contribute meaningfully to development patterns in coastal areas and to coastal resiliency. This section reviews the applicable coastal setbacks on a municipal level, as well as dune protection requirements.

3.1.3.1 Branford

All new construction or substantial improvement in CHHAs in Branford must be located landward of the CJL.¹⁰⁵⁶ In addition, the zoning regulations require a 25-foot setback from any “critical coastal resource” for any parking area, building or other structure “except for walkways, drainage facilities and other utilities, raised boardwalks, piers, docks and similar facilities.”¹⁰⁵⁷

3.1.3.2 Bridgeport

All new buildings, structures or substantial improvements located within the CHHA must be located landward of the reach of the mean high tide.¹⁰⁵⁸

3.1.3.3 East Haven

East Haven requires that all “new construction, substantial improvement and repair to structures that have sustained substantial damage” within zones V and VE be located at least twenty-five (25) feet landward of the CJL.¹⁰⁵⁹

3.1.3.4 Fairfield

Fairfield requires that all new construction in CHHAs (Zone VE) be located landward of the reach of mean high tide, except for accessory uses (e.g., boat docks).¹⁰⁶⁰

¹⁰⁵⁶ *Branford Code* § 161-19.

¹⁰⁵⁷ *Branford Zoning Regs.* § 5.1B.

¹⁰⁵⁸ *Bridgeport Code* § 15.44.150.

¹⁰⁵⁹ *East Haven Code* § 9-78.

¹⁰⁶⁰ *Fairfield Zoning Regs.* § 32.5.

In the Beach District, there is a minimum setback from Long Island Sound of at least 25 feet. Existing structures cannot be expanded toward the coast, and new structures cannot be closer than a line drawn between the two houses on either side of the new structure “including porches, but not open decks on the ground floor.”¹⁰⁶¹ Additional setback provisions apply to setbacks from streets and from Pine Creek.¹⁰⁶²

3.1.3.5 Guilford

All new construction or substantial improvement in CHHAs (Zone VE) must be located 25 feet landward of the reach of the CJL.¹⁰⁶³ New construction, substantial improvements and repair to structures that have sustained substantial damage cannot be constructed or located entirely or partially over water unless it is a functionally dependent use or facility.¹⁰⁶⁴

Guilford’s zoning regulations further require setbacks between proposed structures and impervious surfaces (other than docks and landings and public viewing areas approved by the Commission) and critical coastal resources.¹⁰⁶⁵ Setbacks depend on the depth of the lot or distance to the existing development and on the type of coastal resource, as shown below. Setbacks “may be increased when the Commission finds that the rate of erosion of the critical coastal resource or the rate of encroachment of coastal waters is likely to require a larger setback in order to protect the critical coastal resource.”¹⁰⁶⁶

Table 3. Coastal setbacks in Guilford

Development Depth	<50 ft	50-100 ft.	>100-200 ft.	>200 ft.
Min. setback from: Tidal Wetland and Intertidal Flats	25ft.	35 ft.	50 ft.	100 ft.
Coastal Bluffs and Escarpments	25 ft.	35 ft.	50 ft.	50 ft.
Beaches or Dunes	25 ft.	35 ft.	50 ft.	50 ft.
Rocky Shorefronts	25 ft.	25 ft.	35 ft.	50 ft.

3.1.3.6 Madison

In Coastal High Hazard Areas (Zone VE), all new construction or substantial improvement shall be located landward of the CJL.¹⁰⁶⁷ In addition, the Zoning Regulations require a minimum setback of 50 feet from critical coastal resource areas for all buildings except accessory buildings.¹⁰⁶⁸

¹⁰⁶¹ *Id.* § 11.12.

¹⁰⁶² *Id.* §§ 11.13 – 11.16.

¹⁰⁶³ *Guilford Code* § 174-19.

¹⁰⁶⁴ *Id.* § 174-16.

¹⁰⁶⁵ *Id.* § 273-91.

¹⁰⁶⁶ *Id.*

¹⁰⁶⁷ *Madison Code* § 9-34.

¹⁰⁶⁸ *Madison Zoning Regs.* § 2.17.

3.1.3.7 Milford

In Coastal High Hazard Areas (Zone VE), all buildings and structures must be located landward of the reach of the mean high tide.¹⁰⁶⁹ New construction, substantial improvements, and repair to substantially damaged structures cannot be constructed or located entirely or partially over water unless they are functionally dependent on the water.¹⁰⁷⁰

Additionally, Milford has created a mandatory 25-foot setback from both tidal wetlands and from “the seasonal high water level, mean high watermark, or legally established boundary of any tidal waterbody, watercourse, wetland or flood hazard area.”¹⁰⁷¹

3.1.3.8 New Haven

New Haven requires any new construction or substantial improvements in a Coastal High Hazard Area (Zones V and VE) to be located 25 feet landward of the CJL.¹⁰⁷²

3.1.3.9 Stratford

All buildings or structures in the Coastal High Hazard Area (Zone VE) must be located landward of the reach of the mean high tide.¹⁰⁷³ In addition, “no new building construction increasing building area” or accessory buildings, including alteration of existing contours, is permitted within 50 feet of mean high water or inland wetland, except for water-dependent uses.¹⁰⁷⁴ These activities are not permitted within 75 feet of tidal wetlands, coastal bluffs and escarpments, and beach and dune systems.¹⁰⁷⁵

3.1.3.10 West Haven

New construction and substantial improvement in CHHAs (V Zones) can only occur landward of the CJL.¹⁰⁷⁶

3.1.3.11 Summary of Coastal Setbacks

Towns differ substantially in their approach to coastal setbacks. Some require setbacks only through their floodplain management ordinances or regulations. In these provisions, municipalities uniformly select one of two options for a baseline—mean high water or the CJL. While either baseline may be workable, the CJL may offer more certainty and ensures consistency with state law regarding, e.g., permitting in tidal wetlands. Municipalities may or may not require setbacks beyond that baseline. Additional setback requirements are likely to decrease vulnerability to coastal flooding and erosion and may therefore enhance resiliency.

The second mechanism that municipalities have used for coastal setbacks arises from zoning restrictions incorporated into zoning regulations that are generally applicable regardless of district,

¹⁰⁶⁹ *Milford Zoning Regs.* § 5.8.14.

¹⁰⁷⁰ *Id.* § 5.8.12.4.

¹⁰⁷¹ *Id.* § 4.1.16.

¹⁰⁷² *New Haven Code* tit. IV § 5.4.3.1.

¹⁰⁷³ *Stratford Code* § 102-19.

¹⁰⁷⁴ *Stratford Zoning Regs.* § 3.14.

¹⁰⁷⁵ *Id.* § 3.14.

¹⁰⁷⁶ *West Haven Zoning Regs.* § 70.16.

as in Stratford, or incorporated into the specific requirements applicable in a particular coastal district, as in Fairfield. Most municipalities using generally applicable setbacks (Branford, Guilford, Madison, and Milford) select a baseline that exists only where there are critical coastal resources present, and these setbacks may be tailored to the type of resources present and the particular characteristics of a given lot or neighborhood. Stratford, on the other hand, has created a generally-applicable 50-foot setback that is increased in the presence of coastal resources.

Table 4. Coastal setbacks

Municipality	Baseline	Setback (feet)
Branford	Coastal Jurisdiction Line	0
	Critical Coastal resources	25
Bridgeport	Mean High Tide	0
East Haven	Coastal Jurisdiction Line	25
Fairfield	Mean High Tide	0
	In Beach District	25 (min.)
Guilford	Coastal Jurisdiction Line	25
	Critical coastal resources	25-100 (min.)
Madison	Coastal Jurisdiction Line	0
	Critical Coastal Resources	50
Milford	Mean High Tide	0
	Seasonal high water, MHT, or legally established boundary	25
New Haven	Coastal Jurisdiction Line	25
Stratford	Mean High Tide	50
	Tidal wetlands, coastal bluffs and escarpments, and beach and dune systems	75
West Haven	Coastal Jurisdiction Line	0

3.1.4 Natural Protective Barrier Protection

Natural coastal features provide an important flood and erosion protection service. These features include topography such as dunes as well as vegetation that may anchor soils, dissipate wave energy, and encourage infiltration. Although dunes and other features provide natural protection against flooding and erosion in coastal areas, property owners nonetheless may seek to remove them in order to obtain enhanced views, water access, or for other reasons.

Protection of dunes and vegetation is largely a municipal function for features located landward of the CJL. This section reviews how municipalities enhance coastal resiliency by specifically protecting dunes and vegetation.

3.1.4.1 Branford

Branford prohibits alteration of sand dunes in the CHHA (VE) which would increase potential flood damage.¹⁰⁷⁷

Branford has also established a policy that, in any project requiring a coastal site plan review, existing “vegetated buffers” must be retained and/or new buffers created.¹⁰⁷⁸ Buffers are “an undisturbed area or strip of land covered with permanent stable vegetation adjacent to” an area with “environmentally sensitive and/or ecologically fragile natural resources” and thus likely encompasses natural coastal systems that provide ecosystem services as a form of green infrastructure.¹⁰⁷⁹ The width of a required vegetated buffer will be determined on a case-by-case basis and will be “appropriate to the quality of the coastal resource, the extent and type of development proposed, and the topography of the site.”¹⁰⁸⁰

3.1.4.2 Bridgeport

Bridgeport prohibits alteration of sand dunes that would increase potential flood damage.¹⁰⁸¹

3.1.4.3 East Haven

East Haven prohibits alteration of sand dunes that would increase potential flood damage.¹⁰⁸²

3.1.4.4 Fairfield

Man-made alteration of sand dunes is prohibited if it would increase potential flood damage.¹⁰⁸³

3.1.4.5 Guilford

Sand dunes cannot be altered if the alteration would increase potential flood damage in the area.¹⁰⁸⁴ In addition, the Guilford PZC may require a vegetated buffer “appropriate to the quality of the coastal resource and the extent and type of development proposed” in order to protect a coastal resource.¹⁰⁸⁵

3.1.4.6 Madison

Alteration of sand dunes cannot be permitted if the alteration would increase potential flood damage.¹⁰⁸⁶

3.1.4.7 Milford

Alteration of sand dunes is prohibited if it would increase potential flood damage.¹⁰⁸⁷

¹⁰⁷⁷ *Branford Code* § 161-19.

¹⁰⁷⁸ *Branford Zoning Regs.* § 5.1.D.

¹⁰⁷⁹ *Id.*

¹⁰⁸⁰ *Id.*

¹⁰⁸¹ *Bridgeport Code* § 15.44.150.

¹⁰⁸² *East Haven Code* § 9-78.

¹⁰⁸³ *Fairfield Zoning Regs.* § 32.5.

¹⁰⁸⁴ *Guilford Code* § 174-19.

¹⁰⁸⁵ *Id.*

¹⁰⁸⁶ *Madison Code* § 9-34.

¹⁰⁸⁷ *Milford Zoning Regs.* § 5.8.14.3.

Milford restricts coastal development impacts on coastal vegetation and resources by mandating that “sand dunes, barrier beaches, and other natural protective barriers shall remain intact to provide protection against wind and erosion damage.”¹⁰⁸⁸ The Board may permit removal of “sand washed or blown upon improved properties by action of high winds and tides,” provided that removal cannot create a hazardous condition upon that property or other properties.¹⁰⁸⁹

3.1.4.8 New Haven

Alteration of sand dunes that would increase potential flood damage is prohibited.¹⁰⁹⁰

3.1.4.9 Stratford

Alteration of sand dunes is prohibited if it would increase potential flood damage.¹⁰⁹¹

3.1.4.10 West Haven

Manmade alteration of sand dunes that would increase potential flood damage is prohibited.¹⁰⁹²

3.1.4.11 Summary of Natural Protective Barrier Protection

Limitations on the modification of natural features and vegetation play an important role in flood prevention and mitigation. All flood prevention ordinances, without meaningful variation, prohibit alteration of dunes that will worsen potential flood damage. While beneficial, these provisions are limited and do not protect other important features that provide flood and erosion control features, including vegetation. Three municipalities in the study area have incorporated additional limitations into their zoning regulations. In two cases, these provisions require retention of existing vegetated buffers and may require creation of new buffers, while one requires that dunes, barrier beaches, and “other natural protective barriers” remain intact. Both of these approaches may support coastal green infrastructure, although only the latter approach is directly framed in terms of coastal resiliency.

Table 5. Coastal natural feature preservation requirements.

Municipality	Protection beyond alteration of dunes
Branford	Vegetated buffers must be retained and new buffers may be required
Bridgeport	--
East Haven	--
Fairfield	--
Guilford	Vegetated buffer may be required
Madison	--
Milford	Retain “sand dunes, barrier beaches, and other natural protective barriers”
New Haven	--
Stratford	--

¹⁰⁸⁸ *Id.* § 5.8.6.7.

¹⁰⁸⁹ *Id.*

¹⁰⁹⁰ *New Haven Code* tit. IV § 5.3.4.7.

¹⁰⁹¹ *Stratford Code* § 102-19.

¹⁰⁹² *West Haven Zoning Regs.* § 70.16.

West Haven	--
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3.1.5 Flood and Erosion Control Structures

State law authorizes municipalities to create FECBs or to designate another body with the powers of a FECB, which include the design, layout, construction, and maintenance of FECS. FECS include a wide array of hard infrastructure approaches to erosion management, such as groins, seawalls, and tide gates. The FECB enabling statute does not address green infrastructure, so it is not clear whether FECBs may develop or construct coastal green infrastructure as a FECS—nor has any municipal FECB attempted such a project to our knowledge.

FECB authorities do not exempt municipalities wishing to create FECS from complying with other applicable laws; to the contrary, municipalities are required to obtain a permit from DEEP for activities affecting tidal wetlands or requiring placement of fill material, and such permits for hard infrastructure are granted only where meeting limited criteria. Permitting of green infrastructure and living shorelines approaches to flood and erosion control projects will also be challenging, as DEEP has not to date clarified what types of projects are likely to be considered living shorelines approaches.

As shown in Table 6, most, but not all, municipalities in the study area have established a FECB and vested in them the authority provided under state law. In a few cases, a FECB has additional responsibility to act as an appeals body under the flood management regulations.

Table 6. FECB adoption by municipality.

Municipality	Authority	Powers beyond those given by state statute
Fairfield	FECB ¹⁰⁹³	--
Bridgeport	FECB ¹⁰⁹⁴	--
Stratford	--	--
Milford	FECB ¹⁰⁹⁵	--
West Haven	FECB ¹⁰⁹⁶	Hears appeals from decisions by Director of Planning related to flood management ¹⁰⁹⁷
New Haven	--	--
East Haven	FECB ¹⁰⁹⁸	--
Branford	FECB ¹⁰⁹⁹	Hears appeals from decisions and requests for variances under town floodplain management regulations ¹¹⁰⁰

¹⁰⁹³ *Fairfield Charter* § 10.12.

¹⁰⁹⁴ *Bridgeport Code* § 15.44.050.

¹⁰⁹⁵ *Milford Code* ch. 18 art. 5, citing Conn. Gen. Stat. §§ 25-84 - 25-94.

¹⁰⁹⁶ *West Haven Code* § 19-1, citing Conn. Gen. Stat. 25-84; *West Haven Charter* ch. XIV(B) § 5.

¹⁰⁹⁷ *West Haven Code* § 111-8.

¹⁰⁹⁸ *East Haven Code* § 9-16, -17; *East Haven Charter* ch. VI § 18.

¹⁰⁹⁹ *Branford Code* §§ 50-1, 50-2.

¹¹⁰⁰ *Id.* §§ 161-21.

Guilford	FECB ¹¹⁰¹	--
Madison	FECB ¹¹⁰²	--

Currently, FECBs are typically entities of lower importance in most municipalities in the study area. FECB authorities uniformly lack any details to govern board responsibilities or guide their decision-making. Instead, municipalities simply adopt the provisions set out in state law. Given these limitations, it is not surprising that interviews consistently suggest that FECBs meet only irregularly and in response to particular project proposals. Despite these limitations, FECBs could provide a useful partner for municipal coastal living shorelines projects if they receive the resources and assistance needed to effectively plan and execute such projects in a proactive manner. Without such support, FECBs may primarily serve as an administrative hurdle to the design and execution of such projects.

3.2 Open Space

Land development in the coastal area has a substantial impact on municipal and regional resiliency. Densification and development in the coastal zone increases the number of people and amount of property vulnerable to flooding and coastal erosion and may substantially increase the casualty losses associated with storm events and sea level rise. At the same time, coastal development can be highly beneficial for municipalities by increasing property tax income—especially in areas where coastal property values are high.

Legal tools can increase coastal resiliency by requiring or providing incentives for development that mitigates risks associated with sea level rise and storm activity. This section reviews legal approaches that municipalities can use to improve resiliency, including transferable development rights, cluster development, open space set-asides, and coastal setbacks and buffers.

3.2.1 Transferable Development Rights

Transferable Development Rights (TDR) offers developers incentives to reduce density or not develop in one area in exchange for enhanced density or other benefits in another location. “In their simplest forms, these policies divide a jurisdiction into a sending area (where development is discouraged) and a receiving area (where development is encouraged). The receiving area is zoned for relatively high-density development, while the sending area is zoned for agriculture and very low-density housing, e.g., 1 home per 10 acres.”¹¹⁰³

Affordable housing, transit-oriented development, and other development patterns have been encouraged by the use of incentive programs in the study area. For example, Branford has created an Incentive Housing Overlay District that “seeks to avoid sprawl and traffic congestion by encouraging a more vibrant residential component to business or mixed-use areas in order to sustain a lifestyle in which residents can walk or use public transportation to reach jobs, services,

¹¹⁰¹ *Guilford Code* §§ 42-1, 42-4

¹¹⁰² *Madison Code* § 2-173.

¹¹⁰³ James G. Titus, *ROLLING EASEMENTS: A PRIMER FOR COASTAL MANAGERS* 67 (EPA 2011).

and recreational or cultural opportunities.” These districts may be eligible for state incentives and have enhanced use and bulk requirements as compared to areas outside the district.¹¹⁰⁴ However, neither Branford nor any other municipality in the study area has established authority using similar incentives for *transfer* purposes.

3.2.2 Cluster Development

Cluster development provisions allow for densification of development in certain areas of a parcel, while other areas are left open and undeveloped.¹¹⁰⁵ As such, cluster development in subdivision and zoning regulations may be an important element of increasing the resiliency of new coastal subdivision activity. This section reviews municipal cluster development provisions.

3.2.2.1 Branford

The Branford PZC is authorized to approve a Special Exception to permit establishment of an “open space residential development.” This exception allows for the modification of lot area, shape, and setbacks for increased density in exchange for open space dedication. The dedication must further one of six purposes related to open space conservation.¹¹⁰⁶ At least 85% of these developments must be in R-3, R-4, and R-5 districts, each of which is associated with different required open space dedication amounts per unit.¹¹⁰⁷ Developments may occur as a subdivision or under common ownership of the development.

Branford’s zoning regulations also provide for “planned development districts” which the Commission may establish to permit modification of the zoning regulations for particular purposes when no other zoning district can be established for that purpose.¹¹⁰⁸ The zoning regulations caution that planned development districts in the coastal management district should avoid increasing development density but should rather be used “to allow greater flexibility in planning and design, free from the rigid constraints of uniform locational standards, at densities consistent with the immediately adjacent neighborhood and capable of being supported by the available water supply and sewage disposal facilities.”¹¹⁰⁹

3.2.2.2 Bridgeport

Bridgeport provides explicit authority for the PZC to, by special permit, modify generally applicable area, dimensions, and setbacks of subdivisions to “cluster development, group public open space, and accommodate the retention of existing slopes, trees, wetlands, other natural features, and historic resources.”¹¹¹⁰ This is not associated with an increase in density.

¹¹⁰⁴ *Branford Zoning Regs.* § 5.7(c).

¹¹⁰⁵ Titus, *supra* note 1103, at 72-74.

¹¹⁰⁶ *Branford Zoning Regs.* § 7.3.

¹¹⁰⁷ *Id.* § 7.3B.

¹¹⁰⁸ *Id.* § 5.4.A.

¹¹⁰⁹ *Id.* § 5.4.B(2).

¹¹¹⁰ *Bridgeport Zoning & Subd. Regs.* § 14-11-4.

3.2.2.3 East Haven

East Haven authorizes the creation of Open Space Developments through Special Exceptions issued by the PZC.¹¹¹¹ These developments are open to single family dwellings in individual lots or common ownership in R-3., R-4, or R-5 districts in order to, among other things, “protect streams, rivers and ponds so as to avoid flooding, erosion and water pollution.”¹¹¹² The regulations authorize modification of lot area and shape but do not permit increases in the number of units allowed. The town cannot accept roads in open space developments.¹¹¹³

3.2.2.4 Fairfield

“Open Space Subdivisions” are available by Special Exception in Residential Zones AA and AAA, where they authorize reductions in lot size in exchange for increased open space set-asides.¹¹¹⁴ The exception is available to accomplish one or more specific purposes, which includes protection of “streams, rivers ponds and wetlands to avoid flooding, erosion and water pollution.”¹¹¹⁵ At least 40% of the subdivision land must be dedicated.¹¹¹⁶ The open space area can be managed by the town, a neighborhood association, or a non-profit conservation organization.¹¹¹⁷

3.2.2.5 Guilford

Guilford’s zoning code allows open space subdivisions “to provide a more flexible method for the development of subdivisions in order to preserve substantial areas of open space and protect important natural and historic resources. . .”¹¹¹⁸ By obtaining a Special Permit, developers can receive authorization for increased density in exchange for open space dedication. Areas within the A, AE, and VE zones are not considered “developable area” under this program, which limits the program’s application in coastal areas.¹¹¹⁹

3.2.2.6 New Haven

The city subdivision regulations do not contain cluster development or open space set-aside provisions.

3.2.2.7 Madison

The PZC may designate areas in single family residential districts as “Open Space Conservation Districts” when consistent with the POCD and for purposes including, among other things, “to prevent flooding, erosion and water pollution.”¹¹²⁰ Approval requires a development plan. The maximum density can be 20% greater than the baseline for the applicable district, and the

¹¹¹¹ *East Haven Zoning Regs.* § 35.

¹¹¹² *Id.* § 35.2.5.

¹¹¹³ *East Haven Subd. Regs.* § 7.3.16.

¹¹¹⁴ *Fairfield Zoning Regs.* § 26.1.

¹¹¹⁵ *Id.* § 26.2.

¹¹¹⁶ *Id.* § 26.4 *et seq.*

¹¹¹⁷ *Id.* § 26.5 *et seq.*

¹¹¹⁸ *Guilford Code* § 273-213.

¹¹¹⁹ *Id.* § 272-218.

¹¹²⁰ *Madison Zoning Regs.* § 27.1.

maximum may be further increased in an Affordable Housing District.¹¹²¹ Open space reservation must be 50% of the gross land area in most cases.¹¹²²

3.2.2.8 Milford

Milford zoning regulations provide for cluster development in residential developments in subdivisions or common ownership.¹¹²³ Cluster development requires a permit from the Planning and Zoning Board, which may not provide for more density than otherwise allowed in the applicable zoning district.¹¹²⁴ Cluster developments must comply with other general standards, including lot area and number of lots. Land not used for lots must be permanently reserved as open space for purposes approved by the Board.¹¹²⁵

3.2.2.9 Stratford

Stratford has not established cluster development provisions.

3.2.2.10 West Haven

West Haven has not established cluster development provisions.

3.2.2.11 Summary of Cluster Development

Many, but not all municipalities in the study area have promulgated authority in their zoning or subdivision regulations that are relevant to cluster development. These requirements are most often through Open Space Subdivisions or Developments (e.g., Guilford, Branford, Fairfield) in which cluster requirements are substantially detailed. These provisions may (but often do not) offer incentives in the form of increased numbers of units in cluster developments.

Cluster development programs are generally only available in low-density residential areas. Insofar as these programs are most relevant in as-yet-undeveloped subdivision lands, they are not models for more urbanized municipalities. Urban areas have established alternative mechanisms, however; Bridgeport and certain other municipalities explicitly authorize cluster development under provisions that grant broad discretion to the PZCs to modify lot area and setbacks within the generally-applicable limitations on density.

Application of cluster developments may also have limited applicability in the coastal zone when, as in Guilford, they exclude SFHAs from the developable area eligible for consideration. While there are sensible reasons for such exclusion (beyond coastal resiliency), where the entire parcel is located in the coastal area, access to the densification incentives may require a variance.

3.2.3 Open Space Set-Asides

The ability to conserve coastal areas in an undeveloped state is a critical element to coastal resiliency, both reducing the exposure of the potential built environment and allowing

¹¹²¹ *Id.* § 27.2.

¹¹²² *Id.*

¹¹²³ *Milford Zoning Regs.* § 5.9.

¹¹²⁴ *Id.* § 5.9.3.

¹¹²⁵ *Id.* § 5.9.4.

natural/green infrastructure and living shorelines approaches to protect development that occurs in adjoining, vulnerable parcels. Municipalities may increase coastal resiliency by encouraging the placement of coastal lands in municipal ownership or in a land trust, subject to a perpetual easement prohibiting development. Such programs may operate with or without incentives in the form of transferred development rights or other benefits.

3.2.3.1 Branford

A subdivision must provide at least ten percent of its land for use as open space. The PZC determines where the set-aside is appropriate and must select land that is useful for one or more specific purposes, including resource protection and recreation.¹¹²⁶ Instead of placing open space within the development, the subdivider may opt to pay a fee equal to ten percent of the fair market value of the land, dedicate open space elsewhere in the town, or take other options as laid out by the regulations.¹¹²⁷ The Town is the preferred owner of open spaces, followed by non-profit conservation organizations, neighborhood associations, and other private organizations.¹¹²⁸

3.2.3.2 Bridgeport

Bridgeport does not require the dedication of open space in its subdivision regulations.

3.2.3.3 East Haven

At least ten percent of a new subdivision must be dedicated for either a park or playground.¹¹²⁹ The open space area shall be at least one acre, unless it is being added to an existing open space.¹¹³⁰ Wetlands can constitute no more than ten percent of the open space.¹¹³¹ The open space shall conform to the Town's master plan concerning parks, playgrounds, and open spaces.¹¹³² A subdivider may also pay a fee, equal to ten percent of the fair market value for the whole plot, in lieu of dedicating open space, which fee goes towards maintaining and purchasing open spaces.¹¹³³

3.2.3.4 Fairfield

Each subdivision over four acres or five lots must dedicate 10% of the area for "parks, playgrounds, recreational areas, or open space."¹¹³⁴ Dedicated land must fulfill listed objectives, and the PZC may cap the wetlands and watercourses area set aside at the same percentage as the remainder of the property (e.g., if a property is 25% wetlands, the Commission may require that no more than 25% of the open space be wetlands). The land may be dedicated to the town, a land trust or other nonprofit corporation, or to an association of property owners. In-lieu fees may be required where

¹¹²⁶ *Branford Subd. Regs.*, § 3.04.A.

¹¹²⁷ *Id.* § 3.04.B, M.

¹¹²⁸ *Id.* § 3.04.H.

¹¹²⁹ *East Haven Subd. Regs.* § 7.15.

¹¹³⁰ *Id.*

¹¹³¹ *Id.*

¹¹³² *Id.*

¹¹³³ *Id.* § 7.16.

¹¹³⁴ *Fairfield Subd. Regs.* § 2.3.

there are inadequate lands to merit preservation or other lands in town are more worthy of preservation.¹¹³⁵

3.2.3.5 Guilford

An applicant for a new subdivision must dedicate land within the subdivision, pay an in-lieu fee, dedicate land and pay a fee, or take another action the PZC deems appropriate.¹¹³⁶ If dedication is chosen, at least ten percent of the subdivision must be dedicated, which cannot primarily consist of wetlands, watercourses, 100-year floodplain, or steep slopes. The land must be shown on the subdivision plan, must be placed in a location approved by the Commission, and must be owned in perpetuity by the Town, a private conservation organization, or a homeowners' association.¹¹³⁷ The regulations do not indicate the amount of the in-lieu fee to be paid if the developer selects that option.¹¹³⁸

3.2.3.6 Madison

At least 10% of subdivision lands must be dedicated to open space for a purpose laid out in state law. Open spaces shall not consist of more than 50% wetland and shall be kept in their natural state unless otherwise approved for recreational uses.¹¹³⁹ In lieu of dedicating open space, a subdivider may pay a fee, which is deposited into a fund dedicated to maintaining or purchasing open space by the town.¹¹⁴⁰

3.2.3.7 Milford

A subdivider must set aside land to be used as open space. To qualify for dedication, the land must provide one or more specific functions set forth by regulation.¹¹⁴¹ The Planning and Zoning Board determines the location of the open space to achieve specific goals.¹¹⁴² The open space area must cover at least two acres unless future dedication is likely in that area to reach the two acre minimum.¹¹⁴³ The area must equal 10% of the gross area of the subdivision, except where that amount will create an undue hardship on the subdivider.¹¹⁴⁴ The Board may require payment of an in-lieu fee where it determines that provision of lands within the subdivision would place an undue hardship on the applicant.¹¹⁴⁵

3.2.3.8 New Haven

The city subdivision regulations do not contain cluster development or open space set-aside provisions.

¹¹³⁵ *Id.*

¹¹³⁶ *Guilford Code* § 272-41(A).

¹¹³⁷ *Id.* § 272-41(B).

¹¹³⁸ *Id.* § 272-41(D).

¹¹³⁹ *Madison Zoning & Subd. Regs.* § II-3.11.

¹¹⁴⁰ *Id.* §§ II-3.11.2; II-3.11.6.

¹¹⁴¹ *Milford Subd. Regs.* § 3.10.

¹¹⁴² *Id.*

¹¹⁴³ *Id.*

¹¹⁴⁴ *Id.* §§ 3.10, 3.10.1.

¹¹⁴⁵ *Id.* 3.10.1.

3.2.3.9 Stratford

Developments consisting of five or more lots shall require at least a ten percent dedication of the gross total of the development, all of which must be well-maintained and easily accessible. Open spaces shall have at least thirty-five feet of frontage on a town road. No more than sixty percent of the open space shall be inland or tidal wetlands or be sloped greater than twenty-five percent. The applicant may also pay a fee in lieu of dedicating the required open space.¹¹⁴⁶

Water-dependent uses that are only water-dependent because they provide public shoreline access must provide at least two from among seven listed amenities. These amenities include setting aside 10% of the area for a public park and providing a conservation easement over all of the sensitive coastal resource areas on the site.¹¹⁴⁷

3.2.3.10 West Haven

West Haven does not include a mandatory dedication of land in its subdivision regulations.

3.2.3.11 Summary of Open Space Set-Asides

Municipal authority—often in subdivision codes—contains provisions requiring transfer of a portion of land into perpetual conservation in exchange for the authority to develop. These authorities generally require a mandatory minimum dedication of subdivision lands to be set aside for open space and recreation. Coastal areas may be well suited for use as set-asides, as the local government can select lands based on their particular vulnerability or utility for coastal resiliency. However, these set-asides are limited because the regulations do not provide incentives for additional set-asides in exchange for density or other benefits that might enhance coastal resiliency. In addition, the limited area open to subdivision in coastal areas will restrict the use of these provisions as resiliency tools—except where in-lieu funds are used to purchase conservation easements or property along the coast.

Several characteristics of municipal regulations may affect their utility for coastal resiliency. Key differences among municipalities are as described below.

- **Area:** All municipalities require a minimum of ten percent of the subdivision's area to be dedicated as open space, while some also included minimum set-asides in acreage. Fairfield's Open Space Subdivision exception requires 40% set aside.
- **Land type:** Some municipalities restrict what types of lands may be included, most often focusing on undevelopable lands, including wetlands, watercourses, and steeply sloping lands. While most such set-asides include a fixed percentage of land dedicated, Fairfield uses a floating percentage based on the characteristics of individual parcels. This provision ensures protection of a reasonable portion of the developable area of a site.
- **Purpose:** Municipalities commonly direct that set-asides benefit one or more specific purposes. These purposes may commonly be for recreational or parks, but also often include environmental or conservation purposes.

¹¹⁴⁶ *Stratford Subd. Regs.* ch. V § 8.

¹¹⁴⁷ *Stratford Zoning Regs.* § 3.1.1.3.

- *Ownership:* Municipal requirements generally anticipate that the lands set aside will be placed in town ownership or be placed under the control of land trusts or other entities. Regulations generally envisage ownership of the land or an easement by the town, a land trust, or a neighborhood or homeowners' association.
- *In-Lieu Fees:* All municipalities with relevant programs offer an alternative to dedication through payment of an in-lieu fee equivalent to ten percent of the fair market value of the whole area. The municipal PZC generally has sole discretion to determine whether payment of an in-lieu fee is appropriate.

3.2.4 Financial Mechanisms

Municipalities can affect where and how development occurs in the coastal zone by using financial mechanisms to affect the decisions of developers in favor of, or against, certain activities. Two key mechanisms in this category include tax increment financing and development impact fees.

3.2.4.1 Tax Increment Financing

Tax increment financing (TIF) uses future increases in property tax receipts expected from development or redevelopment as a means of funding infrastructure or otherwise encouraging the development to occur. As explained by the Connecticut Office of Legal Research:

TIF is a financing technique municipalities use to repay bonds or other debt incurred to finance a development project. The technique taps the increased tax revenue (i.e., the increment) the project generates to repay the debt. Tapping the tax increment for this purpose allows municipalities to finance projects without raising new taxes or diverting funds needed to pay for other expenses. But municipalities may have to do both if the project fails to generate enough incremental revenue to cover the debt.¹¹⁴⁸

Connecticut authorizes municipalities to use TIF to repay bonds issued for physical project in five scenarios: redevelopment; urban renewal; municipal development for commercial or industrial use; information technology (distressed communities and targeted investment communities only); and redevelopment of contaminated property.¹¹⁴⁹

As discussed in Chapter 1, several municipalities in the study area have established redevelopment or urban renewal districts eligible for TIF financing. Numerous municipalities—particularly those with an urban form and legacy manufacturing capacity—have waterfront property with substantial contamination that may soon be underwater. The use of TIF in areas where regular or permanent inundation is likely in the near future are not good candidates for TIF, as they would be unlikely to yield the increased future tax revenue needed to support payments on a bond. However, certain redevelopment projects and districts, such as downtown Bridgeport, are subject to inundation but also act as economic drivers. These areas may be both eligible for and reasonable candidates for TIF to provide funding for elevation or other infrastructure projects.

¹¹⁴⁸ John G. Rappa, *Tax Increment Financing*, Conn. Office of Legal Rsch. No. 2011-R-0105 (Mar. 4, 2011).

¹¹⁴⁹ *Id.*

3.2.4.2 Development Impact Fees

Development impact fees offer a second financial tool for discouraging development that may reduce resiliency. As defined under California law, these fees are “a monetary exaction other than a tax or special assessment . . . that is charged by a local agency to the applicant in connection with approval of a development project for the purpose of defraying all or a portion of the cost of public facilities related to the development project.”¹¹⁵⁰

Development impact fees are commonly authorized at the state level, including in other New England states. Connecticut, however, requires specific authorization for municipalities to levy fees as part of their municipal functions.¹¹⁵¹ In other words, municipalities can impose fees only for purposes specifically provided by state law, such as for payments in lieu of open space dedication. As municipalities lack such explicit authorization for development impact fees, they cannot use this tool regardless of its potential utility in a coastal resiliency context.¹¹⁵²

3.3 Flood Hazard Mitigation

Municipalities are authorized to create a range of authorities related to flood hazard mitigation, including floodplain management regulations that create requirements for buildings and structures in the floodplain and flood and erosion control authorities empowered to create seawalls and other built flood and erosion control infrastructure for a town. Relevant authorities may be located in zoning and/or subdivision regulations. This section reviews several aspects of municipal flood hazard mitigation regulation, including whether development in high-risk areas can be prevented; what areas are included in SFHAs subject to regulation; what elevation requirements are provided in those areas; how developments must account for stormwater runoff and infiltration; and requirements to use low-impact development approaches and pervious surfaces.

3.3.1 Suitability for Building

One method for improving coastal resiliency is to limit development in locations that are vulnerable to flooding, erosion, or other threats. Municipalities must issue building permits for new development (and in Connecticut must review and approve a coastal site plan), providing a tool for review of the potential threats posed by particular coastal development proposals. This section reviews the municipal authorities governing or limiting approval of sites that are unsuitable for development due to these or other issues.

3.3.1.1 Branford

The PZC may reject a subdivision proposal if it finds the land to be “unsuitable in its present condition for building purposes because of flooding, inadequate drainage, steep slopes, depth to bedrock, erodible soils, utility easements or similar features that might pose a threat to the public

¹¹⁵⁰ Cal. Gov’t Code § 66000.

¹¹⁵¹ John G. Rappa, *Development Impact Fees*, Conn. Office of Legal Rsch. No. 2002-R-0582 (Aug. 5, 2002).

¹¹⁵² See John G. Rappa, *Case Law Regarding Development Impact Fees*, Conn. Office of Legal Rsch. No. 2002-R-0902 (Nov. 26, 2002).

health, safety or welfare.”¹¹⁵³ The subdivider must make adequate provisions to mitigate the unsuitable condition before the Commission can approve the subdivision.¹¹⁵⁴

3.3.1.2 Bridgeport

While it has a Flood Damage Prevention Ordinance,¹¹⁵⁵ Bridgeport has not established provisions pertaining to the suitability of building lots.

3.3.1.3 East Haven

East Haven requires that subdivisions in areas of special flood hazard “be located and designed to be consistent with the need to minimize flood damage.”¹¹⁵⁶ Any lot “found to be unsuitable for occupancy and/or building” due to water, flooding, or other conditions must either be combined with a suitable, contiguous lot or marked “This is not an approved lot” on the subdivision map until it is made suitable and approved by the Commission.¹¹⁵⁷

3.3.1.4 Fairfield

Fairfield has not adopted authority specifically providing for rejection of lots due to unsuitability.

3.3.1.5 Guilford

Guilford has adopted authority similar to East Haven in its subdivision regulations requiring unsuitable lots to be improved or combined with suitable lots. A grading plan is required before approval, and proposed lots “shall be designed and arranged to make best use of the natural terrain, avoiding unnecessary regrading, and to preserve substantial trees, woods and inland wetlands.”¹¹⁵⁸

3.3.1.6 Madison

Madison requires that “[a]ll land to be subdivided shall be of such character that each lot intended to be used for residence in such subdivision can be used for residential building purposes without danger to health. Land subject to flooding or with inadequate means of potable water supply and of sanitary sewage disposal shall not be subdivided for residential purposes.”¹¹⁵⁹

3.3.1.7 Milford

Milford prohibits subdivision of land that “in its natural state . . . is unsuitable for occupancy of building purposes because of danger to the public health, safety and welfare by reason of . . . flooding conditions, erosion hazards, . . . or other similar conditions.”¹¹⁶⁰ The Final Subdivision Plan must identify such areas as “Protection Areas” unless the hazard is corrected and approved by municipal authorities.¹¹⁶¹

¹¹⁵³ *Branford Subd. Regs.* § 3.01.

¹¹⁵⁴ *Id.* §3.01.

¹¹⁵⁵ *Bridgeport Code* § 15.44.

¹¹⁵⁶ *East Haven Subd. Regs.* § 7.1.

¹¹⁵⁷ *Id.* § 7.2.

¹¹⁵⁸ *Guilford Code* § 272-31.

¹¹⁵⁹ *Madison Zoning & Subd. Regs.* § II-3.1.

¹¹⁶⁰ *Milford Subd. Regs.* § 3.2.

¹¹⁶¹ *Id.* § 3.2.

In addition, proposed building lots must be “designed and arranged to make best use of the natural terrain, avoiding unnecessary re-grading, to protect the natural environment, to preserve the natural amenities such as waterbodies, watercourses, and vegetation, and generally adhere to recognized conservation design guidelines.”¹¹⁶²

3.3.1.8 New Haven

New Haven has not restricted approval of proposed building lots based on environmental hazards.

3.3.1.9 Stratford

Stratford requires that proposed building lots have “such shape, size, location, topography and character that buildings can be reasonably constructed and that they can be occupied and used for building purposes without danger to the health and safety of the occupants and the public.” Lots found to be unsuitable due to “water or flooding conditions” or for other reasons must be combined with another suitable lot, added to an open space area, or marked “This is not an approved lot” on the subdivision map until improved and by the Commission.¹¹⁶³

3.3.1.10 West Haven

West Haven has not restricted approval of proposed building lots based on environmental hazards.

3.3.1.11 Summary of Suitability for Building

Municipalities differ in terms of whether they have limitations on development based on lot suitability; the terms of suitability; and the consequences of an unsuitability finding.

- Some municipalities have not adopted unsuitability requirements at all; these municipalities are generally in urban areas where subdivision activity is less common. In areas with substantial subdivision regulations, suitability findings are common.
- Hazards that may result in an unsuitability finding commonly include flooding, and less often erosion. Coastal hazards are not included in explicit lists of hazards that may render a proposed lot unsuitable in any municipality in the study area.
- In most locations, lots determined to be unsuitable must be corrected, combined with other suitable lots, or left in an unbuilt condition. In one case—Madison—land unsuitable due to flooding cannot be subdivided.

3.3.2 Defining Flood-Prone Areas

Municipal land use authorities require property owners to comply with special building standards in SFHAs. These areas are generally defined by FEMA classifications shown on the Flood Insurance Rate Maps (FIRMs) created as part of the Flood Insurance Study (FIS) for a given locality. FEMA’s defined SFHA includes Zone A (areas within the 100-year floodplain) and Zone V (velocity, i.e., coastal areas subject to wave action). The enhanced building standards increase the resiliency of subject developments to periodic flooding and storm surge, mitigating the damage these events may cause.

¹¹⁶² *Id.*

¹¹⁶³ *Stratford Subd. Regs.* § 3.2.1.

Municipalities can enhance their coastal resiliency in the near and long term by requiring all development in areas reasonably expected to be subject to flooding to comply with the enhanced standards. They may accomplish this by including higher-elevation properties—“non-special flood hazard areas” (Zones B, C, and X), as defined by FEMA—in the defined SFHA. These higher-elevation areas may not now be required to obtain flood insurance, but they may nonetheless be vulnerable due to sea level rise and underestimation of current flood vulnerability by FEMA. In practice, however, every municipality in the study area has defined its SFHA to correspond to FIRM zones A (100-year floodplain), AE (100-year floodplain with base flood elevation (BFE) defined), and VE (velocity with BFE defined). While all also have particular building standards applicable in CHHAs (Zone VE), none has additional standards relevant to buildings or other structures in lower-risk zones.

3.3.3 Enhanced Building Requirements

Building requirements in the coastal zone play a critical role in coastal resiliency, reducing both hazards to human life and casualty losses associated with flood events. While a full comparison of all flood hazard mitigation requirements is beyond the scope of this report’s scope, we include a comparison of building elevation requirements, which serve a key role by establishing minimum standards for vulnerability to 100-year floods. Municipalities can increase resiliency in coastal areas by incorporating “freeboard” into elevation requirements to ensure a margin of safety between anticipated 100-year flood BFE and building floors.

In general, elevation requirements differ in different FIRM zones (A versus V zones), with A zones requiring elevation of the lowest living floor to or above the BFE and V zones requiring elevation of the lowest supporting member to at or above the BFE for residential construction. Non-residential construction has lesser elevation requirements, such that floodproofing but not elevation is required up to the BFE. The following table shows deviations from these standards on a municipality-by-municipality level.

Table 7. Freeboard requirements by municipality.

Municipality	Applicable Zone	Freeboard/floodproofing required above BFE
Branford	A, AE, VE	1 foot (Branford Code §§ 161-18, 161-19).
Bridgeport		--
East Haven		--
Fairfield		--
Guilford		--
Madison		--
Milford		--
New Haven	A, AE, VE	1 foot (New Haven Code Tit. IV § 5.3)
Stratford	VE	1 foot (Stratford Code § 102-19)
West Haven		--

3.3.4 Stormwater and Low-Impact Development

Property development can substantially alter the ability of floodplains to absorb flood waters, resulting in increased surface flows and velocities, particularly where stormwater sewer facilities and infrastructure are not designed to carry water associated with intense storm events. Municipal stormwater management policies, and particularly policies calling for or requiring low-impact development or supporting the use of green infrastructure, can increase permeability, reduce strain on storm sewer systems, and lessen flood hazards.

This section reviews low-impact development provisions incorporated into municipal ordinances and zoning regulations. It does not substantially address soil erosion and sediment control (SESC) requirements, as these are primarily focused on mitigating sediment outfall for pollution control rather than serving a resiliency or flood management function. In addition, specific provisions related to mandatory stormwater sewer functions incorporated into transportation infrastructure are addressed separately below.

3.3.4.1 Branford

Branford requires compliance with low-impact development requirements through its zoning regulations. These requirements are intended “to encourage development proposals to address drainage and stormwater issues related to new development and to incorporate Low Impact Development (LID) planning and design approaches in Branford.”¹¹⁶⁴ The goals of LID are defined as:

1. Increase the ability of a developed site to effectively emulate pre-development hydrologic conditions, including without limitation, stormwater retention and detention, water quality treatment, and infiltration functions;
2. Minimize overland stormwater runoff from a developed site;
3. Maximize the retention of trees, native vegetation, understory plants, and native soils;
4. Minimize soil disturbance;
5. Minimize the conversion of site surfaces from vegetated to non-vegetated surfaces; and
6. Maximize the quantity and use of appropriate native plants onsite.¹¹⁶⁵

LID requirements apply only to uses requiring a site plan or a special exception. Site plans must include measures for stormwater runoff management if they are for commercial or industrial development; most residential development over three acres; developments proposing more than 50% impervious cover; or where otherwise required by the PZC.¹¹⁶⁶

The regulations call for maximum infiltration to the groundwater and minimization of runoff amounts and velocities, including through the use of green infrastructure (grass- or rock-lined channels, rain gardens, dry wells, e.g.).¹¹⁶⁷ When required, stormwater retention and controlled release systems must meet general standards in compliance with the Connecticut Guidelines for

¹¹⁶⁴ *Branford Zoning Regs.* § 6.9.A

¹¹⁶⁵ *Id.*

¹¹⁶⁶ *Id.* § 6.9.C.

¹¹⁶⁷ *Id.* § 6.9.D.

Soil Erosion and Sediment Control and based on the CTDOT Drainage Manual.¹¹⁶⁸ Systems must be designed to not result in increases in peak flow from storms up to a 100-year frequency, and detention volume must be adequate to hold a 25-year storm.¹¹⁶⁹ The systems must also meet related performance standards and conduct periodic maintenance.¹¹⁷⁰

Branford has further incorporated LID into its subdivision regulations.¹¹⁷¹ In these developments, storm drainage facilities must be designed and constructed to avoid or prevent increased runoff in volume or concentration and meet other performance requirements, based on a pre- and post-development analysis of runoff under storm events up to a 100-year frequency.¹¹⁷² Street drainage structures must be designed to accommodate a 25-year storm and culverts, bridges, and detention/retention basins a 100-year storm.¹¹⁷³

3.3.4.2 Bridgeport

Bridgeport requires that “activities with the potential for stormwater impacts shall be controlled by the City of Bridgeport’s official Stormwater Management Manual, as updated from time to time” by the City Engineering Department.¹¹⁷⁴ The manual includes a wide range of specifications, including disallowing any increase in peak flow under any conditions and a minimum “10% decrease in the volume of storm water runoff and post development peak flow rate from the site” under design storm frequencies that differ by district.¹¹⁷⁵

Table 8. Peak flow design storm frequencies by district.

Project Type	Design Storms
Single Residential	2-, 10-year
Multi Residential	2-, 10-, 25-year
Commercial Districts	2-, 10-, 25-, 50-year
Industrial Parks	2-, 10-, 25-, 50-year

The Bridgeport manual also calls for flow control so as not to result in upstream or downstream flooding through on-site infiltration or other on-site retention techniques, including other on-site retention techniques (such as pervious pavement, green roofs, planters, swales, and other surface vegetated facilities).¹¹⁷⁶ Additional flow control requirements may apply in flood-prone areas. The manual also includes provisions for stormwater management plans demonstrating that these and

¹¹⁶⁸ *Branford Zoning Regs.* § 6.9.E.

¹¹⁶⁹ *Id.*

¹¹⁷⁰ *Id.* §§ 6.9.F, 6.9.G.

¹¹⁷¹ *Branford Subd. Regs.* § 4.06.

¹¹⁷² *Id.*

¹¹⁷³ *Id.*

¹¹⁷⁴ *Bridgeport Zoning Regs.* § 4-13.

¹¹⁷⁵ City of Bridgeport Dep’t of Public Facilities, Storm Water Management Manual § 7 (2008).

¹¹⁷⁶ *Id.* § 8(B).

other standards are met.¹¹⁷⁷ The manual is currently under revision and may include additional design and maintenance requirements specific to developments incorporating green infrastructure.

3.3.4.3 East Haven

East Haven has adopted stormwater management regulations that require submission of a stormwater management plan by “any applicant, seeking an approval on a site plan, subdivision, re-subdivision, special exception, coastal site plan review and/or inland/wetland permit” for a project that: will disturb 5 or more acres; proposes one or more acres of impervious cover; is commercial or industrial; or is otherwise required by the PZC.¹¹⁷⁸

Plans must contain specific information¹¹⁷⁹ and are reviewed for consistency with criteria such as: prohibition of direct channeling of stormwater into ground or surface water; no net increase in urban stormwater runoff; and retention of the first inch of rain on site.¹¹⁸⁰ Green infrastructure is explicitly supported for on-site retention and reduction in velocity, including through depressions, grass swales, infiltration trenches, ponds, vegetative filter zones, and stream and wetland buffers.¹¹⁸¹ Developments must also adopt LID standards and techniques to the maximum extent feasible, as outlined in the state Stormwater Quality Manual.¹¹⁸²

3.3.4.4 Fairfield

Fairfield has not created specific stormwater requirements or LID in its zoning regulations beyond requirements to specify storm drains in site plans and in certain limited instances—notably, in that parking must comply with the state stormwater manual and encourage LID techniques.¹¹⁸³ The town subdivision regulations do include specifications for storm sewer systems, as discussed below, but they also do not specify the use of LID techniques.

3.3.4.5 Guilford

Guilford’s zoning and subdivision regulations contain several provisions to increase the permeability of land and reduce stormwater runoff, including for impervious cover, stormwater management plans, and the use of LID techniques.

It has created “limits on the development of impervious surface” in the town through creation of a zoning overlay called Vulnerable Local Watersheds.¹¹⁸⁴ As defined by regulation, “[a] Vulnerable Local Watershed is a watershed area, which at projected buildout, will be at a density of development in terms of impervious surface which is considered harmful to the waters of the Town of Guilford and Long Island Sound.”¹¹⁸⁵ LID techniques are required in vulnerable local watershed

¹¹⁷⁷ *Id.* § 11.

¹¹⁷⁸ *East Haven Zoning Regs.* § 48.3.

¹¹⁷⁹ *Id.* § 48.5.

¹¹⁸⁰ *Id.* § 48.7.

¹¹⁸¹ *Id.*

¹¹⁸² *Id.* § 48.7.10.

¹¹⁸³ *Fairfield Zoning Regs.* § 28.10.

¹¹⁸⁴ *Guilford Zoning Regs.* § 273-48.

¹¹⁸⁵ *Id.* This density is expected to be 10% impervious cover. *Id.*

areas “as recommended by the Environmental Planner and the Town Engineer,” based on federal guidance.¹¹⁸⁶

In addition, lots in different Commercial and Industrial Zone districts are subject to impervious surface limits ranging from a maximum of 40% to 70%. The PZC can waive the relevant impervious cover standard by Special Permit after the submission of an approved stormwater management plan.¹¹⁸⁷

A stormwater management plan consistent with the state stormwater quality manual is required as part of a site plan, coastal site plan, or special permit to manage stormwater, including through the on-site detention and recharge.¹¹⁸⁸ SMPs must include certain information and comply with certain criteria, including to collect, retain, and treat the first inch of rainfall on site through green infrastructure approaches including landscaped depressions, grass swales, infiltration trenches, and basins.¹¹⁸⁹ Best Management Practices must be used to control runoff rates and velocities as provided in the state manual and must be sufficient to demonstrate a zero increase in runoff in a two-year storm compared to pre-development conditions.¹¹⁹⁰

Coastal site plans also specifically require that applicants demonstrate that they have incorporated LID practices into the project.¹¹⁹¹ These practices are required “except to the extent the Commission determines that strict adherence to LID practices is not practical.” Projects also must “minimize the creation of impervious surfaces.”¹¹⁹² To this end, “non-residential uses and zones within the Coastal Area Overlay District” are to allowed to cover 10% less impervious surface than the underlying district unless the Commission waives the limit by special finding based on significant mitigation and incorporation of LID practices.¹¹⁹³

3.3.4.6 *Madison*

Madison regulations include substantial stormwater provisions that specifically recognize the flood control aspects of stormwater management.¹¹⁹⁴ Stormwater management plans are required in all site plans¹¹⁹⁵ and must conform to the state manual.¹¹⁹⁶ Madison subdivision regulations separately require that “an adequate system of storm water drainage shall be provided.”¹¹⁹⁷

All site plans and subdivision plans must be designed to “[p]reserve, or improve upon, pre-development hydrologic conditions, including peak discharge, runoff volume, groundwater recharge and natural drainage paths” after analysis of stormwater runoff up to a 100-year

¹¹⁸⁶ *Id.*

¹¹⁸⁷ *Id.*

¹¹⁸⁸ *Guilford Zoning Regs.* § 273-75(F).

¹¹⁸⁹ *Id.*

¹¹⁹⁰ *Id.*

¹¹⁹¹ *Guilford Subd. Regs.* § 273-191 (L).

¹¹⁹² *Id.*

¹¹⁹³ *Id.* § 273-91(I).

¹¹⁹⁴ *Madison Zoning & Subd. Regs.*, § III-1.

¹¹⁹⁵ *Id.* § I-29.2

¹¹⁹⁶ *Id.* § III-1.

¹¹⁹⁷ *Id.* § II-3.7.

storm.¹¹⁹⁸ Impervious surfaces must be minimized and infiltration maximized, including “to the greatest extent possible” through green infrastructure solutions including vegetated depressions, swales, rain gardens and bioretention, and other vegetated drainageways.¹¹⁹⁹ The first inch of runoff generated by rainfall must be retained on site from areas adjacent to or within 500 feet of salt marshes or tidal estuaries.¹²⁰⁰ The first inch of runoff from impervious surfaces must be collected and treated regardless of location.¹²⁰¹

3.3.4.7 Milford

Milford has minimal requirements for stormwater management in its zoning regulations, but it does include such specifications in its subdivision regulations. These regulations require adequate storm drainage facilities to comply with the city storm water management plan, which in turn requires conformity with the state manual.¹²⁰² Storm drainage facilities also must be designed to additional standards, including for sizing of storm sewers and permission to use swales to carry storm water if there is no flood or erosion hazard.¹²⁰³ No specifications for peak discharge, retention, LID, or design storm for green infrastructure are provided.

3.3.4.8 New Haven

A stormwater management plan is required for “any application for zoning approval (including but not limited to special permit and special exception), coastal site plan review, or an inland wetlands permit” meeting certain criteria, including all properties within the coastal boundary.¹²⁰⁴ Plans must include certain information, be designed to collect, retain, and treat the first inch of rainfall on site, and cannot increase runoff rates and volumes “for various storm events.”¹²⁰⁵ Stormwater runoff is to be controlled by infiltration and detention systems.¹²⁰⁶

3.3.4.9 Stratford

Stormwater management requirements are incorporated into the Stratford zoning regulations provisions on environmental protection.¹²⁰⁷ Where a stormwater management plan is required, it must “provide a design that demonstrates a zero impact to the Town’s storm drainage system, including natural waterway systems.”¹²⁰⁸ Plans must comply with the state manual and at a minimum retain the first inch of rainfall on site and provide zero increase in peak runoff for a 25-year storm and evaluate impacts under 50 and 100-year storms. A design to result in no increase in

¹¹⁹⁸ *Id.* § III-5.1.

¹¹⁹⁹ *Madison Zoning & Subd. Regs.* § III-5.1.

¹²⁰⁰ *Id.* § III-5.1.8.

¹²⁰¹ *Id.* § III-5.1.9.

¹²⁰² *Milford Subd. Regs.* § 3.5; City of Milford, *Stormwater Management Plan: 2015 Annual Report* 5.1 (2015).

¹²⁰³ *Milford Subd. Regs.* § 3.5.1.2.

¹²⁰⁴ *New Haven Code* tit. III § 60(c).

¹²⁰⁵ *Id.*

¹²⁰⁶ *Id.*

¹²⁰⁷ *Stratford Zoning Regs.* § 3.24.

¹²⁰⁸ *Id.*

the peak runoff from a 100-year storm may be required after consultation with the Town Engineer.¹²⁰⁹

Stormwater management plans are required in three specific districts, including waterfront business, coastal industrial, resource conservation districts.¹²¹⁰

3.3.4.10 West Haven

Any development with more than 10,000 square feet of impervious surface must prepare a stormwater management plan that includes drainage calculations for existing and proposed conditions under 25-, 50-, and 100-year storm events.¹²¹¹ Site plans also must show the storm water management system and its effects on receiving pipes and sewers.¹²¹² Two particular types of zones – planned village districts and incentive housing zones also require, independently, a stormwater drainage assessment to show effects of runoff based on a 100-year storm.¹²¹³

3.3.4.11 Summary of Stormwater Management and Low-Impact Development

Municipalities in the study area consistently require some stormwater management practices. While the relevant provisions are similar in many respects—notably, in the requirement that stormwater management be designed in compliance with the state stormwater manual—they also differ in several important ways, including:

- when stormwater management requirements are triggered;
- whether they explicitly require the use of LID techniques;
- the design storm to which they must avoid increased in peak flow;
- the volume of stormwater that must be retained on site; and
- limitations on impervious cover.

3.3.4.11.1 Triggering Events for Stormwater Management

Stormwater management requirements, notably including creation of a stormwater management plan (SMP), apply only in certain cases in most municipalities. Development of a SMP or compliance with stormwater management criteria may be triggered under two scenarios:

- (i) when other required documentation and analysis is required, including site plans, coastal site plans, special permits, or special exceptions; or
- (ii) when the characteristics of a development meet certain criteria, such as square footage, acreage, location in particular zoning districts, or commercial or industrial use.

The municipalities vary widely in both respects. Those triggering stormwater requirements with zoning approvals can do so broadly (as in New Haven) or for particular types of activities, which often do not include all types of approvals. The fewer municipalities with other types of triggers use

¹²⁰⁹ *Id.*

¹²¹⁰ *Id.* §§ 4.4.1, 8.2, 10.1.

¹²¹¹ *West Haven Zoning Regs.* § 60.22.4.

¹²¹² *Id.* § 60.22.1.

¹²¹³ *Id.* §§ 26.2.3; 27.9.3.

them sparingly for larger developments and projects in specific districts; however, waterfront districts are commonly included.

Table 9. Stormwater management plan requirement triggers.

Municipality	Stormwater management required for...					
	Site plan	Coastal site plan	Special exception	Special permit	Inland wetlands permit	Subdivision plan
Branford	Y		Y			
Bridgeport	Any project with potential stormwater impacts					
East Haven	Y	Y	Y		Y	Y
Fairfield						
Guilford	Y	Y		Y		
Madison	Y					Y
Milford						
New Haven	Any project requiring zoning approval					
Stratford	Projects in certain listed zoning districts					
West Haven	Projects with > 10,000 sq. ft. impervious surface Projects in certain listed zoning districts					

3.3.4.11.2 Low-Impact Development Techniques and Green Infrastructure

The characteristics and design criteria required when stormwater management requirements are triggered differ from town to town, including with respect to whether low-impact development techniques are required. In some cases, LID techniques are identified explicitly, whereas others require or encourage the use of green infrastructure techniques without using LID terminology explicitly. Still others include no requirement or policy in favor of green infrastructure techniques.

Table 10. Incorporation of LID and green infrastructure techniques in stormwater management regulations.

Municipality	LID/GI Techniques Incorporated?
Branford	LID explicitly supported
Bridgeport	Green infrastructure supported
East Haven	LID explicitly supported
Fairfield	--
Guilford	LID explicitly supported for vulnerable local watershed districts and coastal site plans
Madison	Green infrastructure supported
Milford	--
New Haven	--
Stratford	--
West Haven	--

3.3.4.11.3 Peak Flow Offset Requirements

Development, particularly when replacing open space, increases the amount of impervious surface and therefore can result in increased stormwater runoff if stormwater management systems are not carefully designed. Whether based on hard (sewer) or green infrastructure, municipalities generally require that stormwater management systems must be designed to prevent increases in the volume and rate of peak flows from storm events. In one case, flows must be reduced. While preventing increases makes sense in cases where open space is converted to development, reductions are likely possible in more urbanized area where impervious cover is ubiquitous; in such cases, reduction may not be difficult to achieve.

The amount of peak flow offset can be limited in a variety of ways. Most commonly, municipalities set different standards for the storm frequency to which stormwater management systems must be designed, as shown below. The specified design storm differs by municipality, from a 2-year to a 100-year storm. Alternatively, some municipalities prohibit increases under any scenario—though often assessments of storm flow are required only up to the 100-year event scenario. As a result, such requirements may not be substantially different in practice from a required 100-year storm offset. Note that assessment requirements differ from offset requirements and only the latter are shown below.

Table 11. Stormwater peak flow offset requirements.

Municipality	Peak flow offset requirement
Branford	No increase from 100-year storm
Bridgeport	No increase under any conditions 10% reduction for some districts up to 50 year storm
East Haven	No increase in “urban” stormwater
Fairfield	--
Guilford	No increase from 2-year storm
Madison	No increase from 100-year storm
Milford	
New Haven	No increase from “various storm events”
Stratford	No increase from 25-year storm Town engineer may require no increase from 50- or 100-year storm
West Haven	--

3.3.4.11.4 Stormwater Retention

In addition to preventing increased peak flows, municipalities often require developers to ensure that a certain amount of stormwater is collected and retained on site. Regulations often call for infiltration to be maximized, while many also or alternatively require the first inch of rainfall to be collected, retained, and treated on site. This first inch is the most likely to be polluted by oils and other pollutants; as a result, this limited retention requirement is unlikely to be intended to provide significant flood management services. However, on-site retention and infiltration can also provide a flood prevention role; in Branford, retention of a 25-year storm is required on site, which will is

likely to substantially reduce the contribution of a development to downstream flooding during moderate to larger storm events.

Table 12. On site stormwater retention requirements.

Municipality	On site retention required
Branford	25-year storm
Bridgeport	1" rainfall; up to 50-year storm
East Haven	1" rainfall
Fairfield	--
Guilford	1" rainfall
Madison	1" rainfall
Milford	--
New Haven	1" rainfall
Stratford	1" rainfall
West Haven	--

3.3.4.11.5 Limits on Impervious Surface

Finally, impervious cover is a key contributor to stormwater runoff. While runoff can be managed through designed systems, the amount of impervious cover can also be explicitly limited for all projects or at different rates in different zoning districts. Municipalities have established different provisions regarding impervious cover. In most cases, no maximum impermeable cover is required by stormwater regulations. However, general commandments to “minimize” impervious cover and “maximize” infiltration are common, if potentially difficult to enforce. In one instance, in Guilford, maximum impermeable surface is specified for specific zoning districts as a function of the percentage of lot size, and these percentages are reduced for properties in proximity to coastal resources—a particularly salient approach for coastal resiliency, particularly in jurisdictions and/or zoning districts in which the density of the built environment is lower. In urban and downtown areas with high density development, such maximums on impervious surface may not be workable.

3.4 Transportation Resiliency

Transportation infrastructure is a critical component of coastal resiliency. This infrastructure includes highways as well as rail, air, and port development. While each of these types of transportation infrastructure is important to resiliency and may incorporate green infrastructure, all but highways are primarily or exclusively governed by federal and/or state authorities rather than by municipalities. As a result, this section focuses on municipal highway authorities and their incorporation of provisions relevant to resiliency.

There are two parallel systems of highways in Connecticut – the state highway system and municipal highway systems. Both are present in coastal areas and therefore important to resiliency efforts. For example, state route 146 connects Branford and Guilford and runs in part along the shoreline. This and other state roads are important primary and secondary connectors, and may include critical means of access to and egress from coastal neighborhoods. Municipal roads make

up the greater part of the transportation infrastructure, including smaller neighborhood roads as well as connectors not taken into the state highway system.

Municipal highways are commonly constructed in accordance with design and construction standards. Municipalities may create their own standards or adopt those set out in manuals as a best practice for particular situations. In some cases, municipalities require adherence to particular standards via ordinance, or town and city engineers may simply follow standards as a matter of practice.

Mandatory or practical application of design standards may be effective for implementation of coastal resiliency projects. Mandatory adherence to standards can ensure that municipalities incorporate resilience activities into road construction, but this system requires identification of best practices as standards, and once adopted the standards may be difficult to change. Green infrastructure approaches to highway design are relatively novel, and innovation and experimentation may be expected and desirable in this context. In this case, the absence of a fixed, mandatory standard may be desirable. However, as designs mature, such as for rain gardens, adoption of mandatory standards will have advantages, including by setting requirements for acceptance of new roadways by the municipality and by ensuring that municipal projects and contractors adhere to emerging best practice.

3.4.1 Highway Stormwater Sewer Capacity

Coastal municipalities can increase resiliency by forward-looking design of highway infrastructure for stormwater management. The capacity of stormwater sewer systems is an important aspect of coastal resiliency, storm sewer systems are called upon as a critical link in drainage systems after inundation caused by storm and flood activity. Inadequate stormwater carriage may not be sufficient to drain water, causing backups and flooding with attendant property damage, erosion, and other adverse impacts. This danger may be exacerbated where development results in increased stormwater flows from land parcels—a topic previously discussed above. While not reprised here, municipalities must recognize the relationship and connections between and among land use practices and stormwater carriage needs.

3.4.1.1 Branford

Branford will accept a highway only if it meets general standards (e.g., width, permanent bounds, and grading), is in accordance with the section drawing on file in the Town Engineer's office, and conforms to specific requirements for design and construction as set out in the ordinances.¹²¹⁴ Storm drain requirements require adherence to state highway requirements but do not set mandatory performance measures or pipe diameter.¹²¹⁵

3.4.1.2 Bridgeport

The city has established minimal requirements for street design (e.g., width of streets),¹²¹⁶ but all other requirements for where and how pavement is to be laid are delegated to the common

¹²¹⁴ *Branford Code* §§ 216-14, -15.

¹²¹⁵ *Id.* § 216-29.

¹²¹⁶ *Bridgeport Code* § 12.08.010.

council,¹²¹⁷ which must refer such matters to the committee on highways for report. The committee may order the city engineer to prepare plans and specifications for requested work on a case-by-case basis.¹²¹⁸ Subdivisions are subject to stormwater management requirements, but these requirements are not supplemented with authority specific to streets.

3.4.1.3 East Haven

East Haven subdivision regulations require that roadway storm drainage facilities be designed to carry a minimum rate of rainfall of two inches per hour, and four inches per hour for culverts under roads at brooks and water courses. The design of all pipe sizes shall give due consideration to the entire drainage area, whether on-site or off-site.¹²¹⁹

3.4.1.4 Fairfield

Storm drainage is required on all streets with more than six lots, or on smaller streets at the discretion of the Town Engineer.¹²²⁰ Storm drains must be designed at minimum for a 25-year storm. The design must consider the potential development impact on stormwater flows from the entire watershed area.¹²²¹ Drains also must result in no net increase in peak flow runoff for a ten year storm. Pipes must be a minimum 15 inches in diameter.¹²²²

3.4.1.5 Guilford

Guilford has created road standards intended to accompany the town subdivision ordinances. These standards apply to new road construction in subdivisions and by the town and include street storm drainage requirements.¹²²³ These requirements stipulate that sewers must be able to carry a ten-year flow and culverts must carry a 50-year flow.¹²²⁴ Drainage pipes must be at least 15 inches in diameter.¹²²⁵ Construction standards are set by default as the standard specifications of the state Department of Transportation, which have been amended in limited respects by the town.¹²²⁶ Additional standards apply to subdivisions, including the ability to carry discharge resulting from anticipated future development.¹²²⁷

3.4.1.6 Milford

Milford requires that subdivisions include “adequate surface and subsurface storm drainage facilities” within subdivisions.¹²²⁸ Flows are to be calculated using the “rational method” or another

¹²¹⁷ *Id.* § 12.08.050.

¹²¹⁸ *Id.* § 12.08.060.

¹²¹⁹ *East Haven Subd. Regs.* § 7.4.1.

¹²²⁰ *Fairfield Subd. Regs.* § 3.4.

¹²²¹ *Id.*

¹²²² *Id.*

¹²²³ *Guilford Code* §§ 241-8, 241-9. The ordinance includes plates, which are not available online.

¹²²⁴ *Id.* § 241-9.

¹²²⁵ *Id.*

¹²²⁶ *Id.* § 241-10.

¹²²⁷ *Id.* §§ 241-14 (subdivisions on A-2 and A-3 highways); 241-16 (scenic roads, which include all roads other than state highways, highways with intensive commercial development, or highways with intensive vehicular traffic, which have one or more criteria as set out in state law).

¹²²⁸ *Milford Subd. Regs.* § 3.5.

generally accepted hydrologic method.¹²²⁹ Storm drains carrying streams must carry a 50-year flood with one foot of freeboard, and the drain design must be evaluated to ensure that a 100-year flood does not create an unsafe condition.¹²³⁰ Other drains must be designed to carry a 10-year flood when full.¹²³¹ Pipes must be no less than 15 inches in diameter for the main run, and 12 inches for lateral drains.¹²³²

3.4.1.7 Madison

Madison's town roadway standards do not specify particular performance characteristics in ordinances or its subdivision regulations.

3.4.1.8 New Haven

The City cannot accept any new street unless its design conforms to the City engineering standards and construction is in accordance with minimum specifications.¹²³³ In addition, all work on roadways and drainage must be in conformance with City engineering standards.¹²³⁴ The City engineer publishes standards.¹²³⁵ CTDOT specifications apply when no relevant City standard has been created.¹²³⁶ New Haven maintains a list of applicable engineering design and construction standards for roadways.¹²³⁷ A variety of these standards are applicable, but pipe diameter is not specified explicitly.

3.4.1.9 Stratford

Stratford cannot construct or accept any new street unless it conforms to specifications.¹²³⁸ These specifications include submission of plans and compliance with general construction requirements (e.g., width, drains, base).¹²³⁹ Additional requirements apply to work within existing rights-of-way.¹²⁴⁰ Stratford has not established minimum drainage standards for stormwater in either its ordinances or subdivision regulations.

3.4.1.10 West Haven

West Haven has established road, storm drain, and sewer design and construction standards by ordinance.¹²⁴¹ These include materials standards and minimum design elements, including for storm drains. These drains are subject to a general requirement that the road "be properly drained and sufficient culverts and catch basins installed"; culverts additionally must be "of sufficient size to

¹²²⁹ *Id.* § 3.5.1.1.

¹²³⁰ *Id.* § 3.5.1.2.

¹²³¹ *Id.* § 3.5.1.3.

¹²³² *Id.* § 3.5.3.

¹²³³ *New Haven Code* tit. III § 27-101.

¹²³⁴ *Id.* § 27-71.

¹²³⁵ *Id.* § 27-101.

¹²³⁶ *Id.* § 27-101.

¹²³⁷ See City of New Haven Eng'g Dep't, *Construction Standard Details – Index Sheet*, at <http://cityofnewhaven.com/Engineering/Construction.asp> (last visited Aug. 31, 2016).

¹²³⁸ *Stratford Code* § 186-1.

¹²³⁹ *Id.* §§ 186-10 - 186-15.

¹²⁴⁰ *Id.* §§ 186-16 – 186-33.

¹²⁴¹ *West Haven Code* § 206-7.

handle a normal maximum amount of water from the area drained” and be at least 15 inches in diameter.¹²⁴²

3.4.1.11 Summary of Highway Stormwater Sewer Capacity

While several municipalities have established mandatory performance requirements for highway storm drainage, these requirements are not uniform, and some municipalities have not developed any performance standards for storm sewers. Where no performance standard exists, the sufficiency of storm sewer systems will be left to the discretion and expertise of the municipality—generally, the Town Engineer—which will review new proposed highway plans and whose approval will be required in order to obtain a permit. This system can work, but leaves open the possibilities that storm sewers may not have consistent carriage ability and/or may not be designed to carry sufficient water.

Incorporation of mandatory performance standards and/or pipe diameter requirements may remove some uncertainty and ensure minimal consistency. These mandatory minimums differ from a 10-year storm in most municipalities to a 25-year storm in one instance, as well as higher standards (50-year storm) for culverts. As flood and storm activity is likely to become more intensive due to climate change, municipalities may increase their resiliency by requiring their storm sewers to carry a larger flow. The incorporation of freeboard and consideration of the safety impacts of larger storms, as required in Milford, may mitigate the impacts of changes in statistical storm flows on sewer design and increase municipal resiliency.

The calculation of the likely flows during storm events will remain critical to the appropriate and adequate design of the sewer system regardless of minimum performance standards. For example, if a developer or municipality underestimates the flow from a ten-year storm, it may not use (or require) a pipe with a diameter large enough to carry the runoff from that storm. Authorities can mitigate the likelihood that flows may be underestimated by specifying how flows are to be calculated. Fairfield, for example, requires calculation of flows over the entire watershed rather than just those flows resulting from a single site. Such provisions may be useful models to ensure that flow calculations consider the full potential flow that may affect a given roadway.

3.4.2 Green Infrastructure in Highway Design

Nonstructural and green infrastructure can reduce the stormwater flows arising from storm effects, and thus provide an important service to storm sewer systems by reducing the amount of water that they may be expected to carry in a given storm event. By incorporating rain gardens and other green infrastructure into highway designs, municipalities can reduce the strain on storm sewer systems (and where present, combined sewers). Green infrastructure allows infiltration, reduces impervious surfaces that lead to surface runoff, and provides other means for mitigating the surface flow of stormwater.

Municipalities can encourage or require the use of green infrastructure in highway design by adopting default rules or design and construction standards. However, in most instances

¹²⁴² *West Haven Code* § 206-7.

municipalities do not explicitly address these emerging practices in their regulation. Without explicit authorization of green infrastructure, uptake of these approaches is likely to be limited, and projects that are proposed or attempted may violate other existing generally applicable highway design standards (e.g., requiring catch basins meeting a particular design). In such municipalities, adoption of green infrastructure would need to either obtain a variance or other required approval or meet all such design parameters even if those parameters fall short of recognized best practice.

3.4.2.1 Branford

Branford has established explicit authority in which it “encourages the use of ‘soft’ (non-structural) stormwater management techniques (such as swales) and other drainage techniques that reduce impervious surfaces and enable infiltration, where appropriate, provided the drainage elements conform to Town Standards.”¹²⁴³ To implement this policy, the PZC “may approve the use of surface retention or detention facilities, swales or ditches for drainage after review by the Town Engineer, provided such measures are designed and constructed to minimize soil erosion and danger to public health or safety.”¹²⁴⁴ Detention and retention basins require documentation of overall flows prior to approval.¹²⁴⁵

3.4.2.2 Bridgeport

Bridgeport does not provide green infrastructure design standards for roadways. Highway design decisions are delegated to the common council’s committee on highways, which may in turn request plans and specifications for particular projects.¹²⁴⁶ This process would allow the Engineer to specify green infrastructure when desired.

3.4.2.3 East Haven

East Haven has not adopted provisions explicitly authorizing or encouraging the use of green infrastructure or other non-structural stormwater mitigation solutions in highway design.

3.4.2.4 Fairfield

Fairfield has not adopted provisions explicitly authorizing or encouraging the use of green infrastructure or other non-structural stormwater mitigation solutions in highway design.

3.4.2.5 Guilford

Guilford has not adopted provisions explicitly authorizing or encouraging the use of green infrastructure or other non-structural stormwater mitigation solutions in highway design.

3.4.2.6 Madison

While site plans and subdivision plans must be designed to “Infiltrate stormwater to the greatest extent possible through the use of vegetated depressions, swales, rain gardens and bioretention, and other vegetated drainageways that convey and hold stormwater and provide for a slow

¹²⁴³ *Branford Subd. Regs.* § 4.06.C.

¹²⁴⁴ *Id.*

¹²⁴⁵ *Id.*

¹²⁴⁶ *Bridgeport Code* §§ 12.08.050; 12.08.060.

recharge to groundwater, where soils permit,”¹²⁴⁷ these requirements are not included explicitly in roadway design requirements.

3.4.2.7 Milford

Milford requires that “[a]dequate surface and subsurface storm drainage facilities” be provided in subdivisions. It explicitly authorizes the use of swales to convey storm water to meet this standard, provided that the Planning and Zoning Board determines that they will not result in flood or erosion hazards or “danger to the public health and safety.”¹²⁴⁸ Swales must be “designed to enhance water quality, provide groundwater recharge, and slow the velocity of runoff.”¹²⁴⁹ Swales can have a maximum depth of three (3) feet and can be no steeper than five feet horizontal to one foot vertical.¹²⁵⁰ The Board can also require installation around swales of “fencing, rip-rap, plantings, or other measures it deems necessary to protect the public health, safety and welfare.”¹²⁵¹

3.4.2.8 New Haven

All work on roadways and drainage must be in conformance with City engineering standards.¹²⁵² New Haven engineering design and construction standards for roadways do include certain green infrastructure elements—notably, pervious sidewalk material.¹²⁵³

3.4.2.9 Stratford

Stratford has not adopted provisions explicitly authorizing or encouraging the use of green infrastructure or other non-structural stormwater mitigation solutions in highway design.

3.4.2.10 West Haven

West Haven design and construction standards do not include details or provisions for green infrastructure.¹²⁵⁴

3.4.2.11 Summary of Green Infrastructure in Highway Design

A minority of municipalities in the study area have adopted authority encouraging (but not requiring) the use of green infrastructure specifically in highway design and construction. Those towns that do have such authority—most notably, Branford and Milford—endorse the use of particular types of green infrastructure, including swales and (in Branford) basins, provided that they do not undermine safety. Incorporation of such explicit authority is likely to increase the adoption of these approaches, and they should assist in overcoming challenges associated with the

¹²⁴⁷ *Madison Subd. Regs.* § 5.1.4.

¹²⁴⁸ *Milford Subd. Regs.* § 3.5.2

¹²⁴⁹ *Id.*

¹²⁵⁰ *Id.*

¹²⁵¹ *Id.*

¹²⁵² *New Haven Code* tit. III § 27-71.

¹²⁵³ See City of New Haven Eng’g Dep’t, *Construction Standard Details – Index Sheet*, at <http://cityofnewhaven.com/Engineering/Construction.asp> (last visited Aug. 31, 2016).

¹²⁵⁴ *West Haven Code* § 206-7.

question of whether those approaches are consistent with other existing design and construction criteria.

Barriers to development of new standards for green infrastructure appear lowest in New Haven, which has delegated authority for standards development to its engineer. Where such detailed standards are included in municipal ordinances or regulations, it may be more difficult to establish a new standard or amend an existing standard.

While this section focuses on highway green infrastructure, these design standards do not apply to green infrastructure built outside of the right-of-way. For example, living shorelines buffers for coastal roadways do not appear to be affected by existing design standards. In addition, municipal green infrastructure endorsement as part of larger subdivision plans are outside the scope of this section.

3.4.3 Highway Elevation

Many roadways in the coastal area are subject to periodic flooding during storm events and, increasingly, regular tidal action. Action to address inundation of, and consequent damage to, highways is in many municipalities a matter of substantial interest and high priority. Elevation of roadways above the current or future BFE can protect highways, and has been identified by the state of Connecticut as a key coastal resilience mechanism.

Roadway elevation is a common part of hazard mitigation and coastal resilience programs and strategies, but is explicitly included in legal authorities related to highway construction or design in only one of the municipalities in the study area. Rather, most municipalities have considered and implemented elevation using the discretion accorded to their engineers and public works departments. The following towns are exceptions to this general rule, creating requirements for elevation:

- Fairfield’s subdivision regulations require that “[t]he center line elevation of the pavement shall be seven and one-half (7.5) feet or higher based on current National Geodetic Vertical Datum of 1929.”¹²⁵⁵
- Guilford requires that subdivision streets must be at “such elevation or shall be suitably protected” to allow emergency access during flooding periods.¹²⁵⁶

While a policy *requiring* elevation of roadways in coastal areas could result in unintended negative consequences (e.g., creating a “bathtub” effect after inundation events if water cannot drain), lesser policy interventions could ensure that elevation and other resilience options are consistently considered. For example, potential authorities could require consideration of elevation for new highway construction or repairs within the coastal area, or a municipality could require its engineer to create a transportation resiliency plan and require construction and repairs to conform to that plan.

¹²⁵⁵ *Fairfield Subd. Regs.* § 3.2.5.

¹²⁵⁶ *Guilford Code* § 272-49 *et seq.*

3.4.4 Highway Abandonment and Decommissioning

Vulnerable highways that are not candidates for elevation or other protection will suffer continuing damage and degradation because of repeated inundation during high tide and storm events. This damage will result in repeated, costly maintenance—which may be a substantial issue for accepted streets for which the municipality has accepted responsibility for perpetual maintenance.

Municipalities may avoid these maintenance costs through two mechanisms. One option is to legally “abandon” a roadway, thereby transferring ownership and responsibility for the roadway to a nongovernmental entity such as a private individual or a civic association. This option may be most appropriate where a road serves as access to only one or a few properties and is not a through thoroughfare.

A second option is to decommission the road by removing it entirely, ceasing maintenance so that it degrades over time, maintaining it only at a lower standard (e.g., gravel rather than tarmac), or restricting the use to non-motorized activities (e.g., greenways or recreational use) so that maintenance is less critical for safety. These approaches may be more appropriate where a highway is not considered critical infrastructure, such as if it is not the sole means of access for properties.

Municipalities can authorize, regulate, or prevent the use of these options through ordinances that identify processes for abandonment or decommissioning of highways.

3.4.4.1 Branford

Branford has not established legal authority creating a procedure or mechanism for abandonment or decommissioning of streets.

3.4.4.2 Bridgeport

The City Council has the power to “discontinue” streets,¹²⁵⁷ however, there is no city ordinance delineating the process by which it may exercise this power.

3.4.4.3 East Haven

East Haven has not established legal authority creating a procedure or mechanism for abandonment or decommissioning of streets.

3.4.4.4 Fairfield

Fairfield has not established legal authority creating a procedure or mechanism for abandonment or decommissioning of streets.

3.4.4.5 Guilford

Guilford has not established legal authority creating a procedure or mechanism for abandonment or decommissioning of streets.

¹²⁵⁷ *Bridgeport Charter* ch.11 § 5.

3.4.4.6 Milford

Milford has not established legal authority creating a procedure or mechanism for abandonment or decommissioning of streets.

3.4.4.7 Madison

Madison has not established legal authority creating a procedure or mechanism for abandonment or decommissioning of streets.

3.4.4.8 New Haven

New Haven has established procedures for abandonment of accepted streets to property owners or developers.¹²⁵⁸ This process requires a petition to the Board of Aldermen, followed analysis and a public hearing by the department of public works. The Board of Aldermen decides petitions after receiving a report from the director of public works.¹²⁵⁹

3.4.4.9 Stratford

Stratford has not established legal authority creating a procedure or mechanism for abandonment or decommissioning of streets.

3.4.4.10 West Haven

A highway or private way may be discontinued after a request submitted to the Director of Planning. The Director obtains advice from other city offices before recommending action to the PZC, which considers the request before forwarding it to the City Council.¹²⁶⁰ The Council holds a public hearing where the request shall be considered and either approved or disapproved.¹²⁶¹

¹²⁵⁸ *New Haven Code* tit. III § 27-181.

¹²⁵⁹ *Id.*

¹²⁶⁰ *West Haven Code* §§ 206-15 – 206-20.

¹²⁶¹ *Id.*

4 Legal, Policy, and Regulatory Opportunities

A regional plan for coastal resiliency in southern Connecticut promotes advanced planning and implementation of forward-looking land use and coastal and inland natural/green infrastructure policies and authorities at the municipal, regional, and state levels. A proactive planning process that integrates legal and policy considerations can overcome challenges that may reduce resiliency and seize opportunities to integrate coastal natural and green infrastructure across the region. Such a process will require a thoughtful consideration of policy options across key areas and at the municipal, regional, and state scales.

This chapter presents and discusses resiliency options and challenges that merit consideration during the planning process. It is organized around the following regional resiliency strategies, which follow directly from the topics covered in Chapter 2:

- Regulating uses of coastal lands;
- Retaining coastal land as open space;
- Mitigating flood hazards in the built environment; and
- Building resilient transportation infrastructure.

Development of a regional plan for coastal resiliency in southern Connecticut will build from best practices within the region, but can also benefit from consideration of experiences and practices from other states and municipalities. This section presents case studies focused on particular approaches to coastal resilience and natural/green infrastructure that will be instructive for southern Connecticut. These case studies are incorporated into the discussion that follows to provide context for specific policy options.

4.1 Coastal Land Use

The Connecticut shoreline is directly impacted by sea level rise and coastal flooding and is a critical component in coastal resiliency. Shorelines are dynamic systems in which erosion and avulsion are natural processes, but these processes are not always welcomed by shoreline property owners or towns—especially as climate change increases the rates of erosion and avulsion. For decades, the response was to armor the shoreline with seawalls, bulkheads, revetments, and other forms of hard infrastructure that rob the coastline of its dynamism and cause or enhance erosion on adjacent or distant properties.

4.1.1 Coastal Zoning Districts

Municipal approaches to the zoning of the coastal area differ substantially; while some jurisdictions have established specific coastal districts, others have not. Some of the districts that do exist are used primarily or exclusively as a tool to implement coastal site plan reviews, while others contain independent provisions enabling or restricting particular uses.

The content and direction of coastal zoning districts depends to a large extent on each municipality's vision and plan for the future of its coastal areas. All municipalities face a dilemma in that shoreline areas are highly valuable real estate that can substantially contribute to the tax base,

but those areas are highly vulnerable to flooding and erosion. This dilemma is most acute in more urbanized areas, where historic areas and downtown districts are often centered on the waterfront. Retaining and even densifying these areas may be not only a primary driver for city budgets but also a primary focus for redevelopment efforts.

All municipalities must navigate between the desire to invigorate their downtown areas and activate their waterfronts and the responsibility to limit vulnerable development. There are several options for handling this dilemma, which may be selected alone or in combination:

- *Option 1:* Erect flood walls or levees to remove highly-valuable areas from the flood zone.
- *Option 2:* Prohibit especially vulnerable uses or require applicants to receive a special permit or exemption for those uses.
- *Option 3:* Create special enhanced building and construction standards for uses in coastal areas.
- *Option 4:* No action.

The first option is to remove particularly high-value areas from the flood zone by erecting levees or other flood protection. This option theoretically would eliminate flooding concerns in most circumstances, and it would eliminate the need for protected properties to obtain flood insurance. On the other hand, this approach is expensive in both capital costs and ongoing maintenance, and it requires substantial participation and support from federal partners for permitting and design of the levee and to update the relevant flood insurance study. This approach may also cause changes to flooding patterns in other locations and will create a high barrier between protected locations and the waterfront, reducing the value of this amenity. Such levees may also fail, with disastrous consequences. This option may therefore be reasonable only in extremely valuable and dense locations.

In other locations, municipalities may wish to consider reducing the exposure of particularly vulnerable land uses to coastal flooding and erosion without prohibiting all uses. For example, hazardous uses or those that may release pollution during flooding (e.g., waste handling facilities) may not be appropriate candidates for location within the coastal zone. To this end, the Coastal Management Act disallows certain facilities within the coastal boundary, including tank farms and other fuel and chemical storage facilities that can reasonably be located inland.¹²⁶² In addition, some municipalities have used their coastal districts to prohibit other uses. Others, however, have not created coastal districts and/or used such districts explicitly to regulate land uses beyond the requirements imposed by state law. Municipalities without existing coastal districts may wish to consider developing one or more new coastal zoning districts or overlays as appropriate for this purpose.

As a related option, municipalities may wish to consider using coastal zoning districts and overlays to require enhanced standards for buildings and structures. While areas in the flood plain are already subject to flood hazard protection requirements (as discussed below), additional or

¹²⁶² Conn. Gen. Stat. § 22a-92(b).

different standards may be desirable (e.g., requiring commercial uses to be elevated with a lower floor used for parking). While this study did not identify any municipalities using coastal zoning in this manner, they could do so in the future.

Finally, municipalities may determine that existing coastal zoning restrictions—in particular, the coastal site review process—offer sufficient regulation of uses in coastal areas. With a strong coastal review process, uses and structures that are not appropriate for a site or that present substantial hazards may not be approved. This option also limits the need for changes to the POCD and zoning regulations that would be required in most cases to implement changes to coastal zoning.

4.1.2 Coastal Site Plan Review

As required by state law, every municipality in the study area has created a coastal site plan review process. These processes differ very little from town to town in either requirements or process. However, there are some differences related to exemptions from coastal site review for sites located very close to the shoreline. The state Coastal Management Act allows municipalities to exempt certain activities from coastal site review, and each municipality has adopted these exemptions. In most cases, the exemptions apply regardless of how close they are to the shore, but a few municipalities have added coastal setback limits on these exemptions. As a result, activities must submit a coastal site plan if they are less than a set number of feet from the shore.

The use of setback limits for coastal site plan review exemptions ensures scrutiny of all activities in the most vulnerable areas along the coastline. Such scrutiny may be important, even for seemingly low-impact activities, due to the ecological sensitivity of the coast, the importance of natural features to flood and erosion control, and the vulnerability of structures located on the water. The downside of a requirement to submit coastal site plans for these otherwise-exempt activities is financial. These limitations will increase the number of coastal site plan reviews required and thus may burden reviewers. In addition, landowners will face increased permitting costs. However, the number of affected properties is likely to be low and the site plans for these activities are likely to be relatively simple. Municipalities that determine that the costs are justified may therefore wish to require submission of coastal site plans for all or a subset of activities within a set distance from the CJL.

4.1.3 Coastal Setbacks

Coastal resiliency efforts can reduce the need for FECS by reducing the extent of coastal development in areas subject to coastal flooding and erosion. Coastal setbacks can reduce the need for coastal protection projects by ensuring space between the shoreline and structures. Setbacks may be consistent with and support the use of coastal natural and green infrastructure, reduce casualty loss, and reduce threats to public safety by ensuring that developments are not placed on the shoreline.

Connecticut has not established mandatory coastal setback requirements through the Coastal Management Act or other mechanisms. As a result, the use of these buffers is a function of municipal ordinances, which differ substantially from town to town. Setbacks rarely exceed 25 feet

from mean high water and often require simply that structures be located landward of the CJL. A few towns have further established setback requirements from critical coastal resources. Where such explicit provisions do not apply, setbacks may be required through the coastal site plan review process; however, these will be required on a case-by-case basis and may not be consistently applied.

Existing setback requirements are roughly consistent with Connecticut's past and legacy development patterns, which will pose a continuing limitation on the ability of the state and municipalities to require greater setbacks. Even where legacy structures are torn down and rebuilt, small lot sizes may not allow the footprint of the rebuilt structure to move substantially landward. Imposition of setback requirements for these properties could eliminate any redevelopment of nonconforming structures, which could raise concerns over takings and limit tax assessment increases if policies do not accommodate such issues through variances or other mechanisms.

The state and/or municipalities could use new or modified authorities to require adequate and appropriate setbacks for new developments and redevelopments. Avenues for strengthening municipal setback requirements may include regional, voluntary efforts to harmonize municipal ordinances, independent amendments to municipal ordinances to introduce or extend setbacks. The state could take action to require minimum coastal setbacks either through amendment of the Coastal Management Act to mandate setbacks or, potentially, through modification of the state Conservation and Development Policies Plan, with which municipal POCDs must conform.

- *Option 1:* Develop consistent minimum setback and/or buffer regulations at the municipal level.
- *Option 2:* Amend Coastal Management Act to mandate setbacks and/or buffers in coastal site plans.
- *Option 3:* Amend state Conservation and Development Policies Plan to require coastal setbacks.
- *Option 4:* Establish coastal buffer requirements by state statute and/or municipal ordinance.
- *Option 5:* No Action

4.1.4 Natural Protective Barriers

While coastal setbacks are likely to reduce both exposure of coastal properties to flood and erosion hazards and to reduce impacts on sensitive coastal ecosystems and landforms, they do so only indirectly. Legal authorities mandating retention of natural protective barriers are a direct means of strengthening protections for such resources, including dunes and coastal vegetation.

While the current Coastal Management Act creates a policy “to preserve the dynamic form and integrity of natural beach systems in order to provide . . . a buffer for coastal flooding and erosion,”¹²⁶³ municipal ordinances and regulations do not consistently and fully meet this policy. Specifically, while alteration of dunes is uniformly prohibited if it would increase flood hazards, this

¹²⁶³ Conn. Gen. Stat. § 22a-92(b)(2)

protection is incomplete and raises factual questions regarding whether removal of a particular dune would increase flood impacts.

Municipalities may wish to both expand the types of natural coastal landforms that are protected and bar their removal under any circumstances. Milford’s requirement to retain “sand dunes, barrier beaches, and other natural protective barriers” may offer a strong local example for such protections. Alternatively, municipalities can extend protection to “coastal resource areas” mentioned in the state Coastal Management Act, which include “tidal wetlands, coastal bluffs and escarpments and beaches and dunes.”¹²⁶⁴

Protection for coastal vegetation may not be included in protections based on landforms. Municipalities may therefore wish to additionally consider explicit protection for coastal vegetation, which serves important functions, including limiting erosion and capturing pollutants. Several municipalities in the study area actively require retention of existing vegetated buffers in coastal areas and/or creation of new buffers. Other municipalities may wish to consider whether adoption of similar vegetation-oriented protections is desirable.

From a state perspective, the Coastal Management Act could be modified to ensure or support consistent protection of all relevant forms of natural protective barriers, including both landforms and vegetation. Actions to achieve these goals could include language mandating inclusion of such protections in zoning regulations and/or requiring coastal site plans to include information on management of vegetated buffers.

4.1.5 Flood and Erosion Control Structures

Connecticut has created legal authorities supporting the use of living shorelines and other non-structural, natural infrastructure approaches to flood and erosion control. Connecticut’s Coastal Management Act promotes nonstructural mitigation measures to address the adverse effects of erosion and sedimentation on coastal land uses, and conversely provides that structural solutions are permissible when “necessary and unavoidable,” such as to protect critical infrastructure, including access roadways.

DEEP currently implements this state policy through case-by-case analysis. The Department has not issued general guidance, general permits for dredge and fill for nonstructural approaches, or used other mechanisms to facilitate permitting of development projects focused on non-structural approaches. However, only the subset of FECS seaward of the CJL are subject to DEEP permitting; municipalities review and approve projects proposed landward of the CJL, albeit after referral to and advisory comments from DEEP. Review and approval by municipal PZCs may be substantially less searching and resource-intensive than that carried out by DEEP, giving project proponents incentives to locate FECS of all kinds entirely landward of the CJL.

Bifurcation of review and approval jurisdiction and the burden associated with DEEP review under current practice creates incentives to design projects to avoid DEEP oversight. Stakeholders may wish to consider whether this incentive structure is effectively achieving the goals set out in the

¹²⁶⁴ Conn. Gen. Stat. § 22a-109.

Coastal Management Act. If not, there may be several approaches to improving operation of this system.

One option for improving implementation is through issuance of DEEP guidance for natural infrastructure project design and permitting. Such guidance might assist municipalities and the regulated community in:

- a) understanding when hard structures are likely to be (dis)approved;
- b) identifying design considerations for development of non-structural and hybrid project proposals;
- c) streamlining and reducing the costs and uncertainty associated with DEEP permitting; and/or
- d) providing a resource to assist municipal authorities when reviewing FECS projects proposed landward of the CJL.

Interviews suggest that Connecticut stakeholders hold divergent opinions regarding the issuance of guidance. Local government and nongovernmental stakeholders consistently indicate a strong desire for streamlining and increasing the predictability of DEEP review, potentially through the issuance of guidance identifying types of non-structural projects or designs that DEEP would find acceptable.¹²⁶⁵ These respondents indicate that DEEP review currently is unpredictable, untimely, and inflexible, leading engineers to submit projects with little understanding of whether they will be approved or what elements DEEP staff may find problematic. These respondents support and see a need for guidance, which could be developed through collaboration between coastal engineers and DEEP staff. Other interviewees suggest that such guidance or general permits would be premature and/or inappropriate because FECS permitting necessarily requires a contextual, site-specific and case-by-case process wherein the department or other authority considers geology, wave action, and other factors as well as the design of the FECS. Developers and property owners might incorrectly apply guidance in cases where it is inapplicable. Resolution of the tension regarding issuance of guidance appears to be needed for the Coastal Management Act to yield outcomes desired by the legislature when enacting the law. A cooperative approach in which DEEP engages with stakeholders may be the most beneficial mechanism for overcoming current disparities.

A second option would be to modify the incentives for placing structures fully landward of the CJL by amending the Coastal Management Act. Such an amendment could require DEEP approval (or allow DEEP to veto) all FECS proposals, regardless of location. This change could result in an approval process for FECS that is consistent across both elevation and municipal boundaries, thereby encouraging placement of FECS, including living shorelines projects, in the locations where they are likely to be most effective and inexpensive rather than where they may avoid regulatory oversight. On the other hand, however, this approach would not address the existing dissatisfaction

¹²⁶⁵ See A.W. Whelchel et al., *Workshop Summary of Findings: Report on Non-Structural and Natural Infrastructure Alternatives: Current Opportunities and Constraints for Connecticut's Coast*, The Nature Conservancy Coastal Resilience Program Publication 15-1, at 13-14 (2015) (noting obstacles to deployment of non-structural approaches including the need for guidance and clarity in DEEP permitting process).

with DEEP permitting, and could in fact exacerbate issues experienced by stakeholders by exposing all FECS projects to DEEP oversight. If so, this change could decrease the number of proposed non-structural FECS projects. As a result, resolution of this baseline conflict may be more likely to yield positive outcomes in the short term than a modification of the Coastal Management Act.

A third option would seek to encourage the development of living shorelines by simplification of the permitting process for dredge and fill. This could entail the issuance of a general permit for certain qualifying projects or through use of certificates of permission for approval of qualifying projects. Interviews suggest that coastal natural/green infrastructure approaches remain relatively novel in Connecticut, such that general permits—and likely certificates of permission—are not yet considered appropriate. On the contrary, full permit processing may currently provide useful opportunities for regulators and engineers together to modify and improve proposals for maximum efficacy. It is likely that maturation of certain categories of living shorelines approaches and practices over time may become regularized, such that the advantages of full permitting are reduced in comparison to the costs to the department and regulated community, such that streamlined processes are both appropriate and desirable. DEEP may wish to consider issuance of criteria for streamlined permitting at that time.

In the interim, a limited number of municipalities and property owners are proposing living shorelines projects, which may result from multiple factors ranging from lack of knowledge and experience to uncertainty in the regulatory process. In this instance, Connecticut may wish to consider whether and how a grant and/or technical assistance program might be appropriate to support development and implementation of living shorelines projects. Such a grant program would likely require dedication of new or repurposed state grant and/or revolving loan funds, but could be offset in part by new or changed user fee requirements associated with other types of FECS.

- *Option 1:* Develop guidance on DEEP permitting of non-structural coastal erosion projects.
- *Option 2:* Amend Coastal Management Act to remove incentives for placement of FECS landward of the CJL.
- *Option 3:* Develop criteria for certain categories of living shorelines projects that may be appropriate for new general permit and/or approval through a certificate of permission.
- *Option 4:* Establish grant and technical assistance program for living shorelines projects.
- *Option 5:* No Action.

4.1.6 Case Study: Maryland Living Shorelines

Maryland has a three-pronged approach to regulating and promoting the use of coastal natural and green infrastructure for erosion control rather than hard stabilization. The Maryland Department of Environment (MDE) regulates the use of erosion protection projects under its tidal wetlands permitting authority. The Critical Areas Commission administers coastal management through municipalities, including regulation and review of coastal site plans. Finally, the Department of Natural Resources (DNR) operates a grant and technical assistance program for living shorelines projects.

4.1.6.1 Erosion Protection Project Regulation

Maryland enacted the Living Shorelines Protection Act of 2008 to require “certain erosion protection projects to include certain nonstructural shoreline stabilization measures” based on a recommendation from the state Commission on Climate Change.¹²⁶⁶ The Act establishes a state policy in favor of the use of nonstructural “living shoreline” erosion control measures wherever technologically and ecologically appropriate.”¹²⁶⁷

The act authorizes any shorefront property owner (including government, corporate, and individual owners) to “make improvements” to protect against erosion.¹²⁶⁸ Improvements must be “nonstructural shoreline stabilization measures that preserve the natural environment” unless they are located in an area MDE deems suitable for hard stabilization or where the owner can demonstrate that nonstructural solutions are not feasible.¹²⁶⁹ Property owners, however, must obtain a license from MDE prior to dredge or fill activity, including for any type of shoreline protection, in an area subject to tidal wetlands regulation.¹²⁷⁰

MDE amended its tidal wetlands regulations in 2013 to implement the Act, after consultation with the DNR.¹²⁷¹ The regulations, among other provisions,

- define key terms;¹²⁷²
- prohibit authorization of structures in certain instances (e.g., where they may adversely affect an adjacent property);
- require consideration of no action or relocation of existing structures prior to installation of erosion control structures;
- provide for mapping of areas appropriate for structural stabilization; and
- provide procedures for applications and waivers.¹²⁷³

In addition, the regulations provide design requirements that apply to any non-structural shoreline stabilization measure, which require proponents to:

1. Allow natural littoral movement of sand along the shore;
2. Minimize erosion and undesirable shoaling;
3. Use materials that are:
 - a. Of adequate size, weight, and strength to function as intended;
 - b. Free of protruding objects, debris, and contaminants; and

¹²⁶⁶ 2008 Maryland Laws ch. 304 (HB 973).

¹²⁶⁷ *Id.*

¹²⁶⁸ Md. Code, Env’t § 16-201 (exempting some activities not including shoreline protection).

¹²⁶⁹ *Id.*

¹²⁷⁰ *Id.* § 16-202.

¹²⁷¹ See Md. Dep’t of Env’t, *Living Shorelines Regulations—Final—Effective 02/04/2013* (showing changes to prior regulations), at <http://mde.maryland.gov/programs/Water/WetlandsandWaterways/Documents/www.mde.state.md.us/assets/document/wetlandswaterways/Living%20Shoreline%20Regulations.Final.Effective%2002-04-13.pdf> (last visited Aug. 31, 2016).

¹²⁷² Code of Md. Regs. § 26.24.01.02.

¹²⁷³ *Id.* § 26.24.04.01

- c. Selected to minimize impacts to water quality and plant, fish, and wildlife habitat;
4. Use backfill material free of litter, refuse, junk, metal, tree stumps, logs, or other unsuitable materials;
5. Prevent damage due to scour; and
6. Minimize grading and other impacts on riparian habitat.¹²⁷⁴

Encroachment into tidal wetlands is allowed only where structurally necessary and supported by a design report or for bulkheads where other strategies are infeasible.¹²⁷⁵

4.1.6.2 Critical Area Program

The Maryland critical area program is based on state coastal zone management legislation similar to the Connecticut Coastal Management Act. It requires, among other things, that municipalities develop programs for land use management in the critical area within 1000 feet of the coast, including mandatory provisions including but not limited to buffer management and submission and review of site plans.¹²⁷⁶ The state Critical Area Commission implements the Act, including through review of site plans. As revised in 2008 in accordance with the Living Shorelines Act,¹²⁷⁷ the Critical Areas Act requires that site plans adhere to a 200-foot buffer from tidal waters and tidal wetlands¹²⁷⁸ and establishes a presumption in favor of nonstructural shoreline stabilization measures.¹²⁷⁹ Buffer management plans are required during wetlands permitting by MDE as well as during site plan review.¹²⁸⁰

4.1.6.3 Shore Erosion Control Assistance

DNR provides technical and grant funding for erosion control structures, including by administering the legislatively-mandated Shore Erosion Control Construction Loan Fund.¹²⁸¹ While not explicitly focused on nonstructural erosion control projects, DNR may provide assistance and up to a 50% direct reimbursement to property owners for such projects carried out under an agreement between DNR and the property owner.¹²⁸² The Department is also reimbursed for provision of technical services provided to a property owner, municipality, or other entity.¹²⁸³

In practice, DNR's shore erosion control program starts with a pre-project meeting where proponents and DNR select from among design options, estimate costs, select funding avenues, coordinate parties, and apply for necessary permits. DNR has implemented project selection criteria to assist in the selection of shore erosion control approaches that are appropriate to

¹²⁷⁴ *Id.* § 26.24.04.01-4.

¹²⁷⁵ *Id.*

¹²⁷⁶ Md. Code, Nat'l Res. § 8-1801 *et seq.*

¹²⁷⁷ 2008 Maryland Laws ch.119 (H.B. 1253).

¹²⁷⁸ Md. Code, Nat'l Res. § 8-1801.10.

¹²⁷⁹ Md. Code, Nat'l Res. § 8-1808.11.

¹²⁸⁰ Code of Md. Regs. § 26.24.04.01-3 (requiring buffer management plan in wetlands permit application); *Id.* § 27.01.09.01-3 (required content for buffer management plans).

¹²⁸¹ Md. Code, Nat'l Res. § 8-1001 – 8-1008.

¹²⁸² *Id.* § 8-1004.1.

¹²⁸³ Code of Md. Regs. § 08.10.01.01.

particular sites. As indicated on the project selection matrix below, the criteria indicate the use of non-structural and hybrid approaches in many cases.

Table 13. Maryland Shore Erosion Control Program project selection criteria

	Creek or Cove	Minor River	Major Tributary	Chesapeake Bay
Water Depth (ft)	1	1 to 2	2 to 4	4 to 15
Fetch (miles)	0.5	1 to 1.5	2 or more	2 or more
Erosion (ft/yr)	2 or less	2 to 4	4 to 8	8 to 20
Wave Energy	Low	Medium	Medium	High
Type	Non-structural: <ul style="list-style-type: none"> • Beach replenishment • Fringe marsh creation • Marshy islands • Coir logs edging and groins 	Hybrid: <ul style="list-style-type: none"> • Marsh fringe with stone groins • Marsh fringe with stone sills • Marsh fringe with stone-breakwaters • Marsh edging with stone • Stabilization of streambanks with vegetation and stone • Stone breakwaters with beach replenishment and appropriate vegetation 		Structural: <ul style="list-style-type: none"> • Bulkheads • Revetments • Stone reinforcing • Pre-cast concrete units
Cost per linear foot	\$100-\$200	\$350-\$400	\$450-\$600	\$500-\$1,500

A recent review of the program by the Federal Highway Administration identified that DNR has completed over 200 projects through this program and, according to this review and DNR reviews, the projects have successfully maintained coastal processes and reversed erosion.¹²⁸⁴

4.2 Open Space

One of the simplest and most effective strategies for coastal resiliency is to avoid development in vulnerable locations through open space preservation. By preserving existing open space in public ownership or under a perpetual easement and providing for the expansion of such protections, municipalities and the region can reduce and mitigate property exposure and casualty losses associated with climate change and storm activity. Conservation has the additional benefit of simplifying the implementation of coastal natural/green infrastructure and other resiliency projects: the fewer property owners, the simpler the project development process can be.

Many municipalities have protected substantial swathes of their shoreline as public parks (e.g., West Haven, Bridgeport) where development cannot occur. Some undeveloped shoreline areas have been sold by private owners and municipalities to the federal government for inclusion in the

¹²⁸⁴ See Fed'l Highway Admin., *Green Infrastructure Techniques for Highway Resilience* (undated), at http://www.fhwa.dot.gov/environment/climate_change/adaptation/ongoing_and_current_research/green_infrastructure/ (last visited Aug. 31, 2016); Bhaskaran Subramanian, *Living Shorelines Projects: Have they Worked in Maryland?* (May 26, 2011), at http://www.mobilebaynep.com/images/uploads/library/Bhaskar_Subramanian_5-26.pdf (last visited Aug. 31, 2016)

Stewart B. McKinney NWR. This option ensures permanent conservation with limited uses still allowed, and it allows landowners, including town governments, to receive one-time payments for their open space assets.

Most municipalities have also established mechanisms to protect lands under private ownership. One option for this is to require minimum set-asides in subdivision and other development proposals and to otherwise encourage open space and cluster developments. These tools are primarily useful in communities with unprotected shoreline open space that provides ongoing opportunities for large-scale subdivision activity along the coast. As few such areas exist, incorporation of these provisions in subdivision regulations is unlikely to have a substantial impact on the conservation of coastal open space in Connecticut.

Financial incentive programs represent a second option for preserving privately-held shoreline open space. None of the municipalities in the study area have established ordinances or zoning regulations to enable the transfer of development rights. These programs do exist in other areas, however, and they offer mechanisms to encourage conservation of highly vulnerable locations while simultaneously promoting transit-oriented or other development in desirable locations. Municipalities may wish to consider the development of such ordinances, both in urban and suburban locations. Such programs are complex and would require substantial work to ensure that the intended markets function as intended. Where adequate demand exists in a receiving area (e.g., transit-oriented development), TDR or similar incentive programs could be used to both preserve existing coastal open space and to convert legacy developed areas into open space, particularly in locations where coastal development is not the primary tax base for the community.

In urban areas and other locations where the shoreline is fully developed under existing zoning, lands are likely to require alternate mechanisms and programs if they are to be brought under public ownership or easements. Urban shoreline properties may be contaminated or have other complications. Development in urban coastal areas is also likely to include central business districts and historic areas where removal of legacy property development presents transactional difficulties and social equity considerations. Municipalities may wish to consider the extent to which they can use redevelopment authorities, brownfields authorities, and similar tools (including TIF authorities) as a mechanism to fund and implement projects that will improve the resiliency of vulnerable urban areas.

Perpetual dedication of open space and developments located in vulnerable areas may both present fiscal challenges to municipalities. Development impact fees provide one option that would allow municipalities to recover the costs associated with developments that are located in high-risk areas and may increase municipal costs. For example, development in a high-risk area could result in a need to build and maintain in perpetuity shoreline flood or erosion control systems (including coastal natural/green infrastructure), maintain new highways to ensure access, and otherwise ensure the ongoing safety of the residences or commercial enterprises in that area. Municipalities are currently barred from charging such fees, and state legislation would be required to enable use of this tool. The state may wish to consider the merits of such an approach; while it may enable funding for maintenance and conservation activities, such fees would increase the costs of new

development in shoreline areas (as well as, potentially, infill development). Limitations on the types and amounts of fees that could be levied could be desired to constrain how and why these fees are used.

Sale of municipality-owned lands for perpetual protection may provide an alternative where liquidity is urgently needed and the alternative is substantial development pressure. Such sales may be made to land trusts, the state, or the federal government for inclusion in the Stewart b. McKinney NWR. This option is not available unless there is a willing and interested buyer, however, and in the case of Federal (and likely, state) purchasers, substantial advance work is required. Municipalities considering land sales may increase their chances of success by contacting relevant land managers as early as possible. With respect to federal sales, the development of the CCP for the McKinney NWR may represent a particularly useful moment for such preliminary discussion.

- *Option 1:* Amend municipal authorities to ensure strong minimum open space dedication requirements and cluster or open space developments.
- *Option 2:* Develop municipal TDR ordinances providing incentives to not develop in areas that are vulnerable and to encourage development in less vulnerable areas.
- *Option 3:* Consider the application of redevelopment and brownfields funding and authorities to remediate vulnerable urban lands and transfer them to low-vulnerability uses.
- *Option 4:* Enact state legislation authorizing the use of development impact fees for coastal development.
- *Option 5:* Explore sale of land to private owners or state or federal governments for perpetual protection.
- *Option 6:* Continue existing policies.

4.2.1 Case Study: TDR in Miami, Florida

Miami, FL has established a Transfer of Development Rights (TDR) Ordinance to encourage the preservation of the city's historic resources for the public's benefit "by creating a process whereby the otherwise unusable *development* rights for historic resources (the sending area) may be converted into an asset that may be sold to a receiving site located within a T-6 transect (high density mixed use district), where a public benefits bonus may be used."¹²⁸⁵ Miami is authorized to create this TDR program through state legislation,¹²⁸⁶ and its program is facilitated by past state judicial decisions clarifying the status of TDR programs with respect to takings, real estate valuation, and tax assessment.¹²⁸⁷

A property is eligible for the TDR program (i.e., in the "sending area") if it is located within "a T4-0 Transect [primarily residential] or higher" and meets criteria for historical significance, including

¹²⁸⁵ MIAMI, FLA. CODE § 23-6.

¹²⁸⁶ Alexis Levanthal, *Preserving Miami: An Evaluation Of Miami's Transferable Development Rights Program*, 24 U. FLA. J.L. & PUB. POL'Y 271, 273-74 (2013), *citing* Fla. Stat. § 163.3177.

¹²⁸⁷ *Id.* at 275-76 ("The Florida courts have recognized that, although TDR are not 'real property,' TDR have real value when applied to a development site. Most importantly, TDR have been upheld as a viable mechanism for diffusing the cost of a land use regulation on a land owner and, in turn, limiting the success of takings challenges." (internal citations omitted)).

but not limited to listing on the national and/or Miami register of historical places as an individual or contributing property or is a qualified “eligible historic resource.”¹²⁸⁸ Non-contributing property within the Miami Modern/Biscayne Boulevard (MiMo) historical district is also eligible as a sending area for the TDR program.¹²⁸⁹

Owners of eligible property in the sending area may take advantage of the program to sell their unused development rights for development in the receiving area, which includes property in a T-6 transect.¹²⁹⁰ The zoning administrator calculates the unused development potential on these properties, which can be transferred at 100% of the square feet permitted by the underlying transect.¹²⁹¹ The calculation of development rights within the MiMo area for eligible contributing properties is 2.25% per square foot permitted by the underlying district; for non-contributing properties, the rate is 1.75% per square foot permitted by the underlying district.¹²⁹² The zoning administrator issues a certificate of transfer to property owners based on this calculation. T6 property owners can purchase these development rights to access “bonus” square footage that allow the size of their buildings to increase, and record the transaction with the zoning administrator.¹²⁹³

As of 2013, a few certificates of transfer were recorded but no TDR transactions had occurred in Miami.¹²⁹⁴ According to estimates, up to 10 out of 115 identified historic structures had received certificates of transfer as of 2013.¹²⁹⁵ Although the TDR program has not been widely utilized, reviews suggest that it appears to achieve its goal of historic preservation because certificates require a historic preservation covenant independent of the subsequent sale of the development rights.¹²⁹⁶ Quite a few safeguards are put into the ordinance to ensure that the property, once deemed historic, is preserved and protected.¹²⁹⁷ First, the required covenant ensures that the maintenance standards of the building department are followed for forty years. This covenant runs with the land and the Historic and Environmental Preservation Board must be notified upon transfer of ownership.¹²⁹⁸ Additionally, any additions, modifications, or other renovations on a historical property must be permitted by the Board. Also, the ordinance prevents “demolition by neglect” by an owner of a property in a sending district.¹²⁹⁹

The lack of a market for the transfer of the eligible and recorded rights may inhibit the ongoing success of the program. A review of the program suggests that the lack of market transactions may arise from several factors. As the development rights amount depends upon the square footage of

¹²⁸⁸ MIAMI, FLA. CODE § 23-6(1). “Eligible historic resources” must meet additional criteria for age, physical integrity, craftsmanship, and historical relationship or importance to its neighborhood. *Id.* § 23-6(4).

¹²⁸⁹ *Id.* § 23-6(2).

¹²⁹⁰ *Id.*

¹²⁹¹ *Id.* § 23-6(7).

¹²⁹² *Id.* § 23-6(2)(b).

¹²⁹³ See Levantthal, *supra* note 1286, at 285-86 (illustrating with example).

¹²⁹⁴ *Id.* at 291.

¹²⁹⁵ *Id.* at 286.

¹²⁹⁶ *Id.* at 288.

¹²⁹⁷ *Id.*

¹²⁹⁸ Levantthal, *supra* note 1286, at 288.

¹²⁹⁹ *Id.*

the historical property, the low level of available TDR certificates may limit the value of the program to developers. And the TDR program may involve administrative difficulties, especially where multiple transactions may be needed to obtain sufficient square footage for a desired development. Second, the TDR program may suffer from a mismatch between the incentive provided by TDR (i.e., increased square footage) and the market demand. There already exists a sizeable market for luxury estates in Miami,¹³⁰⁰ such that developers are seeking increased density and affordable housing as opposed to larger properties.¹³⁰¹ Miami's TDR program cannot provide density bonuses or other forms of incentives that might support these market demands.

In order to help facilitate the transaction of TDRs, a review suggests that one possible route is to create a TDR bank.¹³⁰² This bank would be a third party operated by a local or regional governmental body or a private non-profit organization.¹³⁰³ A bank would facilitate contact and transactions between potential sellers of development rights and buyers.¹³⁰⁴ Owners in sending districts can sell their rights and those rights can sit in a "vault" until a buyer in a receiving district purchases the development right.¹³⁰⁵

Although the TDR program in Chapter 23 of Miami's zoning regulations has not been used extensively, another form of TDR has occurred in Miami for the past couple of years – the sale of air rights.¹³⁰⁶ This is the sale of unused square footage from one or two story buildings to developers of high rises.¹³⁰⁷ In 2014, 18 of these sales occurred allowing some neglected, one- and two-story hotels in the MiMo district to sell air rights to high-rise residential tower developers, using the funds to renovate their historic buildings.¹³⁰⁸

4.3 Flood Hazard Mitigation

Flood damage mitigation requirements are ubiquitous across the ten municipalities in the study area. In most instances, municipal requirements echo the minimum requirements necessary for a community to participate in the NFIP. Municipalities can exceed these minima, and in some cases the towns and cities in the study area have done so. For example, some municipalities require that residences be elevated to one foot above the BFE, rather than simply to the BFE as minimally required.

The ability to exceed the minimum requirements for participation in the NFIP opens up a range of potential policy options that municipalities can consider to increase their resiliency. These can be divided into the following categories:

¹³⁰⁰ *Id.* at 287.

¹³⁰¹ *Id.*

¹³⁰² *Id.* at 290.

¹³⁰³ Levanthal, *supra* note 1286, at 290-91.

¹³⁰⁴ *Id.* at 291.

¹³⁰⁵ *Id.*

¹³⁰⁶ Lidia Dinkova, *Air Rights Sales Soaring*, MIAMI TODAY, December 3, 2014, at <http://www.miamitodaynews.com/2014/12/03/air-rights-sales-soaring/> (last visited Aug. 31, 2016).

¹³⁰⁷ *Id.*

¹³⁰⁸ *Id.*

- Preventing construction on lands subject to flooding and erosion;
- Expanding geographic areas where construction must meet flood standards; and
- Requiring construction to comply with heightened building requirements.

4.3.1 Suitability for Building

Determination of where buildings can be placed—and restricting building in areas subject to inundation or erosion risks in long-term projections—is a primary method for decreasing flood hazard risks in a community. Many of the municipalities in the study area prohibit building on lots that are deemed unsuitable due to hazards including flooding and, in some cases, erosion. These limitations apply to new subdivisions and thus are primarily applicable in towns with continuing green space development potential—a rarity along the shoreline. As these conditions may rarely apply, these provisions are unlikely to be useful in the most common scenarios for coastal development (e.g., teardown and rebuild).

Municipalities and the region as a whole may wish to support expansion and standardization of building lot suitability requirements. Municipalities without suitability requirements may benefit from creating such requirements, which could potentially be written to apply to infill development as well as subdivisions to ensure that they are useful in practice along the shore. In addition, municipalities could consider explicitly incorporating erosion risk and projected future hazards as reasons supporting an unsuitability finding.

In weighing the retention, expansion, and alteration of suitability determinations, municipalities may wish to consider the potential legal issues associated with prohibitions on development. If not carefully delineated and implemented, limitations on where buildings can be placed that result in an inability to build on a property could result in a judicial challenge under a takings theory. As currently deployed, municipalities have not faced such challenges, in part due to provisions allowing construction if the hazard is removed. Similar provisions could enable construction in coastal areas that are protected by living shorelines or other natural/green infrastructure solutions designed to mitigate erosion or flood risks.

- *Option 1:* Modify municipal ordinances to require review of building lots for suitability in all municipalities.
- *Option 2:* Expand new and proposed suitability analysis to include coastal erosion and projections that consider sea level rise and other climate-related hazards.
- *Option 3:* No action.

4.3.2 Defining Flood-Prone Areas

One method for increasing the resiliency of the built environment is to expand the geographic area that is included in the SFHA and/or CHHA. New and substantially renovated structures in these zones must comply with the enhanced building requirements established by the town, including elevation or flood-proofing structures, anchoring foundations, and designing breakaway walls. As a result, expansion of these zones can enhance resiliency in the expanded area.

The minimum geographic area for these zones is set based on FIRMs and includes A, AE, and V zones for SFHAs and V zones for CHHAs. All of the municipalities in the study area use these default zone designations. However, FEMA designates flood zones on the basis of historical studies of flooding during past flood and storm events. The resulting zones are conservative, based on historic data rather than projections, and underestimate current and future flood risk. This retrospective analysis does not fully account for projected sea level rise, and structures may have a higher actual flood risk than indicated on the FIRM. Structures at high risk of flooding in the future despite having little past history of inundation are unlikely to be covered by flood insurance. These structures therefore present a risk of casualty loss to homeowners and coastal communities, as well as a risk of harm to inhabitants during storm events—particularly in areas that may be subject to storm velocities (wind and wave impacts) but which are not required to be built to withstand such impacts.

The risks associated with conservative flood zone definitions may warrant intervention at the municipal, state, and/or federal level. FEMA could address the issue through modification of its methodology and subsequent modification of its FIRMs for southern Connecticut. Such a systemic change would provide a global solution, but has proven difficult to implement in recent years.

State legislation could similarly address the issue across the entire region. A state-led approach could potentially avoid market impacts from town to town caused by differential municipal standards. Statewide legislation could also promote a regional, rather than a piecemeal, approach to flood zone reform. On the other hand, state action may be politically difficult and would insert the state in an area (flood zone construction standards) that it currently leaves largely to the federal government and municipalities. While not currently regulating flood zone construction, however, Connecticut has established uniform statewide building standards. Flood zone requirements (e.g., establishment of minimum freeboard requirements) could be incorporated into the existing building code framework.

Alternatively or in addition, the state could redefine the flood zone based on projected baselines for sea level rise rather than historical storm risk. Connecticut has adopted NOAA-generated sea level risk projections into state law in numerous contexts, including hazard mitigation planning, state and municipal plans of conservation and development, civil preparedness planning, the Long Island Sound Blue Plan, and DEEP water quality projects.¹³⁰⁹ These requirements have been applied to both state and municipal processes and similar or the same language could be used to set a standard definition of the flood zone in the state. Care would be needed to ensure that such a definition does not cause conflict with federal requirements, but could ensure that construction in coastal areas is based in a realistic risk profile.

Finally, municipalities can independently reduce their exposure to flood risk by amending existing flood zone ordinances. These ordinances currently define the SFHA and CHHA for each municipality. These definitions can be modified by changing the zones included in each definition.

¹³⁰⁹ Conn. Gen. Stat. §§ 8-23 (municipal POCD); 16a-27(h) (state POCD); 22a-92 – 93 (defining “rise in sea level” for coastal planning); 22a-478 (water quality project priority determination); 25-157t (Blue Plan); 25-680 (municipal evacuation or hazard mitigation plans); 28-5 (state civil preparedness plan).

These amendments could redefine SFHAs to include additional zones (e.g., B or C Zones) and/or redefine CHHAs to include A Zones. These changes could increase construction costs but would not affect flood insurance requirements or other types of costs, and casualty losses in the event of a disaster would be dramatically reduced.

- *Option 1:* Modify municipal ordinances to define the SFHA to include B zones, thereby requiring new construction and substantial renovation in B zones to meet specific construction standards currently applicable in A zones.
- *Option 2:* Modify municipal ordinances to require new construction and substantial renovation in A zones to comply with specific standards for CHHAs, with or without allowance for exceptions in locations unlikely to be subjected to velocity.
- *Option 3:* Modify state law to require compliance with flood zone requirements in B Zones and/or with CHHA standards in A Zones.
- *Option 4:* Modify FEMA methodologies and update FIRMs to adopt precautionary projections that include enhanced threats posed by sea level rise and coastal flooding.
- *Option 5:* No Action.

4.3.3 Case Study: Old Saybrook Coastal High-Hazard Area

Old Saybrook, CT has increased the resiliency of its built environment by expanding its CHHA to require certain buildings outside the “V” zones to comply with the heightened buildings standards that apply to shoreline properties. The Town is accomplishing this by creating a new “coastal AE zone” bounded by the “Limit of Moderate Wave Action” (LiMWA) delineated on its relevant FIRM.

FEMA has determined that waves higher than 1.5 feet can cause significant damage to structures. However, V zones include only those properties where expected wave action exceeds 3.0 feet. As a result, portions of “A” zones have expected wave heights of between 1.5 and 3.0 feet. FEMA delineates the LiMWA to help property owners and communities better understand the flood risks to their property and to show property owners that, despite living within an AE zone, their property can still be subject to waves capable of causing significant property damage during a 100-year flood event. In addition, communities that adopt VE zones standards in Coastal A zones receive Community Rating System (CRS) credits. Municipal acceptance into the CRS system could lower flood insurance premiums by 5% to 40% for residents and business owners.

Due to a history of high exposure to coastal flood damage, Old Saybrook was the first town in Connecticut to require coastal A zone construction to meet V zone standards. Under an ordinance that took effect in February, 2013, structures must use Zone VE construction standards if they are within identified coastal AE zones that have been designated a LiMWA area. The Town accomplishes this by defining the “coastal high-hazard area” as:

An area of special flood hazard extending from offshore to the inland limit of a primary frontal dune along an open coast and any other area subject to high-velocity wave action from storms or seismic sources. Coastal high-hazard areas are

designated as Zone VE and Zone AE bounded by a line labeled "Limit of Moderate Wave Action" (LiMWA) on a Flood Insurance Rate Map (FIRM).¹³¹⁰

It also separately defines the Coastal AE Zone as follows:

The portion of the coastal high-hazard area with wave heights between 1.5 feet and 3.0 feet and bounded by a line labeled the "Limit of Moderate Wave Action" (LiMWA) on a Flood Insurance Rate Map (FIRM). VE Zone floodplain construction standards are applied to development, new construction and substantial improvements in the Coastal AE Zone.¹³¹¹

Finally, the specific requirements for development in a CHHA were amended to include the coastal AE zone, as follows: "The following additional standards are applicable to development, including new construction and substantial improvement, in the Zone VE and Zone AE bounded by a line labeled "Limit of Moderate Wave Action" (LiMWA) portion of [SFHAs]."¹³¹²

By requiring properties in the Coastal AE Zone to meet V zone standards, Old Saybrook has helped to provide communities and individuals with a better understanding of how their area might be affected by flooding. The Town also provides a more realistic mapping tool of the different kinds of flooding within certain zones by breaking them down even further and creating a zone that carries greater risks than a typical AE zone. By adhering to the standards of Coastal VE Zones, LiMWA areas are better protected against flooding. Additionally, the entire AE zone is not required to meet stricter standards, nor is an unnecessarily large VE zone created.

4.3.4 Enhanced Building Requirements in Flood Areas

In addition to expanding where construction must comply with flood standards, the risk of flood damage can be mitigated by increasing the stringency of flood standards that apply to new and renovated structures in the SFHA, however defined. These standards currently are established at the municipal level and differ in some respects from town to town. In many cases, the requirements are set at the federally-prescribed minimum. For example, elevation requirements in most municipalities in the study area currently are set at the BFE. In a few locations, municipalities go beyond the minimum, as in the case of the municipalities that have established freeboard requirements requiring structures to be elevated one foot above BFE. Such enhanced building standards are important for reducing the property damage and human toll associated with flood events.

As is the case for flood zone definition, federal minimum requirements are conservative and may not adequately reflect the projected flood impacts arising from climate change. For example, BFE is used as the index for elevation requirements but is based on historical flood levels rather than

¹³¹⁰ OLD SAYBROOK, CONN. CODE § 128-5.

¹³¹¹ *Id.*

¹³¹² *Id.* at § 128-19(D).

projections; thus, freeboard requirements may be more accurate reflections of future flood elevations and may enhance resiliency.

Additionally, building requirements such as increased structural elements can increase resiliency. For example, the Insurance Institute for Building and Home Safety has created the FORTIFIED program, which provides building standards to reduce property damage resulting from hurricanes.¹³¹³ Application of these standards can result in improved roof systems, windows, doors, and anchoring. The FORTIFIED program is designed to be an improvement on minimum building codes, and thus is currently applied by property owners independently or through a certification program, which may reduce losses and may yield reductions in insurance costs. However, the state and municipalities could consider adoption of these or similar standards in the state building code or requirements applicable to construction in CHHAs. Such adoption could be mandatory, which would assure consistent adoption in new construction and substantial renovation. Alternatively or in addition, the state or municipalities could develop incentive programs to encourage voluntary uptake of these existing programs. Incentive programs could take the form of a capital outlay by the government, such as a cost share or property tax offset, or could enable modification of zoning requirements (e.g., lot size) for compliant structures. Either approach would require the development or modification of legal authority, which could include state legislation, municipal ordinances, and/or zoning regulations.

- *Option 1:* Modify federal minimum requirements to reduce flood risk.
- *Option 2:* Modify state building code to require compliance with enhanced construction standards such as those produced by the FORTIFIED program in SFHAs and CHHAs.
- *Option 3:* Modify municipal flood ordinances to require new and renovated structures to meet enhanced construction standards such as those produced by the FORTIFIED program in SFHAs and CHHAs.
- *Option 4:* Develop state or municipal incentives for property owners to incorporate enhanced building standards.
- *Option 5:* No Action

4.3.5 Stormwater and Low-Impact Development

Stormwater management is an important tool for mitigating flood hazards, including in coastal areas. Municipal approaches to stormwater management share some commonalities but also differ in important respects, offering municipalities a number of models to simultaneously increase regional consistency and strengthen resiliency.

The state is an important player in stormwater management under both water pollution control law governing nonpoint source pollution and by the publication of manuals for stormwater management. While this study does not summarize the manual in detail, DEEP and CTDOT may

¹³¹³ See Insurance Institute for Business & Home Safety, *Build Strong. Build FORTIFIED* (2016), at <http://disastersafety.org/fortified/> (last visited Aug. 31, 2016).

wish to consider whether modifications specific to coastal areas are justified and needed in future editions of their stormwater manuals.

Other options to strengthen stormwater management for coastal resiliency across the region are available to municipalities directly, and may be applied alone or in combination. These options include:

- *Option 1:* Ensure that stormwater management requirements apply broadly within coastal areas.
- *Option 2:* Require and explicitly support the use of low-impact development approaches where safe and appropriate.
- *Option 3:* Ensure adequate minimum standards for peak flow, retention, and impervious cover.

Stormwater management requirements generally apply only to a subset of development activities—generally those requiring some form of zoning approval or those larger than minimum thresholds. Municipal triggering standards differ substantially across the study area; while some (e.g., New Haven) apply to any activity requiring zoning approval, other municipalities require stormwater management for smaller subsets of activities, which may or may not cover activities requiring coastal site plan review. Municipalities may wish to consider requiring stormwater management plans more consistently for activities requiring coastal site plan review in order to ensure that these activities do not increase the strain on existing storm sewer systems or contribute to coastal flooding.

Second, municipalities may wish to consider requiring or explicitly supporting the use of low-impact development approaches. Several municipalities do currently incorporate provisions supporting the use of non-structural stormwater techniques to maximize infiltration and minimize runoff. These requirements are descriptive, in part due to the site-specific nature of what LID techniques may be appropriate and how they are best deployed. However, requiring their consideration and use, or simply providing explicit support for these approaches, may provide support to developers and encourage inclusion of natural/green infrastructure in stormwater management plans.

Finally, municipalities may wish to consider whether existing specific standards for stormwater infrastructure are sufficient and appropriate. Municipal design storm requirements differ widely for both peak flows and on-site retention, and municipalities may wish to consider whether to require design to a higher minimum standard would improve resilience during large scale storm events through the full extent of the asset's life cycle. Similarly, impervious surface minimums could work with LID techniques and other forms of natural or green infrastructure to mitigate runoff, increase on-site retention, and provide other services that may mitigate the effects of coastal flooding.

LID requirements and minimum stormwater management design standards both apply most directly to new construction and often are located in subdivision regulations rather than general

zoning regulations. As subdivision activity in the coastal area is limited, these requirements may not substantially impact coastal resiliency as currently implemented. Municipalities therefore may wish to consider whether and how to modify existing standards to cover redevelopment activity as well as new development.

4.4 Transportation Resiliency

Transportation systems are critical to coastal resiliency. State and municipal highway systems alike are subject to periodic inundation in coastal areas and may be damaged or destroyed by sea level rise, erosion, or other hazards. This infrastructure is also essential for access to coastal properties and serves as a means of egress during storm and flood events. If designed or redesigned with resilience in mind, transportation infrastructure can continue to provide access with reduced exposure to inundation, while also providing ancillary benefits related to flood defense and ecosystem services. Resilient approaches include designing highway systems to reduce strain on storm sewer systems; and protecting vulnerable coastal highways from hazards including flooding and erosion. Both of these approaches can include natural and green infrastructure.

Successful implementation of resilient roadway systems requires coordination and planning among municipalities, COGs, and the state Department of Transportation.

- Municipal highway system requirements differ but in general are defined most clearly for new streets laid out in subdivisions, and thus are largely inapplicable in coastal areas with existing infrastructure. In some municipalities, both new and existing roadways must meet generally applicable design standards, which may include green infrastructure approaches.
- The parallel state highway system is managed and maintained by CTDOT, which uses different design and construction criteria which may not match local needs or desires.
- COGs also play an important role if designated as MPOs. MPOs are responsible for developing LRTPs and TIPs used to plan projects that are eligible for federal funding. These activities offer an opportunity to think holistically about the transportation system and proactively address sea level rise, emergency management, and other needs associated with coastal resiliency.

4.4.1 Highways and Stormwater Management

Highway systems are an important element in stormwater management systems. Failure to design highway systems to carry adequate stormwater flows can result in flooding during periodic high tide events or storms. Storm sewers carry stormwater along highway rights-of-way. Green infrastructure approaches, such as swales and rain gardens, can increase permeability along roadways and reduce surface flows that the sewer system must carry.

In many municipalities in the study area, storm sewer capacity requirements are set out in municipal ordinances. These requirements differ from town to town but are generally based on both a minimum diameter specification and a carrying capacity specification, the latter of which is based on statistical storm frequency. The adequacy of these design requirements may be in question under sea level rise scenarios in coastal areas, particularly if storm severity and frequency increase over time. As sewer systems are long-lasting forms of infrastructure, inadequately

specified pipe sizes will remain in place for decades. Therefore, municipalities may wish to ensure that their specifications for new and substantially repaired roadways are adequate to carry projected levels of storm water runoff. CTDOT also may wish to consider whether updates to its design standards are needed, as municipal ordinances do not affect state highways, but often do refer to CTDOT design guidance.

Concerns regarding the adequacy of storm sewer systems may be mitigated by designing roadways to absorb runoff before it enters the sewer system. Natural and green infrastructure solutions provide an important means of reducing peak storm runoff. These solutions may reduce flooding along roadways where sewers cannot handle loads; reduce sewer overflow events; and mitigate impacts on water quality during and after storm events.

Several municipalities have incorporated explicit approval of swales and related natural/green infrastructure approaches and/or requirements for Low-Impact Development into their municipal ordinances or regulations. This indicates that such features are desirable and ensures that their inclusion will not cause issues in permitting or roadway acceptance. This study found, however, that other municipalities—and particularly those where subdivisions are less common—lack such provisions. The state also has not adopted policies favoring these approaches within state rights-of-way. The adoption of policies or legal authority that endorses and/or creates design standards for natural/green infrastructure in roadway rights-of-way may be an important step in the increased implementation of rain gardens, swales, and other types of green infrastructure. Such policies will be most effective where they address both new roadways and renovation of existing roadways in suburban and urban settings where permeability is limited and surface flows may present a continuing challenge. This option would likely require many municipalities to adopt highway standards as generally-applicable ordinances rather than as elements of subdivision regulations, as in the case of New Haven.

In addition to the endorsement of such systems, municipalities and the state may wish to consider whether, and the extent to which, it may be sensible to create design standards for particular natural or green infrastructure projects whose designs are mature and which it is possible to define as a best practice. Once established, subsequent projects could be required to deploy these techniques in compliance with such standards. Other mandatory design provisions are ubiquitous in municipal ordinances, including minimum width requirements and storm sewer capacity requirements. In this light, a requirement to meet natural/green infrastructure requirements to reduce sewer capacity would be in keeping with past practice. Such a requirement could reduce downstream infrastructure costs by allowing the use of smaller pipes and catch basins as well as reduced treatment costs—particularly in locations relying on legacy combined sanitary and storm sewer systems.

On the other hand, mandatory natural/green infrastructure requirements may raise concerns that mandated systems could be unsafe or ineffective in certain situations. Existing municipal ordinances endorsing these approaches address this concern through provisions noting that natural/green infrastructure is supported only where appropriate. Similar language, a design review, or a variance procedure could allay safety fears. A second argument against mandatory

standards may arise if mandated systems result in increased capital or maintenance costs. A thorough life-cycle review of costs avoided (e.g., through reduced sewer treatment needs) and incurred may assist authorities in evaluating whether and how cost concerns should influence their design requirements.

- *Option 1:* Modify municipal and/or state ordinances, regulations, and design standards to ensure that new and reconstructed highways include adequate stormwater carriage capacity under projected future scenarios.
- *Option 2:* Modify municipal and/or state ordinances, regulations, and design standards to endorse the use of natural/green infrastructure approaches such as bioswales and rain gardens.
- *Option 3:* Modify municipal and/or state ordinances, regulations, and design standards to require the use of natural/green infrastructure approaches such as bioswales and rain gardens unless such approaches would be unsafe or otherwise unreasonable.
- *Option 4:* No action.

4.4.2 Protection of Vulnerable Highways

Coastal highways are uniquely vulnerable to inundation as a result of erosion and flooding.

As a function of exposure to wave action, erosion can be addressed not only by hard infrastructure such as seawalls, but also through non-structural approaches such as living shorelines and dune or marsh restoration, which may reduce wave impacts. While hard stabilization may occur solely within the highway right-of-way, natural and green infrastructure approaches will typically extend beyond the right-of-way. This approach could potentially increase a project's complexity, as more authorities and permissions are likely to be needed for a project to proceed.

In Connecticut, most activities seaward of the CJL are controlled by the state rather than municipalities. Municipalities may be limited in their ability to influence or carry out projects in these areas without the support and participation of state agencies. Both seawalls and marsh restoration would likely require permits for fill activity from both DEEP and the Army Corps of Engineers. Projects seeking federal funds through a MPO would also need to be consistent with the applicable TIP and LRTP. As natural and green infrastructure models remain relatively novel, plans may not incorporate these models, and permitting may be difficult in the absence of an applicable general permit from DEEP and/or the Corps. While coastal natural/green infrastructure approaches may be complex, they may nonetheless be highly desirable given the importance of transportation infrastructure and the ancillary benefits and ecosystem services that such projects can provide.

- *Option 1:* Review TIPs and LRTPs for integration of coastal natural/green infrastructure approaches and needs and to identify projects that may be good candidates for coastal natural/green infrastructure approaches.
- *Option 2:* Include coastal natural/green infrastructure approaches for highway resiliency in ongoing revisions of DEEP and USACE general permits for fill, particularly in tidal wetlands.

- *Option 3:* Incorporate natural/green infrastructure and erosion control mechanisms into projects on a case-by-case basis as needed and desired by states and municipalities.
- *Option 4:* No action.

Coastal highways are additionally vulnerable to flooding at high tide and during storm events. Elevation of roadways can protect against overwash now and in years to come, but elevation projects must be planned, designed, and implemented to achieve these goals. Not all highways are suitable for elevation—they may be vulnerable to other forces (e.g., erosion), service too few residences or other critical infrastructure, or carry insufficient traffic to warrant investment in elevation. Where a roadway is vulnerable but does not warrant elevation, it may will over time be subjected to degradation and rising maintenance costs to keep it serviceable. This may pose particular issues for smaller roadways that are the sole access for coastal communities. Municipal and state authorities may need to determine whether and how these roadways should be discontinued or otherwise addressed—e.g., by transfer to neighborhood associations as private roads.

While Connecticut has begun consideration and implementation of roadway elevation in some areas—notably, Bridgeport and Guilford—most municipalities have not developed a considered approach to the evolution of their highway systems. Such consideration may be warranted, both for how existing roadways will be managed in years to come and to ensure that new highways are designed to accommodate future conditions. This planning may be carried out at the municipal, regional, and/or state scale, and ideally will incorporate a range of stakeholders to ensure a wide range of viewpoints. A successful plan of this type may be part of a larger effort, such as the regional plan, or may be tightly focused on transportation. Regardless, results related to transportation can be integrated into TIPs and LRTPs that serve as the basis for federal funding or regional transportation projects.

In addition to planning and policy action, legal interventions may be warranted in some cases, particularly at the municipal level for both elevation and abandonment. Only a single municipality in the study area requires that new highways be elevated within the coastal area. While it is possible that not all roadways can or should be elevated to a minimum level to avoid “bathtub” effects, municipalities may benefit from a consideration of such mandatory elevation requirements for new roadways and/or those subject to substantial construction.

Many municipalities lack formal processes for discontinuance of streets, though some have established procedures for abandonment, which could be used to convey public streets to neighborhood associations. Privatization of public ways may be viewed critically, but such concerns may arise primarily due to potential loss of shoreline access. Municipalities may be able to address these concerns through contracting approaches (e.g., retaining an easement for access) or inclusion of mandatory conditions for abandonment in ordinances. Advantages of abandonment would include shifting maintenance responsibility and costs to the neighborhoods that are most reliant on the roads and allowing those roads to continue without conformity to mandatory roadway standards that apply to public ways.

- *Option 1:* Develop interagency and regional transportation resiliency plan(s) (which may be parts of larger hazard mitigation or resiliency plans), with or without new legislative authority, to consider transportation system vulnerability under future scenarios and identify long-range solutions to ensure continuing, safe access to coastal areas. Incorporate findings into state and regional TIPs and LRTPs.
- *Option 2:* Review municipal subdivision and zoning regulations to ensure that mandated street designs maintain access to key elevated evacuation routes.
- *Option 3:* Review municipal and state highways to identify key evacuation routes and other highways suitable for increased elevation or those that may warrant abandonment or decommissioning in the future. Incorporate these findings into state and regional transportation plans and/or hazard mitigation plans.
- *Option 4:* Amend municipal ordinances and/or state design standards to require elevation of roadways within the coastal area as projected under sea level rise scenarios.
- *Option 5:* Amend municipal ordinances to create processes for abandonment and/or decommissioning of public ways subject to inundation.
- *Option 5:* No action.

4.4.3 Case Study: Louisiana Coastal Highways

Much of Louisiana's transportation infrastructure is vulnerable to flooding, especially flooding induced by storm surges. Louisiana has taken steps to address highway vulnerability at both the state and parish levels.

4.4.3.1 Coastal Master Plan

Following Hurricanes Katrina and Rita, the Louisiana legislature created the Coastal Protection and Restoration Authority (CPRA)¹³¹⁴ and tasked it with, among other things, "develop[ing] a master plan for integrated coastal protection" as well as annual plans, which must identify projects in order of priority.¹³¹⁵ Upon acceptance by the legislature, the CPRA must implement the plan projects in order of priority.¹³¹⁶

The CPRA created the Louisiana Comprehensive Master Plan for a Sustainable Coast (the plan), which is intended to achieve two overall goals:

- "Protection. Use a combination of restoration, nonstructural, and targeted structural measures to provide increased flood protection for all communities;" and
- "Restoration. Use an integrated and synergistic approach to ensure a sustainable and resilient coastal landscape."

The plan identifies a variety of coastal restoration projects that the state will implement over the next 50 years, including six projects that will restore wetlands near or adjacent to vulnerable state highways to provide a protective buffer against encroaching waters. To restore these wetlands, the plan requires hydrologic restoration through conveyance of water to an area that was previously

¹³¹⁴ La. Rev. Stat. § 49:214.1.

¹³¹⁵ *Id.* § 214.5.3.

¹³¹⁶ *Id.*

cut off by man-made levees or other built structures. Other projects within the plan call for wetlands to be reconnected in order to create a more robust natural barrier against flooding and shoreline erosion.

The CPRA is implementing and continuously upgrading the plan with assistance from several advisory groups:

- The Framework Development Team is the primary collaborative group providing insight and counsel to the planning team. It is made up of representatives from federal, state and local governments; NGOs; business and industry; citizens; academia; and coastal communities.
- The Science and Engineering Board “. . . provides independent technical review of plan elements and makes specific recommendations about how the planning team can improve the scientific basis and/or planning elements”
- The Technical Advisory Committees “are small advisory groups made up of nationally known academics and practitioners that offer insight into specific elements of the plan process.
- The CPRA consults with focus groups, which are intended to expand the engagement of key stakeholders and to receive and incorporate their input into the plan.

The state of Louisiana committed to assist in the expeditious implementation of the plans. In addition to the mandate for CPRA to implement the plans, Governor Bobby Jindal issued an executive order requiring all state agencies to “administer their regulatory practices, programs, contracts, grants, and all other function vested in them in a manner consistent with the Master Plan and public interest to the maximum extent possible.”¹³¹⁷ In addition, the State is required to monitor and identify needed legislative actions to ensure that the state regulations and policies are consistent with the master plan.

According to CPRA Chairman Johnny Bradberry, “[a]pproximately 40,000 football fields of land have been rebuilt since 2009 and the list goes on.” To date, CPRA has accomplished:

- Built or improved approximately 250 miles of levees
- Benefited over 25,700 acres of coastal habitat
- Secured approximately \$18 billion in state and federal funding for protection and restoration projects
- Moved over 150 projects into design and construction
- Constructed projects in 20 parishes
- Constructed 45 miles of barrier islands and berms

The CPRA is currently in the process of a five-year revision and re-release of its Coastal Master Plan, with a new plan expected in 2017. The continued investment in the master plan suggests that the

¹³¹⁷ Exec. Order No. BJ 2008-7 (2008).

state views the coastal master plan as a success in directing coastal resiliency projects in a unified manner across the state.

4.4.3.2 *St. Tammany Parish Model Ordinance*

While the state coastal master plan is a project-focused framework, Louisiana local government is considering methods for reducing vulnerability through other legal methods, including by establishing elevation standards for highways.

The St. Tammany parish has adopted a model subdivision ordinance requiring elevation of all new highways to meet a design standard based on historical flooding during Hurricane Gustav.¹³¹⁸ The parish used this evidence to define a mandatory elevation level based on a ten-year storm event. It incorporated the following provision into its subdivision ordinance:

In order to increase resiliency of development in the coastal zone, the minimum elevation for any street as measured at the lowest point of the travel lanes shall be at least 6.0' NAVD'88GEOID 03. No Local Coastal Use Permit in St. Tammany Parish shall be issued for application with roads below this elevation. However, where building roads to at least 6.0' NAVD'88GEOID 03 is infeasible, such as but not limited to transitions to existing roads, the Department of Engineering may waive this requirement.¹³¹⁹

This mandatory minimum applies to all new roads, but not existing roads, and includes waivers for lower elevations and intersections with lower existing roads. While legacy sections of the parish highway system may be subject to flooding, new development is now required to meet this higher standard.

¹³¹⁸ See NOAA Office for Coastal Management, *Peer-to-Peer Case Study: St. Tammany Parish, Louisiana*, at <https://coast.noaa.gov/digitalcoast/training/tammany-parish.html> (last visited Aug. 31, 2016).

¹³¹⁹ *Id.*

5 Conclusion

Development of a regional framework for coastal resilience in southern Connecticut is a challenge requiring the cooperation and collaboration of federal, state, and local governments, the public, and private sector and non-governmental organizations. Only by working together in an interdisciplinary manner can the region surmount the complex challenges associated with resilience.

This report provides legal and regulatory information and analysis to support the development of the regional framework for coastal resilience. It provides an inventory of the relevant federal, state, and municipal authorities relevant to coastal resilience considerations, which can serve as a useful reference for regional stakeholders. In addition, it provides a targeted audit and analysis of coastal resilience opportunities and challenges related to four key areas and 17 topics within these area, as shown in Table 14.

Table 14. Areas of focus for audit and regulatory opportunities analysis.

Area	Topic
Coastal land use	Coastal zoning districts
	Coastal site plan review
	Coastal setbacks
	Natural protective barriers
	Flood and erosion control structures
Open space	Cluster development
	Transferable development rights
	Open space set-asides
	Financial mechanisms
Flood hazard mitigation	Suitability for building
	Defining flood-prone areas
	Enhanced building requirements
	Stormwater and low-impact development
Transportation	Highway stormwater sewer capacity
	Green infrastructure in highway design
	Highway elevation
	Highway abandonment and decommissioning

By focusing on specific topics that are critical for a comprehensive coastal resiliency framework, this report provides a solid foundation for a range of activities that include, but are not limited to:

- identifying areas of focus for jurisdictions seeking to improve coastal resiliency individually or on a regional level;
- comparing legal and regulatory practices on different topics across jurisdictions in the region;
- identifying positive regional models and practices for different coastal resilience elements; and
- developing legal and regulatory strategies to improve resilience within individual jurisdictions or on a state or regional level.

These activities are important steps for integration of legal and regulatory elements into the regional framework for coastal resilience. By incorporating the findings and considering the options set out in this report, policymakers and stakeholders can better engage in long-term planning and build the governance and management systems that are needed for on-the-ground efforts to achieve their goals.