Assessment and Strategies
Of the Connecticut
Coastal Management Program

2021 to 2025 Enhancement Cycle

Section 309
Coastal Zone Management Act

Prepared by the
Connecticut Department of Energy and Environmental Protection
Land and Water Resources Division

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CONNECTICUT'S COASTAL MANAGEMENT PROGRAM SECTION 309 ASSESSMENT AND STRATEGIES 2021-2025 Enhancement Cycle

I. INTRODUCTION

The Connecticut Department of Energy and Environmental Protection (DEEP)is pleased to provide this Assessment and Strategies for its coastal area management program in accordance with the June 2019 Guidance from NOAA's Office for Coastal Management (OCM). As in previous cycles, the Assessment evaluated Connecticut's regard to the nine areas of potential enhancement identified by the Federal Coastal Zone Management Act (CZMA), as amended. The 309 Program enhancement areas are: wetlands, public access, marine debris, cumulative and secondary impacts, special area management planning, ocean and great lakes resources, energy and government facility siting, aquaculture, and coastal hazards. NOAA's OCM has designated Coastal Hazards as an enhancement area of national importance. This document includes an assessment of each of the nine enhancement areas as they apply to Connecticut and identifies the relative importance of each area in consideration of the state's approved coastal management program, existing conditions, and anticipated program changes and implementation activities eligible for funding under section 309.

The Connecticut Coastal Management Act (CMA), effectuated in 1980, is the centerpiece of the State's comprehensive coastal resource management program, building upon existing authorities as well as providing additional ones. Responsibility for implementing the CMA is shared by state and municipal levels of government. In addition to providing the basic structures for Connecticut's coastal management program, the CMA delineates a coastal management boundary, contains statutory policies, standards, and procedures that implement the program, and defines management responsibilities for agencies at all affected levels of government. Most significantly, the CMA established over 50 specific policies and standards regarding the state's coastal resources and uses, to be applied to all development by each level of government with cognizance over such activities within the coastal area.

The DEEP Land and Water Resources Division (LWRD) is the organization directly responsible for implementation and enforcement of Connecticut's coastal management program. LWRD regulates all work in tidal wetlands and in tidal, coastal and navigable waters, and monitors and/or certifies for consistency purposes, as appropriate, all state and federal actions subject to our approved coastal management program. In addition, LWRD oversees and assures compliance of municipal implementation of CMA-mandated coastal site plan review requirements for all activities subject to local planning and zoning regulations.

Over the past thirty-five years of implementation of the state's coastal program, Connecticut has successfully preserved, protected and in fact restored critical coastal resources and has promoted water-dependent waterfront development, including significant public access to coastal waters. We have continually refined our organizational structure, our legal and programmatic guidance, and strengthened our network of related programs to enhance our capabilities of achieving our most basic dual purposes - resource protection and promotion of water-dependent uses. Perhaps most importantly, through the day-to-day implementation of our core program we have institutionalized the basic premises of the federal CZMA and state CMA.

This Assessment and Strategy continues to reflect the status of Connecticut's Coastal Management Program as an established, mature institution. The planning and regulatory statutes, programs, and policies needed to address the State's most salient coastal management problems already exist and are being successfully maintained. With the exception of additional attention to issues associated with the enhancement areas of Coastal Hazards and Ocean/Great Lakes Resources, there is no recognized need for any major new initiatives that would constitute an eligible program change under section 309. Accordingly, our assessment identifies our need to refine existing programs to help better achieve coastal management objectives, and lay the groundwork for future initiatives through data collection, analysis, and dissemination.

Therefore, as in our past assessments, we have identified no major gaps in our programs to address the enhancement areas. We have, however, identified several issues where, were funding available, we could add to and refine our approach to those associated enhancement areas. The categories of Coastal Hazards and Ocean and Great Lakes Resources address a number of significant issues, therefore, LWRD has designated those two areas as Connecticut's high priority enhancement areas for this assessment.

Highlighting the national priority of the Coastal Hazards Enhancement Area, Connecticut's coastal communities and their residents are becoming increasingly aware of the vulnerability of their coastal communities by increased development in coastal hazard areas. This increasing awareness of coastal resource vulnerability by residents and their state legislative representatives has brought up issues such as: (1) the need for regulatory streamlining of shoreline protection project reviews and licensing; (2) the recognition of threats posed by ongoing sea level rise in Long Island Sound; and, (3) the advancement of new non-structural flood and shoreline erosion control approaches, such as living shorelines, to the forefront for Connecticut's Coastal Management Program.

In addition, ocean resource issues remain a high priority in Connecticut as LWRD staff continue to participate in national and regional ocean initiatives such as the Northeast Regional Ocean Council (NROC) and its Ocean Planning Committee . Most significantly, during this last (2016 to 2020) 309 Program Enhancement Cycle Assessment great progress was made in the completion of Connecticut's own marine spatial planning effort that will assist coastal communities and state agencies to better manage use of and

resource conflicts in offshore waters. A final draft of Connecticut's Blue Plan was submitted to the state General Assembly in February 2020 for review and adoption. Once the Plan is officially adopted, LWRD believes Connecticut's offshore resources and uses will be able to be preserved and balanced on a spatial level with potential new uses and challenges.

The enhancement areas identified as of highest priority – Coastal Hazards and Ocean/Great Lakes Resources - are those that include the greatest number of potential program and related changes requiring the greatest additional staff and financial resources to accomplish.

The remaining seven enhancement areas were all ranked as a medium priority status for Connecticut's coastal management program. While Public Access remains a vital issue, new programmatic initiatives under section 309 are unlikely to fill major programmatic gaps. At this point, our primary public access need is for significant additional funding to acquire and manage access sites. Cumulative and Secondary Impacts will pose a continuing challenge, particularly in a heavily-developed coastal area like Connecticut's, but existing and ongoing programs already address important cumulative effects such as nutrient enrichment, stormwater runoff and nonpoint source pollution. Energy and Government Facility Siting continues to be of great importance but is expected to be better addressed under the Blue Plan. It continues to be designated a medium priority.

Wetlands continues to be of a medium priority for the state. The primary focus regarding work in this enhancement area includes enhancement and restoration efforts on existing coastal wetland resources by federal, state (including LWRD), local, and non-governmental environmental groups. Due to budgetary and other resource constraints, the potential for acquiring and/or the development of new or additional coastal wetland resource areas will continue to be very challenging during the next 309 Program Assessment Cycle.

Aquaculture is an important industry in Connecticut, and faces a number of emerging management issues as the industry expands and environmental impacts resulting from climate change and sea level rise affect existing activities. In addition to existing interagency coordination mechanisms, the Blue Plan will offer another means of integrating coastal management concerns with other federal and state agency processes.

Marine Debris and Special Area management plans (SAMPs), the two enhancement areas that LWRD rated as a low priority in the last assessment, were rated a medium priority in this assessment.

Due to LWRD becoming primarily responsible for the administration of the Harbormaster Program, Marine Debris as a low priority in the last assessment has increased to a medium priority for this assessment. LWRD staff have devoted significant attention to the administration of this program, including providing formalized training events,

implementation of several administrative changes that have helped to professionalize the program, and the development of resources and a website to assist harbormasters with performing their duties.

With respect to the 309 Program Enhancement Area for Special Area Management Planning (SAMP), LWRD will be investigating the feasibility of developing designated SAMP to be located in and around New London (harbor and Thames River) area, or in and around Bridgeport Harbor over the next five-year cycle as a result of increased focus on redevelopment and the potential for these areas to be impacted by offshore energy activities.

II. SUMMARY OF PAST 309 EFFORTS

The following list contains 309 projects undertaken since the 2016 Assessment. Additional information on efforts in the high and medium priority categories is presented in the Phase I Enhancement Area Analysis (Section III) for the respective category.

Wetlands

- Medium priority in last Assessment; no 309 project undertaken

Coastal Hazards (High priority)

- Living Shoreline Guidance Development
- Shoreline Change Guidance - Shoreline Flood and Erosion Control Structure (SFEC) Consistency Checklist
- Development of Connecticut's Sea Level Affecting Marshes Model (SLAMM) and data sets and making the use of this model publicly available
- Adoption of a statewide sea level projection of 50 cm by 2050

Public Access

- Medium priority in last Assessment; no 309 project undertaken.

Marine Debris

- Low Priority in last Assessment; no 309 project undertaken

Cumulative and Secondary Impacts (High priority)

- Completion of Long Island Sound Dredged Material Management Plan and Guidance Development
- Shoreline Change Guidance - Shoreline Flood and Erosion Control Structure (SFEC) Consistency Checklist
- Creation of the Long Island Sound Marine Spatial Plan (The Blue Plan)

Special Area Management Planning

- Low Priority in last Assessment; no 309 project undertaken

Ocean Resources (High priority)

- Creation of the Long Island Sound Marine Spatial Plan (The Blue Plan)

Energy & Government Facility Siting

- Medium Priority in last Assessment
- Creation of the Long Island Sound Marine Spatial Plan (The Blue Plan)

Aquaculture

- Medium priority in last Assessment;
- Creation of the Long Island Sound Marine Spatial Plan (The Blue Plan)

III. PHASE I ENHANCEMENT AREA ANALYSIS

III.a - Wetlands

Section 309 Enhancement Objective: *Protection, restoration, or enhancement of the existing coastal wetlands base, or creation of new coastal wetlands (§309(a)(1)).*

PHASE I (HIGH-LEVEL) ASSESSMENT: *To quickly determine whether the enhancement area is a high-priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.*

Resource Characterization

Current state of wetlands in 2016 (acres):

144,256 (4.9% of state) - Since the 2016 data were not available in NOAA's land cover atlas, DEEP used 2015 data available through UConn's Center for Land Use Education & Research (CLEAR) website. Please note, the methodology used by CLEAR to collect land cover data may differ from NOAA's methods, and this may explain any changes to total acreage as stated above and to the Status and Trends stated in the following table.

Coastal Wetlands Status and Trends (Note: data for years 1996, 2011, and 2016 are not available)

Change in Wetlands	from 1995-2015 (in acres)	from 2010-2015
Percent net change in total wetlands (% gained or lost)*	-896 (-0.61%)	no change
Percent net change in freshwater (palustrine wetlands) (% gained or lost)*	-576 (-0.44%)	no change
Percent net change in saltwater (estuarine) wetlands (% gained or lost)*	-320 (-2.18%)	no change

How Wetlands Are Changing (Note: data are not available)

Land Cover Type	Area of Wetlands Transformed to Another Type of Land Cover between 1996-2016 (Sq. Miles)	Area of Wetlands Transformed to Another Type of Land Cover between 2011-2016 (Sq. Miles)
Development	data not available	data not available
Agriculture	data not available	data not available
Barren Land	data not available	data not available
Water	data not available	data not available

The UConn CLEAR site referenced above does not provide data on the fate of lost wetlands. In general, it is a safe assumption to connect most of what has been identified in this report as a wetland loss to differences in data collection made by NOAA in 1996 and 2011, compared to CLEAR's methods in 2015. Other sources of loss to tidal/estuarine wetlands may include, but are not limited to: conversion to open water or non-vegetated intertidal flat due to sea level rise; increased nutrient loading; subsidence related to water control structures; and to a minimal extent, authorized losses for permitted activities (ex, docks, infrastructure). Actual losses of freshwater wetlands are most likely a result of authorized development projects, as they do not share the same level of legal protections as tidal wetlands.

1. *If available, briefly list and summarize the results of any additional state- or territory-specific data or reports on the status and trends of coastal wetlands since the last assessment to augment the national data sets.*

   According to results provided by the Sea Level Affecting Marshes Model (SLAMM), by 2100 there will be a significant change in overall tidal wetland function and distribution. Specifically, low marsh areas will convert to non-vegetated intertidal flats, and high marsh areas will convert to low marsh. High marshes will also migrate landward into flat, low-lying areas, converting coastal forests, coastal grasslands, lawns, fields, and similar areas to high marsh.

Management Characterization

1. *Indicate if there have been any significant changes at the state or territory level (positive or negative) that could impact the future protection, restoration, enhancement, or creation of coastal wetlands since the last assessment.*

Significant Changes in Wetland Management

Management Category	**Significant Changes Since Last Assessment** (Y or N)
Statutes, regulations, policies, or case law interpreting these	Y
Wetlands programs (e.g., regulatory, mitigation, restoration, acquisition)	Y

2. *For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:*
    a. *Describe the significance of the changes;*
    b. *Specify if they were 309 or other CZM-driven changes; and*
    c. *Characterize the outcomes or likely future outcomes of the changes.*

    Statutory changes affecting Connecticut's coastal regulatory programs, including tidal wetlands permitting, are discussed in the Coastal Hazards section of this Assessment.

    Significant changes in wetlands programs include the gradual reduction of budget and staff from DEEP's Wetlands Habitat and Mosquito Management (WHAMM) program, the Department's wetlands restoration field unit. These reductions have resulted in significantly less effort devoted to tidal marsh restoration projects, since maintaining the mosquito management program has become a higher priority due to public health concerns of recently introduced mosquito-transmitted diseases such as Eastern Equine Enchephalitis. Since 2017, CTDEEP has not restored any acres of tidal wetlands, but has performed restoration efforts on 7.25 acres of non-tidal freshwater wetlands. In addition to the reduction of tidal wetland restoration efforts, DEEP has been forced to scale back phragmites control efforts and instead focus on a wider variety of conservation projects on DEEP owned and managed state lands throughout the state. This has resulted in a shift from Connecticut's coastal area being the primary focus of the program.

Enhancement Area Prioritization

1. *What level of priority is the enhancement area for the coastal management program?*

    High _____
    Medium __X__
    Low _____

2. *Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.*

While the protection of tidal wetlands remains a focus of Connecticut's coastal management program, due to resource constraints, LWRD does not intend to pursue a 309 strategy that likely to result in a program change within the foreseeable planning horizon. DEEP will continue research on upland migration of tidal wetlands as a result of sea level rise (the SLAMM project as discussed in the Coastal Hazards Assessment) over the next five-year planning cycle. Further review and analysis of wetland management options may result in proposed recommendations for the future. While the beneficial use of suitable dredged material is both encouraged and allowed by statute, including for tidal marsh restoration, costs are generally higher than open water disposal. LWRD, the Long Island Sound Study (LISS) Program/Sentinel Monitoring, and additional stakeholders are having ongoing discussions about ways to promote beneficial use of dredged material for habitat enhancement. The LIS Dredged Material Steering Committee, including representatives of CT, NY, EPA and USACE are mandated to reduce open water disposal and increase beneficial use of dredged material which will a significant driver in the future.

III.b – Coastal Hazards

Section 309 Enhancement Objective: *Prevent or significantly reduce threats to life and property by eliminating development and redevelopment in high-hazard areas, managing development in other hazard areas, and anticipating and managing the effects of potential sea level rise and Great Lakes level change (§309(a)(2)).*

PHASE I (HIGH-LEVEL) ASSESSMENT: *To quickly determine whether the enhancement area is a high-priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.*

Resource Characterization

1. *In the table below, indicate the general level of risk in the coastal zone for each of the coastal hazards.*

General Level of Hazard Risk in the Coastal Zone

Type of Hazard	General Level of Risk[1] (H, M, L)
Flooding (riverine, stormwater)	M-H
Coastal storms (including storm surge)	H
Geological hazards (e.g., tsunamis, earthquakes)	M
Shoreline erosion	M
Sea level rise	M-H
Great Lakes level change	N/A
Land subsidence	L
Saltwater intrusion	Unknown
Other (please specify)	N/A

2. *If available, briefly list and summarize the results of any additional data or reports on the level of risk and vulnerability to coastal hazards within your state since the last assessment. The state's multi-hazard mitigation plan or climate change risk assessment or plan may be a good resource to help respond to this question.*

   Connecticut's current Natural Hazard Mitigation Plan (NHMP) was adopted by the state in January 2019 to meet Federal Emergency Management Agency (FEMA)

[1] Risk is defined as "the estimated impact that a hazard would have on people, service, facilities and structures in a community, the likelihood of a hazard event resulting in an adverse condition that causes injury or damage." *Understanding Your Risks: Identifying Hazards and Estimating Losses. FEMA 386-2. August 2001*

planning hazard mitigation planning requirements set forth in the Disaster Mitigation Act of 2000. During the last assessment period, the responsibility for the implementation, maintenance and updating of this plan was transferred from DEEP to the Department of Emergency Management and Homeland Security (DEMHS), and can be found at: https://portal.ct.gov/DEMHS/Legal-Resources/Plans.

Since 2010, Connecticut has experienced nine presidential declared disasters, while during the decade prior (January 2000 to January 2010), the state had only experienced two major disaster declarations[2].

Presidential Disaster Declarations for Connecticut: January 2010 to January 2020

Disaster Number	Name	Incident period	Declaration Date
DR-1904	CT Severe Storms and Flooding	3/12/2010 - 3/17/2010	4/23/2010
DR-1958	CT Snowstorm	1/11/2011 - 1/12/2011	3/3/2011
DR-4023	CT Tropical Storm Irene	8/27/2011 - 9/1/2011	9/2/2011
DR-4046	CT Severe Storm	10/29/2011 - 10/30/2011	11/17/2011
DR-4087	CT Hurricane Sandy	10/27/2012 - 11/8/2012	10/30/2012
DR-4106	CT Severe Winter Storm and Snowstorm	2/8/2013 - 2/11/2013	3/21/2013
DR-4213	CT Severe Winter Storm and Snowstorm	1/26/2015 to 1/28/2015	4/8/2015
DR-4385	CT Severe Storms, Tornadoes, and Straight-Line Winds	5/15/2018	8/20/2018
DR-4410	CT Severe Storms and Flooding	9/25/2018 - 9/26/2018	12/5/2018

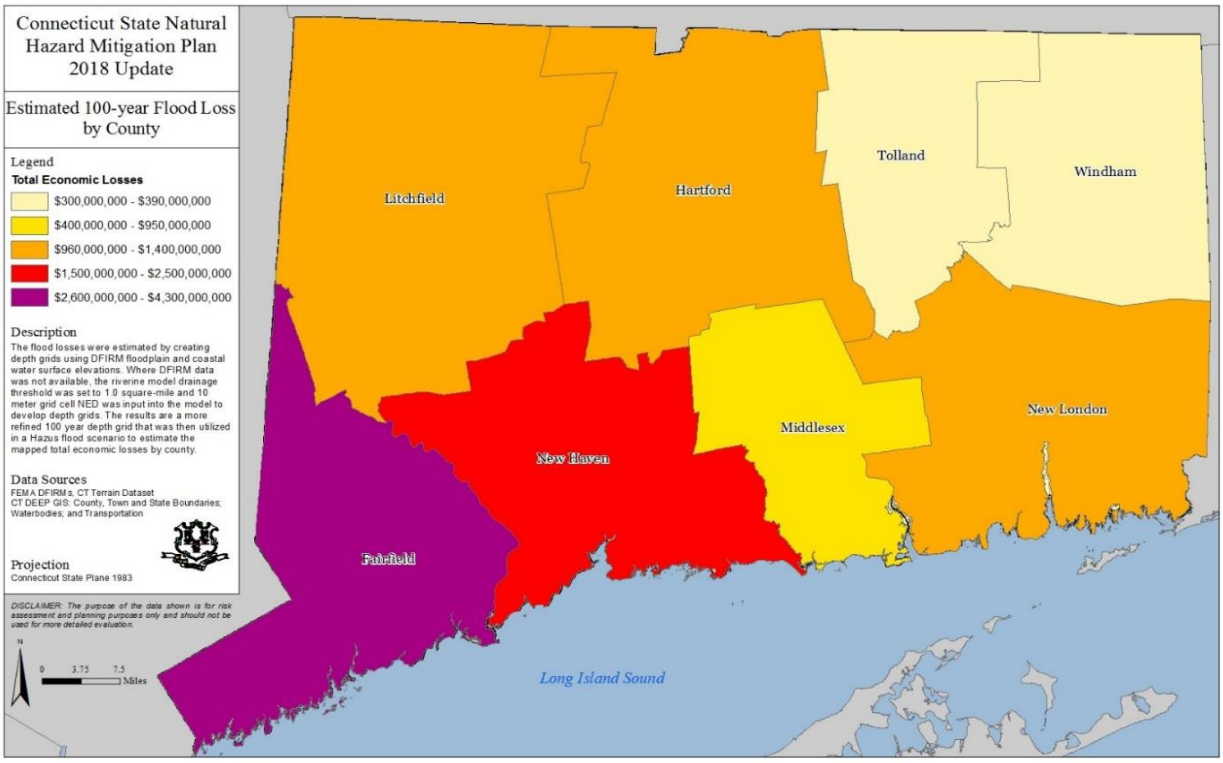
Connecticut is comprised of 169 towns, including 36 coastal municipalities (plus two tribal governments and political subdivisions in Groton and Stonington). All

[2] Information obtained through FEMA's website: https://www.fema.gov/disasters.

communities in Connecticut participate in FEMA's National Flood Insurance Program and are covered by a local hazard mitigation plan. A major effort was made by the state, starting with the 2015 NHMP update, to standardize and incorporate hazard rankings from local hazard mitigation plans and compare them to the State's overall hazard ranking. This detailed information can be found in the State's NHMP Appendix. Below is a table excerpted from the current NHMP that compares hazard ranking between counties. Counties with coastal communities are all very close in their ranking of general natural hazard rankings for hazards that may include impacts from increased storm surge or flooding.

The following map shows the vulnerability of the coastal area of Connecticut to the impacts of flooding events to the regions' economies and as well as to the state's overall economy.

Flood Loss Estimates by County



The following two tables (2019 NHMP) shows the hazard ranking for both flooding and sea level rise. As expected, coastal counties rank both hazards high in importance and for development and implementation of local hazard mitigation and climate adaptation and resilience efforts.

Hazard Ranking by County for all Hazards

County	Dam Failure Hazard Ranking	Drought Hazard Ranking	Earthquake Hazard Ranking	Flood Hazard Ranking	Sea Level Rise Hazard Ranking	Thunderstorm Hazard Ranking	Tornado Hazard Ranking	Tropical Cyclone Hazard Ranking	Wildland Fire Hazard Ranking	Winter Weather Hazard Ranking
Fairfield	Medium	Medium-Low	Medium	High	Medium-High	High	High	Medium-High	Medium-Low	High
Hartford	Medium-Low	Medium	Medium	High	Medium-Low	High	High	Medium-High	Low	High
Litchfield	Low	Medium	Medium-Low	Medium-High	Low	High	Medium-High	Medium	Medium-Low	Medium-High
Middlesex	Low	Medium-Low	Medium-Low	Medium	Medium-High	Medium	Medium	Medium-High	Medium-Low	Medium
New Haven	Medium-Low	Medium-Low	Medium	Medium-High	High	High	Medium-High	Medium-High	Medium-Low	High
New London	Low	Medium-Low	Medium-Low	Medium-High	Medium-High	Medium-High	Low	Medium-High	Medium-Low	Medium
Tolland	Low	Medium	Medium-Low	Medium	Low	Medium	Medium-Low	Medium	Medium-Low	High
Windham	Low	Medium	Low	Medium	Low	Medium	Medium-Low	Medium	Medium-Low	Medium-High

The Sea Level Affecting Marshes Model (SLAMM) was used to project the potential response of Connecticut's shoreline to sea-level-rise (SLR). Model results indicate potentially significant changes in the type and extent of Connecticut's tidal wetlands could occur by the end of this century under SLAMM's two highest SLR by the end of the century. Under the highest SLR scenario of approximately 6 feet by 2100, SLAMM projects at least a 25% decline in the total area of Connecticut's coastal marsh. Such changes could potentially significantly reduce the capacity of coastal marshes in some areas to mitigate shoreline flood and erosion hazards. Applying SLAMM's medium-high scenario (18 inches of SLR by 2055), regular tidal (non-storm) 90-day frequency coastal road flooding is expected to increase from approximately 6 miles to 79 miles of flooded roadway by mid-century,

In January 2015, the USACE (USACE) issued the North Atlantic Comprehensive Coastal Study (NACCS). Building on this effort, in 2016 the USACE and DEEP developed a Flood Risk Management Feasibility Study for Fairfield and New Haven Counties. One of the primary goals of the study was to assess flood risk within both counties - examining both coastal and riverine flooding – and to develop a Tentative Selective Plan (TSP) that would include one or more projects, to mitigate the impacts from flooding. A second main goal of the study was to develop one or more proposed projects , whether structural in nature, non-structural in nature, or a combination. The TSP for the study focused on one project for the City of New Haven – the construction of a flood control structure/system for the Long Wharf area of the city. The proposed project would protect I-95 and a major train station and railyard, both critical to the region and entire coastal transposition infrastructure, along with existing businesses located between the train state and

I-95 (a major economic center for the city and region as a whole). Both study partners anticipate that the study will be completed by December 2020.
The Connecticut Institute for Resilience and Climate Adaptation (CIRCA) is joint partnership between DEEP and the University of Connecticut to translate sound scientific research to actions that can ensure the resilience and sustainability of both the built and natural environments of Connecticut. Over the course of the last assessment, there have been many initiatives that have provided insights to coastal risks and vulnerability. Several key highlights include:

- Waves in Long Island Sound/Living Shorelines Site Suitability Tool: funded by a two-year grant from NOAA –CREST and focusing on several specific areas of the Connecticut coast, this effort: assessed patterns of coastal erosion; identified shoreline characteristics and coastal protection approaches; examined storm wave characteristics at the shoreline to provide alternative design guidelines; and a provided a review of available design guidelines for the deployment of "living shoreline" strategies. See https://circa.uconn.edu/crest/.
- Sea Level Rise Analysis & Recommendations: As a response to Connecticut Public Act 13-179, which required several state planning efforts to consider the effects of sea level rise, CIRCA compiled an analytical report providing information on several projections as well as recommendations for specific sea level trends for Connecticut and their uncertainty bounds for use in planning. See https://circa.uconn.edu/sea-level-rise/about/.
- Municipal Resilience Planning Assistance: This project combined science, policy, and planning at the state and local levels to address the resilience of vulnerable communities along Connecticut's coast and inland waterways to the growing impacts of climate change. CIRCA partnered with CT DEEP, UConn faculty, CLEAR, and CT Sea Grant to develop information and tools for this project via the following topics: 1) sea level rise and coastal flooding, 2) inland flooding, 3) critical infrastructure, and 4) policy and planning. See https://circa.uconn.edu/municipal-resilience-planning/
- Resilient Connecticut: As part of Phase II of the HUD National Disaster Resilience Competition, this ongoing project will generate recommendations for a *Statewide Resilience Roadmap* that includes regional resilience and adaptation planning, policy consideration, and actionable priorities. In addition, science-based regional risk assessments will inform municipal to regional scale initiatives and pilot projects.

A complete inventory of projects, tools, and resources are available via https://circa.uconn.edu/.

Management Characterization

1. *In the tables below, indicate if the approach is employed by the state or territory and if significant state- or territory-level changes (positive or negative) have occurred that could impact the CMP's ability to prevent or significantly reduce coastal hazards risk since the last assessment.*

Significant Changes in Hazards Statutes, Regulations, Policies, or Case Law

Topic Addressed	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Elimination of development/redevelopment in high-hazard areas[3]	N	N/A	N
Management of development/redevelopment in other hazard areas	Y	Y	Y
climate change impacts, including sea level rise or Great Lakes level change	Y	Y	Y

Significant Changes in Hazards Planning Programs or Initiatives

Topic Addressed	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Hazard mitigation	Y	Y	Y
Climate change impacts, including sea level rise or Great Lakes level change	Y	Y	Y

[3] Use state's definition of high-hazard areas.

Significant Changes in Hazards Mapping or Modeling Programs or Initiatives

Topic Addressed	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Sea level rise or Great Lakes level change	Y	Y	Y
Other hazards	N/A	N/A	N/A

2. *Briefly state how "high-hazard areas" are defined in your coastal zone.*

   "Coastal hazard areas" are defined by the CT Coastal Management Act as "those land areas inundated during coastal storm events or subject to erosion induced by such events, including flood hazard areas as defined and determined by the National Flood Insurance Act, as amended (USC 42 Section 4101, P.L. 93-234) and all erosion hazard areas as determined by the commissioner." CGS §22a-93(7)(H).

3. *For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:*
   a. *Describe the significance of the changes;*
   b. *Specify if they were 309 or other CZM-driven changes; and*
   c. *Characterize the outcomes or likely future outcomes of the changes.*

   A review of the last five-year assessment cycle indicates that significant changes occurred for on both the state and local level with respect to the development of climate resilience and adaptation plans. The state passed PA 18-82, An Act Concerning Climate Change Planning and Resiliency, which requires local and state governments to include a sea level rise projection adopted by DEEP (50 cm) into their analysis for community and infrastructure planning efforts. Following up on this legislation, the Governor's Council on Climate Change (GC3) was re-established by Executive Order in September 2019. Among the GC3's responsibilities are the development and implementation adaptation strategies to assess and prepare for the impacts of climate change in areas such as infrastructure, agriculture, natural resources, and public health. Specific tasks include conducting an inventory of vulnerable state assets and operations, revising and updating the 2011 Connecticut Climate Change Preparedness Plan, and aligning climate change adaptation strategies incorporated into state agency

planning processes and documents. LWRD staff will provide input and support to GC3, with the Director of the coastal management program serving as DEEP lead for the Adaptation and Implementation Work Group.

The Connecticut Institute for Resiliency and Climate Adaptation (CIRCA) developed sea level rise projections for 2050 to support the Act. In addition, CIRCA has developed a Sea Level Rise and Storm Surge Map Viewer that is available for use on its webpage, along with currently working on a planning effort to develop a comprehensive regional climate resiliency and adaptation plan for Fairfield and New Haven Counties.

In addition to the work performed by CIRCA, the majority of coastal communities have engaged in planning efforts to develop local climate adaptation and resiliency plans. These planning efforts are the foundational work for CIRCA's larger regional planning effort.

Enhancement Area Prioritization

1. *What level of priority is the enhancement area for the coastal management program?*

   High **_X____**
   Medium **_____**
   Low **_____**

2. *Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.*

   Coastal Hazards and their impact on the residents and their property continues to be a high priority, not just at the national level, but on a state-level in Connecticut. The impacts from increased intensity and frequency of coastal storms, tropical cyclones, sea level rise, and climate change (including temperature increases), are expected to only increase during this century. Residents in low-lying coastal areas are already seeing an increase in nuisance flooding occurring more frequently. Over the past few years, LWRD has witnessed an increased interest in the use of non-structural flood and erosion control best management practices (BMPs) such as: (1) the creation of living shorelines, where feasible; (2) restoration of tidal wetland areas (as a result of USACE harbor dredging projects); (3) and, local residents along the coast applying for permits to develop living shorelines on their coastal properties.

   In addition, coastal communities are becoming increasingly pro-active and developing climate adaptation and resiliency plans to help guide future development and provide protection recommendations for existing development within coastal resource areas. These plans are also being utilized to help bridge other local planning efforts together and create a more comprehensive planning environment at the local level.

DEMHS is responsible for the update and implementation of the state's Natural Hazards Mitigation Plan. Throughout the Plan Update process and during the time the plan is active, DEMHS is open to the collection of public comments. In addition, the plan is reviewed and comments are provided by the state's Long-Term Recovery Committee. This Committee is made up of representatives from the private sector, municipalities, residents, Councils of Governments, Volunteer Organizations Active in Disasters (VOADs), and various state agencies. This group provides valuable opportunities to disseminate information and solicit public response with respect to the Plan and the hazard mitigation needs of Connecticut residents.

III.c – Public Access

Section 309 Enhancement Objective: *Attain increased opportunities for public access, taking into account current and future public access needs, to coastal areas of recreational, historical, aesthetic, ecological, or cultural value (§309(a)(3)).*

PHASE I (HIGH-LEVEL) ASSESSMENT: *To quickly determine whether the enhancement area is a high-priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.*

Resource Characterization

1. *Use the table below to provide data on public access availability within the coastal zone.*

Public Access Status and Trends

Types of Access	Current number[4]	Changes or Trends Since Last Assessment[5]	Cite data source
Beach access sites	84	An increase of 4 sites primarily includes sites that previously existed but not listed on the CT Coastal Access Guide due to oversight or were re-opened after being removed from the Guide due to beach operations issues	CT Coastal Access Guide database: "On Guide" & "significant sandy beach"
Shoreline (other than beach) access sites	259	An increase of 11 sites are due to a variety of factors including sites gained through municipal coastal site plan review (CSPR) approvals that were constructed this period, sites that previously existed but were not known to exist and omitted from Access Guide	CT Coastal Access Guide dbase: "On Guide" less "significant sandy beach access sites"
Recreational boat (power or non-motorized) access sites	106	An increase of 7 sites were due to launch ramps that were previously closed due to reconstruction but re-opened this period, car-top launches that previously existed but were not known to exist, or new car-top sites gained through new private development CSPR approvals.	CT Coastal Access Guide dbase: 'On Guide' + ('car-top' OR 'boat ramp')
Number of designated scenic vistas or overlook points	2	No change-none previously report in error. These 2 sites previously existed	CT Coastal Access Guide dbase: 'On Guide' + (*scenic overlook*)
Number of fishing access points (i.e. piers, jetties)	173	Increase in 2 sites, not limited to sites with piers/jetties.	CT Coastal Access dbase: 'On-Guide' + 'Fishing' (not limited to sites with piers/ etc.)

[4] Be as specific as possible. For example, if you have data on many access sites but know it is not an exhaustive list, note "more than" before the number. If information is unknown, note that and use the narrative section below to provide a brief qualitative description based on the best information available.

[5] If you know specific numbers, please provide. However, if specific numbers are unknown but you know that the general trend was increasing or decreasing or relatively stable or unchanged since the last assessment, note that with a ↑ (increased), ↓ (decreased), – (unchanged). If the trend is completely unknown, simply put "unkwn."

Coastal trails/ boardwalks *(Please indicate number of trails/boardwalks and mileage)*	trails/boardwalks - 72 /142 (No data on total length (linear miles); majority 'boardwalks' are improved walkways)	Number of trail and boardwalks (paved walkways included) each increased by 5 sites. Length of trail/boardwalk not tracked. A significant addition to an existing boardwalk at Silver Sands State Park was partially damaged by fire in 2019.	CT Coastal Access dbase: 'On-Guide' + ('trails' or 'walkways'). Walkways include boardwalks and other improved footpaths
Number of acres parkland/open space	Total number of sites – 156 (Area/acres unknown)	8 new 'parkland' sites. Mostly municipal sites, including previously existing but unknown sites and sites previously included on the Guide but closed due to construction that were re-opened this period.	CT Coastal Access Guide dbase: On Guide + Principle use sites= parks or wildlife areas, or natural areas
Access sites that are Americans with Disabilities Act (ADA) compliant[6]	Total number of sites – 167 (At least some portion of site believed compliant)	Not previously reported, therefore no change reported here.	CT Coastal Access Guide dbase: 'On Guide'
Other (please specify)			

[6] For more information on ADA see www.ada.gov.

2. *Briefly characterize the demand for coastal public access and the process for periodically assessing demand. Include a statement on the projected population increase for your coastal counties. There are several additional sources of statewide information that may help inform this response, such as the Statewide Comprehensive Outdoor Recreation Plan,[7] the National Survey on Fishing, Hunting, and Wildlife Associated Recreation,[8] and your state's tourism office.*

   Connecticut's 2017-2020 Statewide Comprehensive Outdoor Recreation Plan (SCORP) general population survey (conducted in 2017) of household participation rates in water-based outdoor recreation activities identified 'beach activities' and 'swimming in freshwater/saltwater' among the top three (out of ten) most reported activities (no distinction between participation at coastal vs. inland facilities). Demand for coastal public access fluctuates seasonally with the summer beach season exhibiting the greatest demand at sites with supervised saltwater swimming at parks with sandy beach. State-managed saltwater beach parks accommodate large numbers of yearly visitors (e.g., ~ 2.9 million people visited Hammonasset Beach State Park in 2019). Coastal municipalities have at least one saltwater swimming beach, but are generally much smaller and capable of accommodating fewer visitors. A significant number of private beach associations maintain sandy beach saltwater swimming facilities in Connecticut but because their use is generally limited to association members they are not considered facilities providing general coastal public access. Further, a 2019 investigation of municipal beach access fees by the *Hartford Courant* reported that fees charged to non-residents likely deters non-residents from accessing municipal beaches.

   During the summer beach season it's not uncommon for demand at some State and municipally-operated coastal park beaches to exceed capacity on fair-weather weekends. Connecticut's four[9] State-operated saltwater beach parks maintain records of such events as do some municipal saltwater beach operators, although there is no central repository for the municipal data. The average number-of-days-per-beach season these State park beaches closed because demand exceeded capacity increased from 4.2 days/year (2011-2015) to 6.75 days/year (2016-2019). To put these numbers in perspective, with approximately 32 weekend days and State holiday week days per peak beach season (Memorial Day-Labor Day), on average, State shoreline parks exceeded capacity on nearly one of every five (21%) peak demand beach days for the four year period 2016-2019. Although the reasons for this increase are uncertain, the number of fair weather weekends per summer beach season influence the number of

[7] Most states routinely develop "Statewide Comprehensive Outdoor Recreation Plans", or SCROPs, that include an assessment of demand for public recreational opportunities. Although not focused on coastal public access, SCORPs could be useful to get some sense of public outdoor recreation preferences and demand. Download state SCROPs at *www.recpro.org/scorp-library*.

[8] The National Survey on Fishing, Hunting, and Wildlife Associated Recreation produces state-specific reports on fishing, hunting, and wildlife associated recreational use for each state. While not focused on coastal areas, the reports do include information on saltwater and Great Lakes fishing, and some coastal wildlife viewing that may be informative and compares 2016 data to 2011, 2006 and 2001 information to understand how usage has changed. See www.wsfrprograms.fws.gov/subpages/nationalsurvey/national_survey.htm

[9] Two additional State managed shoreline parks, Seaside and Harkness Memorial State Parks, neither offer saltwater swimming nor report visitation or park capacity exceedance.

patrons seeking entry at these parks and therefore number of days shoreline parks reached capacity. Although the number of days that municipal beaches (no distinction between freshwater and saltwater beaches) closed due to insufficient capacity is unknown, Connecticut's 2017-2022 SCORP survey of municipal recreation officials indicates that 28% of respondents indicated their 'swimming areas' (no distinction between fresh and saltwater swimming) are insufficient to meet demand. Interestingly, 70% of the general population survey respondents rated their need for 'swimming areas' as being 'not at all' or 'somewhat' met. The 2017 SCORP survey results of household participation rates in other types of outdoor recreation activities routinely, but not exclusively, practiced along Connecticut's coast (e.g., birding, saltwater fishing, paddle boating, motor boating, sailing, snorkeling/scuba) declined between 2005 (the date of preceding SCORP survey) and 2017. However, changes in SCORP survey sampling methodologies from 2005 to 2017 complicate direct comparison of survey results between these periods.

Changes in demand for coastal access reported in Connecticut's 2015 Assessment appear to be unrelated to changes in the resident population of Connecticut's coastal counties and Hartford County. Hartford County is not a coastal county but the Hartford metro area is less than a one hour drive to Connecticut's central coastline and influences demand for shoreline public access; therefore it is included in the population change data presented here. From 2015 to 2018 (the latest year for which State population data is available) the population of these counties and demand for beach access remained steady. Similarly, a projected population increase within these counties of less than one percent from 2018 to 2025 is not expected to significantly affect demand. A potentially more significant demographic factor affecting future demand is the projected trend of an increasingly older State population. The percent of Connecticut residents age 60 or older within this period is projected to increase from 21% to 24% of the population, an increase of 97,068 residents within this age cohort. With nearly one in four Connecticut residents at least 60 years old by 2025, the types of facilities required to accommodate the needs and preferences of an increasingly older State shoreline park visitor will likely change.

In 2018, Connecticut implemented a new "Passport to the Parks" program by which residents with state-registered vehicles can enter all State Parks and State Forests without a parking fee. In the first two years of this program, we have seen an increase of a little more than 10% in the number of visitors to our coastal State Parks because of this new program. Whether that upward trend in visitation continues will be evaluated closely in the coming years.

3. *If available, briefly list and summarize the results of any additional data or reports on the status or trends for coastal public access since the last assessment.*

Other information reviewed to assess trends in demand for coastal access are phone inquiries and comments received through a dedicated e-mail account on the **Connecticut Coastal Access Guide**. Although such inquiries span a variety of topics one of the more common frequent comments or inquiries regard places to launch car-top boats, fishing access and municipal beach access rules and fees.

Management Characterization

1. *Indicate if the approach is employed by the state or territory and if there have been any significant state- or territory-level management changes (positive or negative) that could impact the future provision of public access to coastal areas of recreational, historical, aesthetic, ecological, or cultural value.*

Significant Changes in Public Access Management

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Statutes, regulations, policies, or case law interpreting these	Y	Y	Y
Operation/maintenance of existing facilities	Y	N	N
Acquisition/enhancement programs	Y	Y	Y

2. *For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:*
    a. *Describe the significance of the changes;*
    b. *Specify if they were 309 or other CZM-driven changes*
    c. *Characterize the outcomes or likely future outcomes of the changes.*

In 2014 the former Connecticut Department of Mental Health and Addiction Services; Seaside Regional Center was transferred to CT DEEP to be operated as Seaside State Park. The 32-acre property with ¼-mile beach frontage in Waterford was the first new coastal State park created in 50 years. The *Final Seaside State Park Master Plan* recommending a public-private partnership to operate a publicly accessible waterfront campus with an inn and conference facilities was rejected in 2019 due to a lack of sufficient private sector interest in the proposed partnership. Since 2015, the Park has been managed for low capacity passive outdoor recreation activities such as fishing,

bird watching and strolling with support facilities limited to portable sanitary facilities. At Silver Sands State Park in Milford, another sandy beach coastal park with limited support facilities, a nearly completed new bath house, concessions building and park offices was destroyed by fire in 2019. The Park's recently constructed boardwalk expansion is the only facility enhancement affected by the fire that remains open to the public. Reconstruction is currently underway for these new the facilities, and are expected to be available for public use in 2020. Since 2015 a new $4 million state-of-the-art 4,000 square foot Meigs Point Nature Center was constructed at Hammonasset Beach State Park. Together with other significant Park enhancements including improvements to campground facilities, water/electrical utilities replacements, and beach/dune rebuilding, Connecticut's most popular coastal State park has undergone significant improvements since 2015.

The creation of the new "Passport to the Parks" program in 2018 allows all state-registered vehicles to enter state parks and forests without paying a parking fee. This program has led to a 10% increase in visitation in 2018 and 2019.

Although the State coastal parks facilities changes described above were not 309 or other CZM-driven changes, CZM staff participated in numerous permitting reviews of the facilities ensuring that that they were sited, designed, and constructed consistent with Connecticut's Coastal Management Program resource protection policies and standards.

The coastal State Parks facilities' enhancements at Hammonasset Beach and Silver Sands described above have or are expected to provide new and improved coastal outdoor recreation opportunities to a significant number of State park visitors. It's unknown whether proposed facilities improvements envisioned in the 2016 *Final Seaside State Park Master Plan* will be completed in the near future.

3. *Indicate if your state or territory has a publically available public access guide. How current is the publication and how frequently it is updated?*[10]

[10] Note some states may have regional or local guides in addition to state public access guides. Unless you want to list all local guides as well, there is no need to list additional guides beyond the state access guide. You may choose to note that the local guides do exist and may provide additional information that expands upon the state guides.

Publically Available Access Guide

Public Access Guide	Printed	Online	Mobile App
State or territory has? (Y or N)	Y	Y	Y
Web address (if applicable)		https://www.depdata.ct.gov/maps/coastalaccess/index.html	same
Date of last update	2001	2019	2019
Frequency of update	None planned	Semi-annually	Semi-annually

Enhancement Area Prioritization

1. *What level of priority is the enhancement area for the coastal management program?*

   High _____
   Medium __X__
   Low _____

2. *Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.*

   Connecticut has a 'mature' coastline in the sense that much of its shoreline was developed prior to adoption of the coastal management program and many of the gains in coastal public access occurred through the first 30 years of program implementation. The past 5 years have seen relatively little new significant shoreline development or redevelopment resulting in new coastal public access sites gained through the municipal coastal site plan review or State coastal permitting processes. Until there is major redevelopment proposed for waterfront sites not currently providing public access, few new coastal public access sites are expected to be gained. As new non water-dependent development is proposed at waterfront sites, Connecticut's program has and will continue to insist that shoreline public access facilities be provided as a condition of local or DEEP regulatory approvals.

III.d – Marine Debris

Section 309 Enhancement Objective: *Reducing marine debris entering the nation's coastal and ocean environment by managing uses and activities that contribute to the entry of such debris (§309(a)(4)).*

PHASE I (HIGH-LEVEL) ASSESSMENT: *To quickly determine whether the enhancement area is a high-priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.*

Resource Characterization

1. *In the table below, characterize the existing status and trends of marine debris in the state's coastal zone based on the best-available data.*

Existing Status and Trends of Marine Debris in Coastal Zone

Source of Marine Debris	Significance of Source (H, M, L, Unknown)	Type of Impact[11] (aesthetic, resource damage, user conflicts, other)	Change Since Last Assessment (same, increase, decrease, unknown)
Beach/shore litter	L	Aesthetic	-
Land-based dumping	L	Aesthetic	-
Storm drains and runoff	M	Aesthetic, resource damage, health	-
Land-based fishing (e.g., fishing line, gear)	L	Aesthetic, resource damage	-
Ocean/Great Lakes-based fishing (e.g., derelict fishing gear)	L	Resource damage	-
Derelict vessels	L	Aesthetic	-
Vessel-based (e.g., cruise ship, cargo ship, general vessel)	L	Aesthetic	-
Hurricane/Storm	M-H?	Aesthetic, resource damage	Increase
Tsunami	L	Aesthetic, resource damage	-N/A
Other (please specify) Synthetic microfibers	H	Health, resource damage, unknown	Increase

[11] You can select more than one, if applicable.

2. *If available, briefly list and summarize the results of any additional state- or territory-specific data or reports on the status and trends or potential impacts from marine debris in the coastal zone since the last assessment.*

   In the 2015 assessment, LWRD stated that marine debris was not a significant issue in our estuary and this is still the case. Litter control, recycling and bottle return programs and policies are developed and implemented by the DEEP Bureau of Materials Management and Compliance Assurance Waste Engineering and Enforcement Division and Source Reduction and Recycling Program. There have also been several legislative efforts to expand and update waste reduction and recycling. Effective July 19, 2016, the Department committed to a Comprehensive Materials Management Strategy.

   The strategy outlines Connecticut's goal of diverting or reducing and recycling 60% of municipal solid waste by 2024 from the FY 2005 baseline. This translates to a reduction of approximately 2.3 million tons of municipal solid waste each year. So far, reduction efforts have resulted in a 200,000 ton reduction in waste annually. The details of the strategy include improved performance of recycling programs, reducing waste, increasing participation and compliance with the mandatory recycling provisions that are currently in place. Further, the plan focuses on developing and improving recycling and waste conversion technology, and encouraging corporations that design, produce and market products to share the responsibility of stewarding those materials in a sustainable way.

   Derelict structures most likely contribute to the largest? greatest? amount of debris found in Long Island Sound. Structures include derelict docks, piers, vessels, and fishing equipment. Effective on October 1, 2018, Public Act 18-54 gives DEEP representatives the authority to seize derelict lobster gear. The act provides a specific process to be followed by DEEP representatives resulting in the disposal of the gear if unclaimed.

   DEEP was required, under Public Act 18-181, to assemble a working group including various members of the environmental sector and apparel industry to develop a plan for consumer awareness and education on synthetic microfiber pollution. The plan prepared for the legislature identifies methods to promote consumer awareness including laundering techniques and mechanical devices that reduce the amount of synthetic fibers in washing machine effluent. The plan also recognizes what the apparel industry can do to reduce microfiber content and shedding (and in turn, microfiber pollution), and how the appliance industry can standardize filters on washing machines to reduce this source of pollution. Additionally, the plan outlines strategies to incorporate the topic into part of educational curriculum.

Enacted in the past year, Public Act 19-117, which mandated a 10 cent fee for single use plastic bags typically distributed by grocery stores, take out restaurants and retail stores, effective on August 1, 2019. The act will also prohibit single use plastic bags beginning on July 1, 2021. Further, the act allows stores to change 10 cents for the use of paper bags. This act could reduce the amount of plastic debris that ends up in the State's estuary.

DEEP updated its Disaster Debris Management Plan in August of 2019, which establishes framework for state agencies and municipalities to follow to facilitate the management of debris resulting from a natural disaster. The Plan anticipates likely scenarios with amounts and types of debris and provides response procedures based on those projections.

When improperly disposed of, fishing lines kill and injure marine and estuarine organisms. To address this issue, DEEP partnered with the Menunkatuck Audubon Society and the CT Audubon Society to install 35 recycling receptacles for fishing lines in 21 coastal and inland CT towns. Additionally, a project sponsored by the CT Audubon Society involving high school students in Fairfield set up another 19 fishing line receptacles at docks and piers in Fairfield and Bridgeport.

There are also initiatives for reducing marine debris supported by the Long Island Sound Study Futures Fund and managed by the National Fish and Wildlife Foundation. One project will install a trash skimmer in the Stamford Harbor and is expected to remove approximately 3,190 pounds of marine debris every year. Yale University is conducting a project on marine debris in Long Island Sound to evaluate which types of litter traps work best with different types of litter and to determine sources of the debris. Citizens Campaign Fund for the Environment will conduct a project to collect information about use of plastic, paper and reusable bags to determine the most effective ways to encourage reusable bag use in Fairfield and New Haven counties.

Management Characterization

1. *Indicate if the approach is employed by the state or territory and if there have been any significant state- or territory-level management changes (positive or negative) for how marine debris is managed in the coastal zone.*

Significant Changes in Marine Debris Management

Management Category	Employed by State/Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Marine debris statutes, regulations, policies, or case law interpreting these	Y	Y	N
Marine debris removal programs	N	N	N

2. *For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:*
    a. *Describe the significance of the changes;*
    b. *Specify if they were 309 or other CZM-driven changes; and*
    c. *Characterize the outcomes and likely future outcomes of the changes.*

    Connecticut continues to implement and administer programs in effect since our 2015 assessment, none of which was driven by Section 309 efforts. The Long Island Sound Study ("LISS") set a goal of decreasing the mass of marine debris in the Sound by 2035 from the 2013 baseline of 475 pounds of debris collected per mile (http://longislandsoundstudy.net/ecosystem-target-indicators/marine-debris/). LISS launched a Don't Trash LIS campaign as an effort to achieve the goal, and is currently in its 3rd year of the campaign. In 2018, 1,442 volunteers participated in annual International Coastal Cleanup (ICC) efforts, resulting in over 7,600 pounds of debris collected from 65 miles of the coast. The pounds-per-mile-average-of-trash collected from the volunteer cleanups has reduced by 33% from 2002 to 2018. Programs and initiatives that continue to be implemented on an on-going basis include: CSO abatement programs and state and local recycling, and anti-littering campaigns, and local litter ordinances. Marine debris abatement practices, as identified in DEEP's marina best management practice manual, are routinely incorporated into municipal harbor management plans, and are often used as a condition within state authorizations for marina facilities. In addition, marina facilities are required to receive a stormwater general permit for operations.

    In 2016, DEEP partnered with the Connecticut Marine Trades Association to re-launch the Clean Marina Program. Participating marinas comply with regulatory benchmarks and implement best management practices to promote a cleaner and healthier

waterfront in CT. The Clean Boater Program, complementing the Clean Marina Program, continues to promote awareness to CT Boaters about clean boating techniques.

Enhancement Area Prioritization

1. *What level of priority is the enhancement area for the coastal management program?*

High	_____
Medium	__X__
Low	_____

2. *Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.*

Marine debris is considered a medium priority enhancement area. There are many legislative and policy efforts in place to address the sources of marine debris including regulations for recycling, stormwater management and littering. Additionally, many of the potential impacts of marine debris are not fully understood. In 2017, UConn received a $257,531 grant from NOAA to study the effects of marine debris on oysters from August 2017 through October 2019. UConn is also studying microplastics in the Sound's harbors under a Long Island Sound Future Fund 2018 grant. Further, there are many stakeholders including nonprofit organizations, like Mystic Aquarium and CT Fund for the Environment, that work to raise public awareness of the issue and organize debris removal events. The Quinnipiac River Fund granted $138,000 to universities, municipalities and other organizations in 2019 for the purpose of studying, improving and reducing pollution in the Quinnipiac River and its watershed.

The last assessment evaluated marine debris as a low priority enhancement area. Marine debris is a wide topic with several pollutants and sources to consider. This assessment recognizes the emerging issue of microplastic contamination in the State's waters and the Sound. The effects on marine systems and human health are largely unknown at this time, which means that this source of marine debris has the potential to develop into a greater concern.

III.e – Cumulative and Secondary Impacts

Section 309 Enhancement Objective: *Development and adoption of procedures to assess, consider, and control cumulative and secondary impacts of coastal growth and development, including the collective effect on various individual uses or activities on coastal resources, such as coastal wetlands and fishery resources (§309(a)(5)).*

PHASE I (HIGH-LEVEL) ASSESSMENT: *To quickly determine whether the enhancement area is a high-priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.*

Resource Characterization

Trends in Coastal Population and Housing Units

	July 2012	July 2017	Percent Change (2012-2017)
Number of people	Fairfield County 933,835 New Haven County 862,813 Middlesex County 165,602 New London County 274,170 Total 2,236,420	Fairfield County 949,921 New Haven County 860,435 Middlesex County 163,410 New London County 269,033 Total 2,242,799	0.29% increase
Number of housing units	Fairfield County 361,427 New Haven County 361,884 Middlesex County 75,006 New London County 120,993 Total 919,310	Fairfield County 373,039 New Haven County 367,217 Middlesex County 76,332 New London County 123,404 Total 939,992	2.25% increase

1. *Using data from the University of Connecticut's Center for Land Use Education and Research (CLEAR), the status and trends for various land uses in the state's coastal counties between 1995 and 2015 are shown in the table below:*

Distribution of Land Cover Types in Coastal Counties

Land Cover Type	Land Area Coverage in 2015 (Acres)	Percentage Gain/Loss Since 1995 (Acres)
Developed	348,582	7.19
Turf and Grass	141,067	11.65
Other Grasses	27,591	-10.73
Agriculture	68,108	-10.81
Deciduous Forest	696,192	-3.11
Coniferous Forest	63,140	-2.15
Water	58,531	-2.27
Non-forested Wetland	5,644	-0.90
Forested Wetland	56,109	-0.92
Tidal Wetland	14,493	-1.95
Barren Land	9,867	-5.09
Utility Corridor	5,932	-1.31

2. Using data from UConn CLEAR, the status and trends for developed areas in the state's coastal counties between 1996 and 2016 are shown in the two tables below.

Development Status and Trends for Coastal Counties (acres)

	1995	2015	Percent Net Change
Percent land area developed	325,186	348,582	7.19
Percent impervious surface area	143,092	150,058	4.87

How Land Use Is Changing in Coastal Counties

Land Cover Type	Areas Lost to Development Between 1995-2015 (Acres)
Other Grasses	-3,317
Agriculture	-8,251
Deciduous Forest	-22,323
Coniferous Forest	-1,389
Water	-1,359
Non-forested Wetland	-51
Forested Wetland	-523
Tidal Wetland	-288
Barren Land	-529
Utility Corridor	-79

3. *Briefly characterize how the coastal shoreline has changed in the past five years due to development, including potential changes to shoreline structures such as groins, bulkheads and other shoreline stabilization structures, and docks and piers. If available,*

include quantitative data that may be available from permitting databases or other resources about changes in shoreline structures.

Between 2015 and 2019, a total of 546 authorizations for shoreline stabilization and dock activities under the Structures, Dredging, and Fill; Tidal Wetlands; and Section 401 Water Quality Certification regulatory programs were issued by CT DEEP LWRD. Twenty-nine percent of the authorizations issued between 2015 and 2019 (158) rose to the level of needing an individual permit, meaning the activity did not qualify for the abbreviated Certificate of Permission (COP) or general permit processes established for minor activities. The majority of authorizations issued between 2015 and 2019, 59 percent (320), were issued for activities that qualified for a COP, and 12 percent (64) were issued as general permits.

Of the 158 full permits issued in that timeframe, 54 were for shoreline stabilization activities such as bulkheads, seawalls, retaining walls, rip rap, or revetments. Many of those were public projects or supported water-dependent uses, including riprap for the U.S. Coast Guard and a bulkhead for the South Norwalk Boat Club in 2015, riprap for the Town of Stratford and a bulkhead for Thayer's Marine in 2016, and riprap for Fishers Island Oyster Farm and a bulkhead for the Town of Fairfield in 2019.

Thus, the vast majority of authorizations issued between 2015 and 2019 were for minor activities covered by COPs and GPs, and less than 10 percent of the 546 authorizations issued were individual permits for shoreline stabilization, which indicates that Connecticut's existing coastal regulatory programs continue to adequately control cumulative shoreline change resulting from significant and/or new shoreline stabilization projects.

4. *Briefly summarize the results of any additional state- or territory-specific data or reports on the cumulative and secondary impacts of coastal growth and development, such as water quality, shoreline hardening, and habitat fragmentation, since the last assessment.*

CT DEEP continues to administer a coastal nonpoint source pollution control program, a nitrogen control program, and a No Discharge Area program which all adequately address cumulative and secondary impacts to water quality. CT DEEP also continues to administer a Water Monitoring Program, performing an intensive year-round water quality monitoring program on Long Island Sound, the most recent results of which are reported in the 2018 Integrated Water Quality Report to Congress.

CT DEEP also continues to partner with the University of Connecticut's Center for Land Use Education and Research (CLEAR) in development of comprehensive statewide land cover data as well as projects and tools to help DEEP and municipalities protect water quality through improved land use decisions. Some of the programs include support to Municipal Separate Storm Sewer System communities, land

cover/impervious cover and forest fragmentation mapping, and a rain garden mobile application.

Management Characterization

1. *Indicate if the approach is employed by the state or territory and if there have been any significant state-level changes (positive or negative) in the development and adoption of procedures to assess, consider, and control cumulative and secondary impacts of coastal growth and development, including the collective effect on various individual uses or activities on coastal resources, such as coastal wetlands and fishery resources, since the last assessment.*

Significant Changes in Management of Cumulative and Secondary Impacts of Development

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Statutes, regulations, policies, or case law interpreting these	Y	Y	N
Guidance documents	Y	Y	N
Management plans (including SAMPs)	Y	Y	N

2. *For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:*

    a. *Describe the significance of the changes;*
    b. *Specify if they were 309 or other CZM-driven changes; and*
    c. *Characterize the outcomes or likely future outcomes of the changes.*

There were no significant changes since the last assessment; as such there is no additional information provided.

Enhancement Area Prioritization

1. What level of priority is the enhancement area for the coastal management program?

High _____
Medium __X__

Low _____

2. *Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.*

Cumulative and secondary impacts have been assigned a medium priority in light of the vast scope of programs already in effect in Connecticut to control these impacts associated with coastal development. Although development status and trends show continued increases in overall development and the level of impervious cover between 1995 and 2015, impervious cover has increased less than five percent in that decade, and that percentage increase does not reveal that much of this increase is likely controlled through the implementation Low Impact Development/Green Infrastructure practices incorporated into local and state development projects.

Thus, the Cumulative and Secondary Impacts enhancement area is once again characterized as a medium priority for this assessment. The activities surrounding dredged material management and marine spatial planning are treated in the Ocean and Great Lakes Resources section.

III.f – Special Area Management Planning

Section 309 Enhancement Objective: *Preparing and implementing special area management plans for important coastal areas (§309(a)(6)).*

PHASE I (HIGH-LEVEL) ASSESSMENT: *To quickly determine whether the enhancement area is a high-priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.*

Resource Characterization

1. *In the table below, identify geographic areas in the coastal zone subject to use conflicts that may be able to be addressed through a SAMP. This can include areas that are already covered by a SAMP but where new issues or conflicts have emerged that are not addressed through the current SAMP.*

Geographic Area	Opportunities for New or Updated Special Area Management Plans Major conflicts/issues
Lower Connecticut River	Invasive species especially common reed, (*Phragmites australis*) and the submerged aquatic plants water chestnut (*Trapa natans)* and Hydrilla *(Hydrilla verticillata)*; impaired habitat; development pressure
Lower Thames River	Several large-scale projects; development pressure (e.g., massive dredging and filling for expansion of submarine contractor Electric Boat, additional dredging and filling to convert New London State Pier to wind turbine component assembly, distribution and transport, national Coast Guard Museum); potential energy infrastructure development (cable landings); potential flooding of waterfront commercial areas
Bridgeport Harbor	Development pressure (e.g., proposed siting for wind farm component assembly and transport); potential energy infrastructure development (cable landings); loss of water-dependent uses to commercial development
Little Narragansett Bay, Stonington Harbor, Mystic Harbor, Poquonnock River, and Niantic River	Degradation of eelgrass beds; impaired habitat; development pressure
CT Coastal Zone	The effects of climate change (e.g., sea-level rise, marsh migration, more frequent and extensive flooding) are expected to pose use conflicts in both the near and long term, impaired habitat, development pressure

2. *If available, briefly list and summarize the results of any additional state- or territory-specific data or reports on the status and trends of SAMPs since the last assessment.*

N/A.

Management Characterization

1. *Indicate if the approach is employed by the state or territory and if there have been any significant state- or territory-level management changes (positive or negative) that could help prepare and implement SAMPs in the coastal zone.*

Significant Changes in Special Area Management Planning

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
SAMP policies, or case law interpreting these	N	N	N
SAMP plans	N	N	N

2. *For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:*
    a. *Describe the significance of the changes;*
    b. *Specify if they were 309 or other CZM-driven changes; and*
    c. *Characterize the outcomes or likely future outcomes of the changes.*

    There have been no significant management changes as the Connecticut Coastal Management program did not employ the SAMP strategy as part of the last assessment.

Enhancement Area Prioritization

1. *What level of priority is the enhancement area for the coastal management program?*

High _____
Medium __X___

Low _____

2. *Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.*

   Due to scope of LWRD efforts and programs, there has historically been limited need for formal SAMPs in Connecticut's coastal zone. However, during the last assessment period LWRD has noted that several major harbor/port areas (e.g., Bridgeport and the lower Thames River) are under increasing development pressures – particularly from emergent sectors such as renewable energy. As such, LWRD has elevated this category from low to medium, and will be closely monitoring these going forward for potential SAMP applications in future assessments.

III.g – Ocean and Great Lakes Resources

Section 309 Enhancement Objective: *Planning for the use of ocean [and Great Lakes] resources (§309(a)(7)).*

PHASE I (HIGH-LEVEL) ASSESSMENT: *To quickly determine whether the enhancement area is a high-priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.*

Resource Characterization

1. *Understanding the ocean and Great Lakes economy can help improve management of the resources it depends on. Using Economics: National Ocean Watch (ENOW) indicate the status of the ocean and Great Lakes economy as of 2015 (the most recent data) in the tables below. Include graphs and figures, as appropriate, to help illustrate the information. Note ENOW data are not available for the territories. The territories can provide alternative data, if available, or a general narrative, to capture the value of their ocean economy.*

Status of Ocean and Great Lakes Economy for Coastal Counties (2015)

	All Ocean Sectors	**Living Resources**	**Marine Construction**	**Ship & Boat Building**	**Marine Transportation**	**Offshore Mineral Extraction**	**Tourism & Recreation**
Employment (# of Jobs)	*53,230*	*745*	*344 in 2013*	*9,863*	*3,862*	*321 in 2014*	*38,074*
Establishments (# of Establishments)	*2,964*	*67*	*40 in 2013*	*16*	*127*	*25 in 2014*	*2,691*
Wages (Millions of Dollars)	*2,100*	*18.6*	*18.7 in 2013*	*894.6*	*250.4*	*21.5 in 2014*	*886.3*
GDP (Millions of Dollars)	*4,500*	*52.6*	*38.5 in 2013*	*1,700*	*649.4*	*111.7 in 2014*	*1,900*

Change in Ocean and Great Lakes Economy for Coastal Counties (2005-2015)

	All Ocean Sectors	Living Resources	Marine Construction	Ship & Boat Building	Marine Transportation	Offshore Mineral Extraction	Tourism & Recreation
Employment (# of Jobs)	*10,146*	*28*	*49 (2009-2013)*	*1,328*	*-1,447*	*-133 (2008-2014)*	*9,200*
Establishments (# of Establishments)	*539*	*-1*	*5 (2009-2013)*	*-4*	*4*	*2 (2008-2014)*	*539*
Wages (Millions of Dollars)	*600*	*7.5*	*7.9 (2009-2013)*	*310.4*	*-52.6*	*-5.7 (2008-2014)*	*320.7*
GDP (Millions of Dollars)	*1600*	*13.4*	*15.3 (2009-2013)*	*700*	*78.2*	*40.1 (2008-2014)*	*700*

2. *Understanding existing uses within ocean and Great Lakes waters can help reduce use conflicts and minimize threats when planning for ocean and Great Lakes resources. Using Ocean Reports, indicate the number of uses within ocean or Great Lakes waters off of your state. For energy uses (including pipelines and cables, see the "Energy and Government Facility Siting" template following). Add additional lines, as needed, to include additional uses that are important to highlight for your state.*

Uses within Ocean or Great Lakes Waters

Type of Use	Number of Sites
Federal sand and gravel leases *(Completed)*	Not applicable
Federal sand and gravel leases *(Active)*	Not applicable
Federal sand and gravel leases *(Expired)*	Not applicable
Federal sand and gravel leases *(Proposed)*	Not applicable
Beach Nourishment Projects	28
Ocean Disposal Sites	7
Principle Ports *(Number and Total Tonnage)*	2; 11,682,927
Coastal Maintained Channels	30
Designated Anchorage Areas	42
Danger Zones and Restricted Areas	1
Other (please specify)	n/a

3. *In the table below, characterize how the threats to and use conflicts over ocean and Great Lakes resources in the state's or territory's coastal zone have changed since the last assessment.*

Significant Changes to Ocean and Great Lakes Resources and Uses

Resource/Use	Change in the Threat to the Resource or Use Conflict Since Last Assessment (increase, decrease, unknown)
Benthic habitat (including coral reefs)	Waters: The threat to the resource (via measures of hypoxia) **remains high and unchanged** as result of continued nitrogen loading. Since the last assessment, as of 2017 (most recent data provided) areas of LIS with measured levels of lower dissolved oxygen have increased in the central basin (https://ecoreportcard.org/report-cards/long-island-sound/health/) Submerged Aquatic Vegetation: **No change**. The degree of threat to eelgrass remains **high** due to point and non-point nitrogen enrichment. Comparisons of data from the last assessment to the current indicate an approximate 9% decrease in acreage of eelgrass in the eastern areas of LIS, and it continues to remain absent in Western LIS and most of the Central Sound. (http://longislandsoundstudy.net/indicator/eelgrass-abundance/
Sand/gravel	The threat to sand and gravel remains moderate, unchanged since the last assessment. Potential adverse impacts on sand and gravel resources are mitigated by CGS § 22a-361(e)(1) which requires the payment of a fee for sand and gravel extraction. Sand and gravel extraction for construction aggregates has not taken place for decades. However, demand for sand for beach nourishment, particularly following periods of damaging coastal storms, can increase pressure for offshore sand extraction.
Other (please Specify)	N/A
Energy production	Change to this use conflict has **decreased**, as no substantive interest in wind or tidal energy facilities within LIS has been received by LWRD since the last assessment
Transportation/navigation	The threat posed by conflicts from transportation/navigation is **moderate, and remains unchanged** since the last assessment. LIS has heavily trafficked commercial shipping lanes and threats from accidents, particularly fuel/chemical spills, cannot be ignored. Reliance on open-water disposal to address the needs of navigation and maritime commerce remains high absent a realized plan to help reduce disposal through beneficial uses such as habitat restoration.

Fishing (commercial and recreational)	No change
Sand/gravel extraction	N/A
Living marine resources (fish, shellfish, marine mammals, birds, etc.)	Coastal Birds: Threats to coastal shorebirds are **high and unchanged** since the last assessment as human use, development pressure, and increased flooding work to constrict and/or degrade their habitat. While observational data allows us to report that the average number of nesting pairs of piping plovers (federally/CT threatened) have remained generally stable since the last assessment, least tern (CT threatened) nesting pairs observed during this assessment period for CT coasts have decreased, mainly as a result of a poor 2018 nesting season. (http://longislandsoundstudy.net/?indicator_categories=coastal-birds) Fish: Threats to finfish can be classified as **moderate and unchanged** since the last assessment. Primary threats result from ongoing increases in water temperatures as well as fishing effort. Since the last assessment, measures of finfish biomass index have shown increases while measures of species richness have maintained at levels from the end of the last assessment (which were at the low end of a 5-yr trend.) (http://longislandsoundstudy.net/?indicator_categories=fish-population-in-long-island-sound) Shellfish: Threats to shellfish are difficult to quantify and are listed as **unknown** at this point. Using the metric of approved acreage from the last assessment, CT has seen nearly 40K acres downgraded from restricted to prohibited. However, these resulted from administrative changes rather than water quality issues. Additionally, reporting for shellfish harvesting in CT has been inconsistent over the last assessment periods. Connecticut harvest data was not reported from 2010-2015. Harvesters re-established reporting their data to the Connecticut Department of Agriculture, Bureau of Aquaculture's Shellfish Sanitation Program in 2016. In spite of the 5-year data gap it appears that oyster harvests have increased while clams have declined somewhat.>(http://longislandsoundstudy.net/2010/06/approved-shellfish-acreage/) ; http://longislandsoundstudy.net/ecosystem-target-indicators/shellfish-harvested/ Lobsters: Threats to lobsters are **high** as a result of water quality issues, water temperatures, and fishing effort, and remain **unchanged** since the last assessment. Observational data indicates that lobster count measures in LIS Trawl surveys are minimal. (http://longislandsoundstudy.net/indicator/lobster-landings/)

Offshore development[12]	The threat posed by use conflicts resulting from offshore development (particularly cables and pipelines) **remains high and has marginally increased** since the last assessment. Offshore wind projects in federal waters have garnered interest in on-shore development projects in CT that could support wind turbine staging and transportation. Interest from the energy sector to deliver natural gas and other products to Long Island remains present. Offshore wind projects coming online have generated specific discussions of proposals for transmission cables through LIS to the CT shoreline.
Recreation/tourism	**Unchanged**. Lack of funding for new recreational and tourism facilities remains an issue. Despite several legal decisions since the last assessment that have upheld public access rights to shorelines and beaches, ongoing impediments to public access (e.g., shoreline development, local NIMBYism) also continue to pose issues.
Dredge disposal	The threat posed by conflicts over dredged disposal remains **high, and has increased** since the last assessment. Fundamental disputes between CT and NY interests and coastal programs are reflected in ongoing litigation over the designation of the Eastern Long Island Sound open water disposal site.and the Electric Boat dredging project that would utilize this site.
Aquaculture	CT's aquaculture industry continues to diversify and grow. The emerging seaweed aquaculture industry may increase potential conflict with shellfish aquaculture, boating and coastal residents. Conflicts between boat mooring fields and leased shellfish beds have been increasing.

[12] Offshore development includes underwater cables and pipelines, although any infrastructure specifically associated with the energy industry should be captured under the "energy production" category.

4. *For the ocean and Great Lakes resources and uses in the table above that had an increase in threat to the resource or increased use conflict in the state's or territory's coastal zone since the last assessment, characterize the major contributors to that increase. Place an "X" in the column if the use or phenomenon is a major contributor to the increase.*

Major Contributors to an Increase in Threat or Use Conflict to Ocean and Great Lakes Resources

	Land-based development	Offshore development	Polluted runoff	Invasive species	Fishing (Comm and Rec)	Aquaculture	Recreation	Marine Transportation	Dredging	Sand/Mineral Extraction	Ocean Acidification	Other (Specify)
Example: Living marine resources		*X*	*X*	*X*	*X*	*X*		*X*	*X*			
Dredge disposal												X (See Table 1)
Aquaculture							X (See Table 1)					

5. *If available, briefly list and summarize the results of any additional state- or territory-specific data or reports on the status and trends of ocean and Great Lakes resources or threats to those resources since the last assessment to augment the national data sets.*

The EPA Long Island Sound Study provides a compendium of various environmental indicators (water quality, marine and coastal animals, climate change, land use and population, and habitats) some of which were used to address part of this assessment. Future assessments can leverage the historic data to quantitatively address changes to threats.

The Long Island Blue Plan Resource and Use Inventory presents an objective and stakeholder/expert reviewed information summarized through a series of maps,

along with a narrative, and a historical and socio-economic context, to "tell a story" about a given sector. Further, each chapter presents an assessment of the data available, including how it meets adequate technical standards, as well as its overall accuracy, representativeness, and relevance to the Blue Plan, according to the stakeholders and experts who reviewed the information. The Inventory is divided into two major sections, the ecological characterization and human use characterization, each containing a series of chapters grouped by thematic relevance. (https://www.ct.gov/deep/lib/deep/long_island_sound/lis_blue_plan/resource_and_use_inventory_version_1-4_september_2019.pdf) A web-based map viewer providing access to various data layers is also available at http://cteco.uconn.edu/projects/blueplan/index.htm.

Benthic Mapping in Long Island Sound as part of a collection effort focused on the eastern area of Long Island Sound (in both CT and NY state waters). This expands the amount data collected during previous assessments and continues to provide insights regarding benthic habitats, living resources, geology, and physical oceanographic characteristics; more specifically including:

- Detailed grain size distribution patterns;
- Carbon, nitrogen, and metals concentrations in surface sediments;
- Variations of the sedimentary environments (Depositional, Non-Depositional/Erosional, Dynamic; High, Moderate, Low energy regimes and thickness of strata);
- Analyses of infaunal biota indicating benthic communities and their characteristics (and changes over time.)
- Analyses of emergent and epifaunal biota show variation associated with physical and temporal conditions;
- Distributions of oceanographic characteristics including temperature, salinity, and bottom stresses.

Management Characterization

1. *Indicate if the approach is employed by the state or territory and if any significant state- or territory-level changes (positive or negative) in the management of ocean and Great Lakes resources have occurred since the last assessment?*

Significant Changes to Management of Ocean and Great Lakes Resources

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Statutes, regulations, policies, or case law interpreting these	Y	Y	N
Regional comprehensive ocean/Great Lakes management plans	Y	N/A	Y (Northeast ROP completed)
State comprehensive ocean/Great Lakes management plans	Y (in process)	N	Y (Blue Plan submitted to CT Legislature)
Single-sector management plans	Y	N	Y (DMMP complete)

2. *For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:*
    a. *Describe the significance of the changes;*
    b. *Specify if they were 309 or other CZM-driven changes; and*
    c. *Characterize the outcomes or likely future outcomes of the changes.*

    LWRD has continued its ongoing participation in regional ocean planning through the Northeast Regional Planning Body, which reverted to the Ocean Planning Committee of the Northeast Regional Ocean Council in 2018. http://neoceanplanning.org/. The NE RPB finalized its Regional Ocean Plan during the last assessment period.

    LWRD's Regional Coastal and Marine Spatial Planning 309 Strategy did result in considerable progress in advancing marine spatial planning in Long Island Sound. 2015 legislation (CT PA 15-66, codified as CGS §25-157t) directed the Agency, in collaboration with academia and a variety of public stakeholders, to develop a LIS resource inventory and subsequent place-based spatial plan entitled the LIS Blue Plan. Through an intensive effort leveraging partnership across many groups and organizations (including the NOAA Coastal Fellowship) the Blue Plan and its required companion piece – the Long Island Sound Resource and Use Inventory - were completed and submitted to the CT state legislature in 2020 for approval, after extensive stakeholder outreach and input, including multiple workshops and public hearings.

LWRD has continued its ongoing role in LIS dredged material management effort through the northeast Regional Dredging team and associated Dredged Material Management Plan. The DMMP was finalized during the last assessment period, which instructs Connecticut to "reduce and or eliminate" open water dredged material disposal. As a result, LWRD is exploring methods to implement beneficial use of these materials for potential habitat restoration.

3. *Indicate if your state or territory has a comprehensive ocean or Great Lakes management plan.*

Comprehensive Ocean/Great Lakes Management Plan	**State Plan**	**Regional Plan**
Completed plan (Y/N) (If yes, specify year completed)	Y (2020 – pending Legislative approval)	y
Under development (Y/N)	n	n
Web address (if available)	www.ct.gov/deep/LISBluePlan	https://neoceanplanning.org/plan/
Area covered by plan	CT waters of LIS	Northeast region, including CT LIS

Enhancement Area Prioritization

1. *What level of priority is the enhancement area for the coastal management program?*

High __X__
Medium _____
Low _____

2. *Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.*

The development of the LIS Blue Plan and the LIS Resource and Use Inventory has provided a much needed mechanism to address limitations in holistic, large-scale planning for the offshore areas of the Sound. However, while developing the inventory and Plan, it has been re-enforced that there are numerous stakeholders reflecting both human use sectors and ecological resources that care deeply about the Sound and the processes used to protect those uses and resources and mitigate or prevent conflicts. The Blue Plan represents a critical step towards those goals but as with any new planning tool, careful implementation and monitoring will be required to ensure it is effectively used, particularly in the context of potential new proposals for energy transmission lines.

Additionally, as a result of EPA rules regarding dredged disposal siting in LIS, DEEP will need to assess both the capability and capacity to implement practical methods of beneficial use of dredged sediment. Stakeholders in CT are keenly interested in certain types of beneficial reuse projects to enhance coastal resources, improve shoreline protection, and expedite dredging projects by avoiding interstate conflicts over open-water disposal. As a result, the category of Ocean and Great Lakes Resources continues to receive a "high" priority.

III. h – Energy and Governmental Facility Siting

Section 309 Enhancement Objective: *Adoption of procedures and enforceable policies to help facilitate the siting of energy facilities and Government facilities and energy-related activities and Government activities which may be of greater than local significance (§309(a)(8)).*

PHASE I (HIGH-LEVEL) ASSESSMENT: *To quickly determine whether the enhancement area is a high-priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.*

Resource Characterization

1. *In the table below, characterize the status and trends of different types of energy facilities and activities in the state's or territory's coastal zone based on best-available data. If available, identify the approximate number of facilities by type. For ocean-facing states and territories (not Great Lakes states), Ocean Reports includes existing data for many of these energy facilities and activities.*

Status and Trends in Energy Facilities and Activities in the Coastal Zone

Type of Energy Facility/Activity	**Exists in Coastal Zone** (# or Y/N)	**Change in Existing Facilities/Activities Since Last Assessment**	**Proposed in Coastal Zone** (# or Y/N)	**Change in Proposed Facilities/Activities Since Last Assessment**
Pipelines		FERC Authorized Projects:		FERC Pending Projects:
	Y	**CP16-9** Algonquin Gas Transmission, LLC & Maritimes & Northeast Pipeline, L.L.C. (PF15-12) Atlantic Bridge Project	N	**CP19-07** Tennessee Gas Pipeline Company, L.L.C., 261 Upgrade Projects
	N	**CP14-529** Tennessee Gas Pipeline Company, L.L.C. Connecticut Expansion Project		
	Y	**CP14-96** Algonquin Gas Transmission, LLC (PF13-16) Algonquin Incremental Market (AIM) Project		

Ports	No current Port improvement projects under construction, but State Pier expansion imminent		Y Y Y	**New London State Pier** Major improvements to accommodate off-shore wind turbine assembly **New Haven Port** The expansion project will deepen the harbor channel, bringing the mean lower low water (MLLW) depth to 42 feet from 35 feet. **Stamford & Bridgeport Harbors** Proposal to establish wind energy operations & support hub, previous proposals to establish high speed commuter ferries.
Liquid natural gas (LNG)	No Known Projects		No Known Projects	
Other (please specify)	N/A			
Oil and gas	Y Y Y	PSEG's Bridgeport Harbor Station Unit #5, the new natural gas-fired power plant now online in Bridgeport, Conn., July 29, 2019 CPV Towantic 805-megawatt natural gas plant, which can also run on oil if needed, entered service in June 2018 (outside coastal area) NRG closed oil-fired, 342-megawatt Norwalk Harbor Station plant	 N	NTE Energy is developing and plans to construct, own and operate the Killingly Energy Center, a 650 MW natural gas-fired electric generating facility in Killingly, Connecticut Wallingford Energy LLC. operating two additional generating units of 50 MW each at the existing generating facility in 2018 Both facilities are outside the coastal area.

Coal	Y	PSEG permanently closed a 47-year-old coal-burning plant in Bridgeport in 2018	N	
Nuclear	Y	Millstone received 10 year CT contract for 2,100 megawatts of electricity from two existing units.	N	
Wind	N	Two wind turbines for 2.5 megawatts at peak output at Colebrook Wind Farm went online in 2015 in Colebrook, CT, outside the coastal area.	N	A new 3.8 megawatt wind turbine was announced for the site in 2017.
Wave	No Known Projects		No Known Projects	
Tidal	No Known Projects		No Known Projects	
Current (ocean, lake, river)	No Known Projects		No Known Projects	
Hydropower	N	Canton Hydro LLC constructing a 1-MW hydroelectric facility at the Upper Collinsville Dam on the Farmington River in Canton, CT, outside the coastal area	No Known Projects	
Ocean thermal energy conversion	No Known Projects		No Known Projects	
Solar	N Y	Solar Farms in Franklin, Somers and Simsbury, outside the coastal area Solar Farms in Branford, Norwich, East Lyme	N	Proposed Solar Farms in Brooklyn/Canterbury, Killingworth and Plainfield/Sterling, outside the coastal area
Biomass	N	Quantum Biopower operates only anaerobic digestion facility in Southington, outside the coastal area	N	Quantum Biopower announced proposed expansion of existing facility

Other (please specify) **Fuel Cells**	N	Various developers installed fuel cells power plants in Colchester, Derby, Hartford and in New Britain, outside the coastal area	No Known Projects	

2. *If available, briefly list and summarize the results of any additional state- or territory-specific information, data, or reports on the status and trends for energy facilities and activities of greater than local significance in the coastal zone since the last assessment.*

   In Connecticut, there are two main sources of information critical to current and future planning and management of energy facilities - ISO New England and the CT Siting Council:

   - **ISO New England** is the independent, not-for-profit company authorized by the Federal Energy Regulatory Commission (FERC) to perform three critical, complex, interconnected roles (grid operation, market administration & power system planning) for the region spanning Connecticut, Rhode Island, Massachusetts, Vermont, New Hampshire, and most of Maine. Together, these three responsibilities help protect the health of the region's economy and the well-being of its people by ensuring the constant availability of competitively priced wholesale electricity—today and for future generations. To aid in power system planning, reliability studies, and other processes, the ISO produces detailed long-term forecasts of the demand for electricity in New England. The ISO also forecasts the long-term growth of resources like energy efficiency and distributed generation that may impact the ISO's planning functions.

   - **The Connecticut Siting Council** is statutorily required to provide an annual review of Connecticut's electricity needs and resources, looking ahead ten years. The most recent of these reviews is detailed in the document entitled "Ten Year Forecast of Electric Loads and Resources 2018/19." The numbers, fuel types and output of energy facilities in each Coastal Zone town can be found in Appendix A of this document.

   The Public Utilities Regulatory Authority (PURA) has a significant impact on the integration of clean energy sources through the administration of the Connecticut Renewable Portfolio Standard (RPS), which is a state policy that requires electric providers to obtain a specified percentage or amount of the energy they generate or sell from renewable sources. This policy creates a financial incentive for development of renewable energy projects by ensuring a market and steady stream of revenue for renewable generators. Owners of electricity generation projects that qualify as renewable under one of the three classes of Connecticut's RPS receive one renewable energy certificate (REC) for every megawatt-hour (MWh) of electricity they produce. These RECs are tradable commodities that allow the environmental attribute of the renewable energy to be bought and sold separately from the energy commodity itself. A renewable generator can either contract to sell its energy — "bundled" with the accompanying attribute value directly to an electricity provider (usually at a premium above the wholesale electricity price), or it can "unbundle" the REC and the energy and sell them separately in regional wholesale markets. Specific standards and criteria are listed on PURA's website.

3. *Briefly characterize the existing status and trends for federal government facilities and activities of greater than local significance[13] in the state's coastal zone since the last assessment.*

   In the past, military base closures and consolidations have affected Connecticut's coastal area through the closure of the Stratford Army Engine Plant and the Naval Undersea Warfare Center in New London, and the threatened closure of the New London Submarine Base. The coastal issues related to these base closures were successfully addressed by LWRD through municipal coastal site plan review, state regulation, and federal consistency requirements applying the existing resource protection and water-dependent use standards of the CMA. The remediation, transfer and ultimate reuse of the Stratford Army Engine Plant, however, are still pending and LWRD will continue to work with DEEP Remediation staff and the Department of the Army to promote appropriate reuse of this waterfront site.

   Current activities at federal government facilities within the coastal zone have consisted of maintenance, repair and minor expansion projects deemed to be consistent with the CT Coastal Management Act. Of note, the National Coast Guard Museum at the north end of the Waterfront Park in downtown New London, adjacent to the new City Pier and Promenade is in the design phase and officials are actively fundraising for what would be a significant new waterfront museum

Management Characterization

1. *Indicate if the approach is employed by the state or territory and if significant state- or territory-level changes (positive or negative) that could facilitate or impede energy and government facility siting and activities have occurred since the last assessment.*

[13] The CMP should make its own assessment of what Government facilities may be considered "greater than local significance" in its coastal zone, but these facilities could include military installations or a significant federal government complex. An individual federal building may not rise to a level worthy of discussion here beyond a very cursory (if any at all) mention).

Significant Changes in Energy and Government Facility Management

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Statutes, regulations, policies, or case law interpreting these	Y	N	Y
State comprehensive siting plans or procedures	Y	N	Y

2. *For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:*
    a. *Describe the significance of the changes;*
    b. *Specify if they were 309 or other CZM-driven changes; and*
    c. *Characterize the outcomes or likely future outcomes of the changes.*

    Below are links to recent Public Acts and plan/strategy updates that have impacted Connecticut's energy procurement, planning and implementation strategies. While none of them have been driven by 309 or other coastal management consideration, they will all affect Connecticut's future energy facility landscape by promoting increased use of renewable and distributed generation. As a result, we can expect to review proposals such as new electric transmission cables from distant renewable sources, structural protection for coastal microgrid and generating facilities, and redevelopment of decommissioned fossil fuel powerplants within the coastal area during the next assessment period.

    - **Affordable and Reliable Electricity Procurement:** Public Act 15-107, An Act Concerning Affordable and Reliable Energy, authorizes the Commissioner of DEEP, in consultation with the state's procurement manager, the Office of Consumer Counsel, and the Attorney General, to issue multiple solicitations—either alone or in coordination with other New England states—for long-term contracts from providers of resources that can provide Connecticut's reasonable share of the investments New England needs to address the gas infrastructure challenge.

    - **Comprehensive Energy Strategy (CES) - 2017 Draft Strategy Released July 26, 2017:** Connecticut General Statute section 16a-3d requires DEEP to

periodically update Connecticut's Comprehensive Energy Strategy. The Comprehensive Energy Plan is an assessment and strategy for all energy needs, including electricity, heating, cooling, and transportation. It must draw from the conclusions reached in the IRP as well as the findings from the energy efficiency plan and the renewable energy plan.

- **Conservation & Load Management (C&LM) - 2019-2021 Plan Approved December 20, 2018:** Connecticut General Statutes section 16-245m describes Connecticut's energy efficiency investment plan.

- **Integrated Resource Plan (IRP) – 2014 Final Plan Released March 17, 2015:** Connecticut General Statutes section 16a-3a requires DEEP to assess Connecticut's future electric needs and develop a plan to meet those needs through a mix of generation and energy efficiency.

- **Microgrid Grant and Loan Pilot Program:** Section 7 of Public Act 12-148 requires DEEP to establish a microgrid grant and loan pilot program to support local distributed energy generation for critical facilities.

- **Natural Gas Expansion Plan:** Section 51 of Public Act 13-298 requires Connecticut's Local Distribution Companies (LDCs) to jointly submit a natural gas infrastructure expansion plan to DEEP and PURA consistent with the goals of the 2013 CES by June 15, 2013. The LDCs submitted a ten year plan that would provide gas heating services to an additional 280,000 low-use, on-main, and off-main residents and businesses in Connecticut. In the Final Decision (Docket No. 13-06-02) dated November 22, 2013, PURA approved, with modifications, a regulatory model for the LDCs to carry out such a plan.

Enhancement Area Prioritization

1. *What level of priority is the enhancement area for the coastal management program?*

   High _____
   Medium __X___
   Low _____

2. *Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.*

   Connecticut's energy future should have a significant impact on existing infrastructure and natural resources in the coastal area, especially with new off-shore wind development, expansion of gas and electric transmission facilities, new solar farms and enhanced resiliency of existing power generating plants. It is DEEP's opinion that

the current state and municipal regulatory framework can adequately handle these challenging projects. Therefore, DEEP considers this a "Medium" enhancement area to its coastal management program.

III.i - Aquaculture

Section 309 Enhancement Objective: *Adoption of procedures and policies to evaluate and facilitate the siting of public and private aquaculture facilities in the coastal zone, which will enable states to formulate, administer, and implement strategic plans for marine aquaculture (§309(a)(9)).*

PHASE I (HIGH-LEVEL) ASSESSMENT: *To quickly determine whether the enhancement area is a high-priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.*

Resource Characterization

1. *In the table below, characterize the existing status and trends of aquaculture facilities in the state's coastal zone based on the best available data.*

Type of Facility/Activity	Status and Trends of Aquaculture Facilities and Activities		
	# of Facilities	Approximate Economic Value	Change Since Last Assessment
Shellfish operations	45		Increase
Kelp operations	4		Slight increase
Eel grow-out farm	1		Increase
Private oyster hatchery	1		Static
Commercial oyster hatchery	3		Increase
		Estimated value of above facility/activity is $25 million	Slight decrease

2. *If available, briefly list and summarize the results of any additional state-specific data or reports on the status and trends or potential impacts from aquaculture activities in the coastal zone since the last assessment.*

CT DEEP-LWRD itself has not prepared any data or report. In 2015, the Connecticut Department of Agriculture Bureau of Aquaculture (DA/BA) planned to mandate and collect specific aquaculture data (harvest information-bags/bushels of shellfish) from industry and issue a report. However, recent changes to the National Shellfish Sanitation Program Model Ordinance require the Shellfish Authority in each shellfish producing state to determine and report to the Interstate Shellfish Sanitation Conference the volume of shellfish harvested in that state. The intent of this new requirement is to allow the authority (in CT, DA/BA) to accurately assess the risk of illness associated with shellfish produced in the state.

In order to meet the new requirements, Connecticut's shellfish program will begin participating in the Atlantic Coastal Cooperative Statistics Program (ACCSP) via the Standard Atlantic Fisheries Information System (SAFIS) beginning with a pilot program to be implemented in 2020.

The ACCSP SAFIS e-Trips online reporting tool will allow Connecticut managers to collect accurate shellfish production data, including that associated with aquaculture production, via the use of an online reporting system that provides ease of use and confidentiality for producers, while providing data management and data security for managers and program partners. Data to be collected for each harvest trip includes date, start time, CT shipper number, vessel, shellfish growing area fished, lease fished, type of gear used, activity type, species harvested, quantity harvested, size class harvested.

In addition to risk assessments, the data collected will allow managers to accurately assess the economic value of Connecticut's shellfish industry, and more specifically aquaculture production, at a level of detail never before possible. CT Sea Grant will then follow-up with a full economic assessment including the indirect impacts and economic multipliers for maritime industries. Currently, CT Sea Grant is working on an economic assessment of recreational harvest.

Management Characterization

1. *Indicate if the approach is employed by the state or territory and if there have been any state-level changes (positive or negative) that could facilitate or impede the siting of public or private aquaculture facilities in the coastal zone.*

Management Category	**Employed by State or Territory** (Y or N)	**CMP Provides Assistance to Locals that Employ** (Y or N)	**Significant Changes Since Last Assessment** (Y or N)
Aquaculture comprehensive siting plans or procedures	Y	Y	Y
Other aquaculture statutes, regulations, policies, or case law interpreting these	Y	Y	Y

2. *For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:*

    a. *Describe the significance of the changes;*
    b. *Specify if they were 309 or other CZM-driven changes; and*
    c. *Characterize the outcomes or likely future outcomes of the changes.*

    Most of the following significant changes have come about through efforts of the Connecticut Department of Agriculture/Bureau of Aquaculture (DOA/BOA). For example, DOA/BOA has undergone a modernization of shellfish bed management.

    Connecticut Aquaculture Permitting Workgroup- The regulatory process for marine aquaculture and research involving aquatic organisms in Connecticut involves application review by state and federal agencies, as well as advisory comments by municipal shellfish commissions. As such, the process can become complex and burdensome if the applicant does not understand what is expected of them when completing an application. This has led to permitting delays, which are costly to producers, researchers and regulatory agencies. In an effort to prevent delays and reduce the time to acquire the necessary permits, the Connecticut Aquaculture Permitting Workgroup[14] , has developed a sub-committee to develop a set of

[14] A partnership among Connecticut Sea Grant, the Connecticut Department of Agriculture/Bureau of Aquaculture, Connecticut DEEP and the U.S. Army Corps of Engineers/New England District.

recommendations to help streamline the aquaculture permitting process. The workgroup meets a couple times a year, but maintains regular coordination via phone and email to discuss projects, applications, and policies. Furthermore, the group works collectively with permit staff, federal agencies, state agencies, and local universities to address concerns of the aquaculture industry and associated resource managers. The workgroup has developed a variety of educational materials to inform applicants of the requirements of the various types of aquaculture permits and licenses. With Connecticut Sea-Grant taking the lead, the workgroup has also developed an updated Pre-Application Screening Form titled, **Joint Agency Application to Conduct Marine Aquaculture in Connecticut.** This form is provided to potential applicants. The form allows regulating agencies to quickly determine if the location and activity place the project within the guidelines for the general aquaculture permitting process and State of CT exemption, or if the project will require a more extensive application and review process.

Beginning in January of 2018, the process of logging in applications to conduct marine aquaculture in Connecticut to DEEP's permitting database has been improved. DEEP's SIMS has been updated to include a new DEEP Program: Aquaculture Exemption Determination (AED) and has been associated with all aquaculture gear features. Creating a new DEEP Program solely for Aquaculture proposals will ensure that these types of activities are accurately represented and easily identifiable in SIMS. In addition, a new AED summary template have been created to summarize the aquaculture proposal and qualifications for exemption from LWRD permitting.

In addition, A Guide to Marine Aquaculture has been updated by the Workgroup to provide information about the regulatory process of commercial shellfish and seaweed aquaculture in July of 2019. This handbook has been streamlined and updated so that the information regarding permit process at the State and Federal level effectively assists the applicants through the process, including references to the Long Island Sound Blue Plan. The Blue Plan contains maps and descriptions of Significant Human Use Areas, and is an important resource and tool in planning locations for aquaculture projects. The Blue Plan was submitted to the CT General Assembly in February 2020 for review and adoption

The CT Aquaculture Mapping Atlas was developed by UCONN/CT Sea Grant-to assist shellfish farmers and shellfish commissions in reviewing aquaculture projects and in preparing applications. The CT Aquaculture Permitting Workgroup also uses this atlas to assist in their reviews. In 2017 tools were improved and data layers were incorporated that are essential to the Workgroup when reviewing aquaculture applications.

The CT Shellfish Initiative/CT Shellfish Management Plan was planning effort that created a vision for the future of CT Shellfish Resources. This vision covers all molluscan shellfish of commercial and recreational importance. The intent of this plan

is to provide comprehensive policy guidance regarding state management and protection measures for molluscan shellfish resources in town and state waters. The effort will involve multiple federal, state and local agencies, and will engage a broad and diverse group of stakeholders in identifying policies and practices to protect and enhance the State's natural shellfish resources, to promote sustainable commercial harvest and agricultural viability. DEEP-LWRD is a member of the CT Shellfish Initiative Steering Committee. The roles of this Committee are as follows: 1) identify stakeholder groups 2) identify stakeholder concerns and opportunities 3) assess relevance of stakeholder recommendations; 4) provide context for challenges identified; and 5) propose creative solutions (actions).

Seaweed Production and Processing in Connecticut: A Guide to Understanding and Controlling Potential Food Safety Hazards was published by Connecticut Sea Grant in partnership with the state Department of Agriculture Bureau of Aquaculture on January 31, 2020. This guide for Connecticut seaweed growers and processors provides recommended guidelines on food safety practices to minimize biological, chemical and physical hazards associated with the production, storing, handling, processing and transportation of seaweed in Connecticut.

A General Permit ("GP") for Coastal Maintenance was issued on October 26, 2015. The GP includes the placement of cultch. The term *"Cultch"* means a substrate appropriate for larval oyster attachment, consisting of gravel or shell material.

For the 2020 Legislative Session, The Bureau of Water Protection & Land Reuse has submitted a legislative proposal this session to clarify the applicability of Aquaculture Gear Exemption from LWRD permitting in a Minor Revisions Bill. The proposed language change is as follows:

> Subsection (c) of section 22-11h is to be amended to read:
> "...(c) Individual structures used for aquaculture as defined in section 22-11c, including, but not limited to, racks, cages or bags, as well as buoys marking such structures, which have received a permit under federal USACE regulations and do not interfere with navigation in designated or customary boating or shipping lanes and channels, shall be placed in leased or designated shellfish areas and shall be exempt from the requirements of sections 22a-359 to 22a-363f, inclusive."

One of the criteria for an aquaculture project to qualify for exemption pursuant to CGS Sec. 22-11h(c) is that the project does not, "...otherwise require a permit under federal USACE regulations." However, all aquaculture projects require a permit from the USACE, whether it be an Individual Permit, CT General Permit category of Pre-Construction Notification or Self-Verification. It is DEEP's interpretation that the statute was intended to apply only to individual USACE permits, which are used only for the most complex or controversial applications. In practice, the Interagency Aquaculture Working Group has followed this interpretation, and not required a DEEP permit under sections 22a-359 through 22a-363f for USACE-authorized

projects. The proposed language change would codify this practice and provide certainty for agencies, applicants, and the general public.

Enhancement Area Prioritization

1. *What level of priority is the enhancement area for the coastal management program?*

   High: _____
   Medium: ___X_____
   Low _____

2. *Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.*

   The state's planning and regulation of aquaculture operations has not significantly changed since the last assessment, and is overseen and largely implemented by the CT Department of Agriculture/Bureau of Aquaculture (CT DA/BA). The USACE exercises federal regulatory authority over aquaculture structures in State's waters. Many regulated activities in CT's tidal, coastal and navigable waters are covered under the US USACE Programmatic General Permit (PGP), which essentially piggybacks the LWRD regulatory process. Most of the aquaculture activities are eligible for review under the USACE's PGP for Connecticut for which LWRD has already issued federal coastal consistency. Since LWRD maintains responsibility for determining coastal management consistency when aquaculture projects require an federal permit, a coordinated regulatory approach has been developed (see sections above relating to the Aquaculture Permitting Workgroup and Joint Agency Application to Conduct Marine Aquaculture in Connecticut Pre-Application Screening Form).

IV. Phase II: Enhancement Area Analysis

Phase II.a – Coastal Hazards

In-Depth Resource Characterization: *To determine key problems and opportunities to improve the CMP's ability to prevent or significantly reduce coastal hazard risks by eliminating development and redevelopment in high-hazard areas and managing the effects of potential sea level rise and Great Lakes level change.*

1. *Based on the characterization of coastal hazard risk, what are the three most significant coastal hazards within your coastal zone? Also, indicate the geographic scope of the hazard, i.e., is it prevalent throughout the coastal zone, or are there specific areas most at risk?*

	Type of Hazard	**Geographic Scope** (throughout coastal zone or specific areas most threatened)
Hazard 1	General Flooding	Throughout coastal zone
Hazard 2	Storm Surge Flooding	Throughout coastal zone
Hazard 3	Sea Level Rise	Throughout coastal zone
Hazard 4	Coastal erosion	Throughout coastal zone

2. *Briefly explain why these are currently the most significant coastal hazards within the coastal zone. Cite stakeholder input and/or existing reports or studies to support this assessment.*

   General flooding and flooding due to increased storm surge is occurring in increased frequency throughout the coastal zone. Due to historic and current development patterns, little open space is available for use as compensatory storage during heavy rain and storm events (including winter storms and Nor'Easters). Developers and property owners continue to put pressure on remaining undeveloped coastal resources that are critical to the support native and protected species of flora and fauna, and that serve minimize impacts for increased storms and their associated flooding impacts on people and property.

   Sea Level Rise is projected to increase the impacts of coastal storm events, including flooding by storm surge. This includes projected increases in the number of days of non-storm influenced or "sunny day" road flooding, which is anticipated to complicate storm evacuation route planning. In addition, potential increases of impacts from coastal flooding and erosion resulting from the loss of coastal marsh storm mitigation

services, particularly in areas of existing low marsh, are projected under extreme sea level rise scenarios by the end of the century.

Non-episodic erosion (i.e., longer-term erosion trends that take into account the net effect of seasonal variations) represents a threat that has recently been re-assessed, updating information originally prepared during the very early years of Connecticut's Coastal Management Program nearly 35 years ago. A report entitled, Analysis of Shoreline Change in Connecticut - 100+ Years of Erosion and Accretion: Methodology and Summary Results, was developed by a cooperative effort between the Connecticut Department of Energy & Environmental Protection (DEEP), the Connecticut Sea Grant (CT Sea Grant) and the University of Connecticut Center for Land Use Education and Research (UCONN-CLEAR). The report identified shoreline erosion amounts and rates across the coast. It noted that while erosion is a factor to some degree coast-wide, areas in the central part of the state and along coastal marshes and barrier beaches show higher magnitudes of erosion.

There is extensive anecdotal and photographic information of flooding and erosion impacts, particularly following severe storms. Following Storm Irene, the Connecticut Shoreline Preservation Task Force compiled information about flooding and erosion risks from various experts and stakeholders and produced a recommendations report. The USACE North Atlantic Comprehensive Coastal Study assesses these vulnerabilities. Online tools such as DEEP's Coastal Hazards Viewer, TNC's Coastal Resilience Tool, and CIRCA's Sea Level Rise and Storm Surge Map Viewer visually illustrate potential impacts of rising sea level and storm surges.

3. *Are there emerging issues of concern, but which lack sufficient information to evaluate the level of the potential threat? If so, please list (Include additional lines if needed).*

Emerging Issue	**Information Needed**
Wetland loss/retreat	Ongoing analysis of recently acquired Sea-Level Affecting Marsh Migration (SLAMM) data to identify and communicate areas of concern; additional analyses taking into account site-specific conditions for areas of elevated threat and/or high resource value. Better understanding of the effects of tidal restrictions (e.g. culverts, tide gates) on coastal marsh resilience and developed land cover flooding. High-resolution landcover data.
Effects of climate change	Sentinel monitoring for key environmental indicators; access to and interpretation of historic data sources.

Sea Level Rise	Updated Sea level rise projections scaled to LIS.
Storm surge inundation	High resolution modeling of coastal storm surge, riverine flooding, and the interaction of coastal and riverine flooding (currently under development with CIRCA). Accurate mapping of vulnerable housing and infrastructure based on improved modeling. High resolution landcover data.

In-Depth Management Characterization

To determine the effectiveness of management efforts to address identified problems related to the coastal hazards enhancement objective.

1. *For each coastal hazard management category below, indicate if the approach is employed by the state or territory and if there has been a significant change since the last assessment.*

Significant Changes in Coastal Hazards Statutes, Regulations, and Policies

Management Category	Employed by State/Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Change Since the Last Assessment (Y or N)
Statutes, Regulations, and Policies:			
Shorefront setbacks/no build areas	N	N	Y – local floodplain management
Rolling easements	N	N	N
Repair/rebuilding restrictions	Y	Y	Y
Hard shoreline protection structure restrictions	Y	Y	Y
Promotion of alternative shoreline stabilization methodologies (i.e., living shorelines/green infrastructure)	Y	Y	Y
Repair/replacement of shore protection structure restrictions	Y	Y	Y
Inlet management	N	N	N
Protection of important natural resources for hazard mitigation benefits (e.g., dunes, wetlands, barrier islands, coral reefs) other than setbacks/no build areas	Y	Y	Y

Repetitive flood loss policies (e.g., relocation, buyouts, etc.)	Y	Y	N
Freeboard requirements	Y – changes to the state building code	N	Y – some coastal communities do require 1-2 feet of freeboard
Real estate sales disclosure requirements	N	N	N
Restrictions on publicly funded infrastructure	Y	Y	N
Infrastructure protection (e.g., considering hazards in siting and design)	Y	Y	N
Other (please specify)	-	-	-
Management Planning Programs or Initiatives:			
Hazard mitigation plans	Y	Y	Y
Sea level rise or climate change adaptation plans	Y	Y	Y
Statewide requirement for local post-disaster recovery planning	N	N	N
Sediment management plans	N	N	N
Beach nourishment plans	N	N	N

Special Area Management Plans (that address hazards issues)	N	N	N
Managed retreat plans	N	N	N
Other: Establishment of State Long-Term Recovery Committee	Y –Established after Sandy -	N	-N
Other: Threat and Hazard Incident Risk Assessment (THIRA)	Y – FEMA requirement for all states	N	N
Research, Mapping, and Education Programs or Initiatives:			
General hazards mapping or modeling	Y	Y	Y
Sea level rise mapping or modeling	Y	Y	Y
Hazards monitoring (e.g., erosion rate, shoreline change, high-water marks)	Y	Y	Y
Hazards education and outreach	Y	Y	N
Other (please specify)	-	-	-

2. *Identify and describe the conclusions of any studies that have been done that illustrate the effectiveness of the state's management efforts in addressing coastal hazards since the last assessment. If none, is there any information that you are lacking to assess the effectiveness of the state's management efforts?*

There is no definitive quantitative assessment comparing past and current state of coastal hazard vulnerability upon which to base a conclusion. The USACE NACCS may provide a good baseline of comparison for a similar characterization in the future. In addition, worked performed by CIRCA may add data support for this illustration, although most CIRCA work is geared toward assessing and adapting to future conditions. For example, CIRCA is undertaking an extensive resilience planning project entitled Resilient Connecticut: Resilient Connecticut will provide the state with a regional and watershed focused Climate Adaptation Planning Framework piloted in the Superstorm Sandy impacted regions of New Haven and Fairfield Counties. The project will generate recommendations for a Statewide Resilience Roadmap that includes regional resilience and adaptation planning, policy consideration, and actionable priorities. In addition, science-based regional risk assessments will inform municipal to regional scale initiatives and pilot projects. Resilient Connecticut's guiding principle is to establish resilient communities through smart planning that incorporates economic development framed around resilient transit-oriented development, conservation strategies, and critical infrastructure improvements.

The CT Coastal Management Program notes the following accomplishments with respect to Hazards Resilience:

- (SLAMM) discuss the encouragement for communities to utilize this modeling for their hazard mitigation and local planning efforts;
- The CT CMP has successfully worked with partners to restore coastal habitats and protect coastal lands to increase coastal resilience – For example, CT DEEP is working in the Towns of Guilford and Madison to develop a coastal marsh resilience strategy to sustain the East River Marsh.

Identification of Priorities

1. *Considering changes in coastal hazard risk and coastal hazard management since the last assessment and stakeholder input, identify and briefly describe the top one to three management priorities where there is the greatest opportunity for the CMP to improve its ability to more effectively address the most significant hazard risks (Approximately 1-3 sentences per management priority.).*

Management Priority 1: Develop Applied Science and Policy Analysis

Description: Collaborate with CT Institute for Resiliency and Climate Adaptation (CIRCA). CIRCA represents a partnership between DEEP and UCONN to increase the resilience and sustainability of vulnerable communities along Connecticut's coast and inland waterways to the growing impacts of climate change on the natural, built, and human environment. By working to identify critical issues relating to flooding, coastal resource threats (e.g., wetland retreat), infrastructure resilience, and planning policies we can leverage targeted research and communication resources to extend the ability of the Coastal Management Program to address, respond to, and communicate resiliency strategies to the public.

Management Priority 2: Living Shoreline Program

Description: In an effort to address ongoing pressure by both property owners and legislators to allow more structural solutions to coastal erosion,it is a priority need to establish a legal definition of living shorelines, develop best practices and to conduct outreach to assist coastal property owners with selecting the most environmentally acceptable approach to managing shoreline erosion in coastal hazard areas.

Management Priority 3: Historic Shoreline Change - Causal Analysis and Impacts Assessment

Description: Building on a recent shoreline change assessment to look more closely at areas of significant change to examine causes and offer possible management alternatives that can mitigate future impacts.

2. *Identify and briefly explain priority needs and information gaps the CMP has for addressing the management priorities identified above. The needs and gaps identified here should not be limited to those items that will be addressed through a Section 309 strategy but should include any items that will be part of a strategy.*

Priority Needs	**Need?** (Y or N)	**Brief Explanation of Need/Gap**
Research	Y	Efficacy of alternative shoreline erosion control (non-structural, soft structures/living shorelines, etc.) for CT coastal environments; extended research of recent shoreline change assessment to address potential causes and impacts of shoreline change; analysis of policy implementation issues and financing options for increasing resilience.

Mapping/GIS/modeling	Y	Revisions to coastal boundary resulting from FEMA Flood Plain re-delineations; analysis of CT SLAMM marsh migration data to identify areas of concern/threat; high resolution modeling of coastal and riverine flooding; improved wave data and modeling; improved mapping of vulnerable housing and infrastructure. High resolution landcover data.
Data and information management	N	
Training/Capacity building	Y	Best practices and training for the engineering community on living shorelines and other alternatives to hard structures.
Decision-support tools	Y	Need definition of living shoreline in statute. Risk-based tools for assessing infrastructure vulnerability.
Communication and outreach	Y	Support for any and all research/Mapping efforts to educate and increase public awareness.
Other (Specify)	N/A	N/A

Enhancement Area Strategy Development

1. *Will the CMP develop one or more strategies for this enhancement area?*
   Yes __X____
   No _____

2. *Briefly explain why a strategy will or will not be developed for this enhancement area.*

   As better data and information become available on aspects of adapting to coastal hazards, state and local agencies will need updated guidance on the application of the latest science and policy guidance to manging regulated activities in the coastal area. LWRD can play an important role in translating new adaptation approaches that will result from ongoing efforts by the GC3 Adaptation Work Group and CIRCA's Resilient Connecticut project into improved guidance for land use in coastal hazard areas.

   he concept of Living Shorelines as a more sustainable and resilient and less environmentally damaging approach to shoreline protection than traditional hard structures is becoming more prominent, and was referenced in recent legislation. However, because there is little on-the-ground experience with such approaches in Connecticut, there is confusion about what constitutes an effective Living Shoreline, and more detailed and explicit guidance is needed to provide regulatory clarity and foster implementation of these alternatives.

Phase II.b – Ocean and Great Lakes Resources

In-Depth Resource Characterization

Purpose: To determine key problems and opportunities to enhance the ability of state CMP to better address ocean and Great Lakes resources.

1. *What are the three most significant existing or emerging stressors or threats to ocean and Great Lakes resources within your coastal zone? Indicate the geographic scope of the stressor, i.e., is it prevalent throughout the coastal zone, or are specific areas most threatened? Stressors can be land-based development; offshore development (including pipelines, cables); offshore energy production; polluted runoff; invasive species; fishing (commercial and/or recreational); aquaculture; recreation; marine transportation; dredging; sand or mineral extraction; ocean acidification; or other (please specify). When selecting significant stressors, also consider how climate change may exacerbate each stressor.*

	Stressor/Threat	**Geographic Scope (throughout coastal zone or specific areas most threatened)**
Stressor 1	Use conflicts with ocean resources and human uses; e.g. impacts of cable and pipeline installation on benthic habitats; impacts of aquaculture on recreational boating and coastal residents.	All LIS and coastal communities
Stressor 2	Dredged material management	All LIS, although commercial port/harbor facilities are areas of specific concern.
Stressor 3	Pollution/climate change	All LIS

2. *Briefly explain why these are currently the most significant stressors or threats to ocean and Great Lakes resources within the coastal zone. Cite stakeholder input and/or existing reports or studies to support this assessment.*

   The Phase 1 assessment presents the case that benthic habitats and living marine resources in LIS are still seeing the ongoing impacts of water quality issues (e.g. nutrient loading) as well changes in temperature (likely resulting from shifts in climate) and of human uses impacts (e.g., increased fishing efforts.) Additionally, use conflict stressors (notably onshore development pressures, offshore development threats, and dredged material management) are continuing.

3. *Are there emerging issues of concern, but which lack sufficient information to evaluate the level of the potential threat? If so, please list (Include additional lines if needed).*

Emerging Issue	Information Needed
Potential use conflicts revolving around increased activity in off-shore energy sectors: Although LIS is an unlikely area to support off-shore facilities such as wind farms, the energy sector has already mentioned proposals to use LIS for shipping (transit of materials), cables/pipelines (infrastructure connections), or construction staging areas.	More definitive information regarding potential project locations and parameters, so that any potential use conflicts can be evaluated within the framework of the Blue Plan.
Use conflicts between gear-based aquaculture and coastal residents concerned with navigational and visual impacts	Potential aquaculture development sites near shore or areas of recreation boating and fishing activity. Blue Plan data will need to be regularly updated.

In-Depth Management Characterization

Purpose: To determine the effectiveness of management efforts to address identified problems related to the ocean and Great Lakes resources enhancement objective.

1. *For each of the additional ocean and Great Lakes resources management categories below that were not already discussed as part of the Phase I assessment, indicate if the approach is employed by the state or territory and if significant state- or territory-level changes (positive or negative) have occurred since the last assessment.*

Significant Changes in Management of Ocean and Great Lakes Resources

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Ocean and Great Lakes research, assessment, monitoring	Y	Y	Y
Ocean and Great Lakes GIS mapping/database	Y	Y	Y
Ocean and Great Lakes technical assistance, education, and outreach	Y	Y	Y
Other (please specify)	N/A	N/A	N/A

2. *For management categories with significant changes since the last assessment, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information.*
    a. *Describe significant changes since the last assessment;*
    b. *Specify if they were 309 or other CZM-driven changes; and*
    c. *Characterize the outcomes or likely future outcomes of the changes.*

    With the use of 309 resource and in partnership with multiple entities[15], LWRD continues to support a LIS Benthic Mapping Program using funds from a settlement account created by enforcement actions on three utility companies' cable crossings. The results of a pilot study and some of the preliminary findings from the ongoing an additional Phase 2 investigation in a substantial area of eastern Long Island Sound have provided a wealth of geologic, ecologic, and physical data that were leveraged by the LIS Blue Plan spatial planning effort. As a result, the products and processes being developed for Phase 2 are anticipated to be implemented in additional areas of western and parts of central LIS that are expected to generate equally useful products and information to further extend and enhance spatial planning and resource management.

    Since the last assessment the CT CZM program (using 309 and other CZM resources) completed the LIS Blue Plan and associated LIS Resources and Use Inventory required by PA 15-66. Intended to support both water-dependent uses and the marine environment, this marine spatial planning initiative compiled an inventory of Long Island Sound resources and uses and established siting priorities, standards, and science-based management practices to foster sustainable uses, activities and habitats. The Blue Plan provides an unprecedented level of technical assistance, information and guidance for the open areas of Long Island Sound. Using Blue Plan tools, stakeholders, project proponents, and permitting authorities will all have the same information to evaluate and substantiate more objective and well-informed decisions for regulated activities within the designated Blue Plan policy area

3. *Identify and describe the conclusions of any studies that have been done that illustrate the effectiveness of the state's or territory's management efforts in planning for the use of ocean and Great Lakes resources since the last assessment. If none, is there any information that you are lacking to assess the effectiveness of the state's or territory's management efforts?*

    Two outcomes from the Blue Plan process that illustrate the effectiveness of CT's management efforts relative to ocean and Great Lakes resources were the

[15] Entities included in this joint effort include: the EPA Long Island Sound Study, New York Department of Environmental Conservation, New York Department of State, and the Sea Grant offices of Connecticut and New York.

identification and delineation of special areas in the Sound for ecological reasons (Ecologically Significant Areas – ESAs) and human uses (Significant Human Use Areas.) Both ESAs and SHUAs are important, more than any random location in the Sound, to particular species or communities and need to be recognized as such. The processes for identifying these important areas were different, but similar in that they are groundbreaking for Long Island Sound. The intent of both processes was not to prove that all of Long Island Sound is important for one reason or another. In fact, the effort was quite the opposite: to determine, of all of the vibrancy in the Sound, what places are truly special and, therefore, truly worth establishing specific siting and performance standards for. For the Blue Plan to become an effective management tool, however, its implementation will need to be closely monitored and its policies updated as necessary into the future.

Identification of Priorities

1. *Considering changes in threats to ocean and Great Lakes resources and management since the last assessment and stakeholder input, identify and briefly describe the top one to three management priorities where there is the greatest opportunity for the CMP to improve its ability to effectively plan for the use of ocean and Great Lakes resources (Approximately 1-3 sentences per management priority.).*

   Management Priority 1: Dredged Material Management

   Description: Connecticut has participated in the development of an interstate, intergovernmental dredged materials management plan (DMMP) for Long Island Sound, which is critically important to the future viability of marine commerce and recreational boating. With the DMMP now complete, the development and implementation of policy changes and guidance to promote beneficial reuse of dredged material is needed.

   Management Priority 2: Long Island Sound Marine Spatial Planning

   Description: Although the LIS Blue Plan has been submitted for approval, additional work will be necessary to ensure that the implementation is monitored for effectiveness and adjusted or clarified as appropriate. The enabling legislation was written to ensure this is both a living document and a process, and it specifies that an updated revision be re-submitted to the legislature no later than five years from adoption and every five years thereafter. Accordingly, the Blue Plan must by law be revised during the next Assessment period, and it is likely that unexpected issues or challenges from the initial implementation phase of the Plan will need to be addressed.

   Management Priority 3: Benthic Habitat Mapping

Description: Long Island Sound continues to have areas with only partial and/or outdated data on sea floor environments (i.e., sedimentary mapping in deep waters). As evidenced throughout the Blue Plan process, better data and information on the sedimentary environments, habitats and uses, is critical to support meaningful ocean governance efforts essential to conserve ocean resources, protect marine commerce and marine fishing.

2. *Identify and briefly explain priority needs and information gaps the CMP has to help it address the management priorities identified above. The needs and gaps identified here do not need to be limited to those items that will be addressed through a Section 309 strategy but should include any items that will be part of a strategy.*

Priority Needs	**Need?** (Y or N)	**Brief Explanation of Need/Gap**
Research	Y	Options for beneficial use of dredged sediments, particularly with the capacity to support habitat restoration in tidal wetlands and islands. Ongoing research relative to impacts of climate change and/or infrastructure with respect to benthic habitats and marine resources; Sentinel monitoring of key environmental indicators;
Mapping/GIS	Y	a. Benthic mapping data on key themes of geology & ecology to support spatial planning in gap areas; b. Use data (e.g., fishing effort, marine transportation, etc.) to support updates to spatial planning; c. Mapping data to support beneficial use of dredged material siting options.
Data and information management	Y	As noted in the "Mapping/GIS" and "Decision-Support tools" needs.
Training/Capacity building	N	
Decision-support tools	Y	Required to extend the capacity of data used in beneficial use siting decision making
Communication and outreach	Y	To maintain/enhance public support for LIS spatial planning efforts and to advance the implementation of dredged sediment beneficial use options.
Other (specify)	n/a	n/a

Enhancement Area Strategy Development

1. *Will the CMP develop one or more strategies for this enhancement area?*

Yes __X___
No _____

2. *Briefly explain why a strategy will or will not be developed for this enhancement area.*

   CT will develop a strategy to address priority 1 (dredged material management) as the need for a options to reduce open water disposal in LIS is required by the EPA rule designating recent disposal sites in the Sound.

   Given the recent investments in marine spatial planning and the need for continued involvement to ensure that the process is proceeding as intended, a strategy to complete the statutorily-required update of the Blue Plan will also be developed.

V. STRATEGIES

V.a – Policy and Regulatory Guidance for Adaptation

A. Issue Area(s): The proposed strategy or implementation activities will support the following high-priority enhancement areas (check all that apply):

☐ Aquaculture
☐ Cumulative and Secondary Impacts
☐ Energy and Government Facility Siting
☐ Wetlands
☒ Coastal Hazards
☐ Marine Debris
☒ Ocean/Great Lakes Resources
☐ Public Access
☐ Special Area Management Planning

B. Strategy Description The proposed strategy will lead to, or implement, the following types of program changes (check all that apply):

☐ A change to coastal zone boundaries;
☒ New or revised authorities, including statutes, regulations, enforceable policies, administrative decisions, executive orders, and memoranda of agreement/understanding;
☐ New or revised local coastal programs and implementing ordinances;
☐ New or revised coastal land acquisition, management, and restoration programs;
☐ New or revised special area management plans (SAMP) or plans for areas of particular concern (APC) including enforceable policies and other necessary implementation mechanisms or criteria and procedures for designating and managing APCs; and,
☒ New or revised guidelines, procedures, and policy documents which are formally adopted by a state or territory and provide specific interpretations of enforceable CZM program policies to applicants, local government, and other agencies that will result in meaningful improvements in coastal resource management.

C. Strategy Goal: State the goal of the strategy for the five-year assessment period. The goal should be the specific program change to be achieved or be a statement describing the results of the project, with the expectation that achieving the goal would eventually lead to a program change. For strategies that implement an

existing program change, the goal should be a specific implementation milestone. For example, work with three communities to develop revised draft comprehensive plans that consider future sea level rise or, based on research and policy analysis, present proposed legislation on wetland buffers to state legislature for consideration. Rather than a lofty statement, the goal should be achievable within the time frame of the strategy.

The goal of this strategy is to promote enhanced adaptation to coastal hazards and climate change through local and state regulatory policy guidance or authorities derived from the results of ongoing studies.

D. *Describe the proposed strategy and how the strategy will lead to and/or implement the program changes selected above. If the strategy will only involve implementation activities, briefly describe the program change that has already been adopted, and how the proposed activities will further that program change. (Note that implementation strategies are not to exceed two years.)*

LWRD will develop the strategy by working from the final reports and products of the GC3 Work Group on Adaptation Planning and Implementation, due on January 1, 2021, and the CIRCA Resilient CT project, scheduled for completion in the spring of 2022. As a result, this strategy will span most of the five-year Assessment period, but in two phases. In the first two years, we will analyze the conclusions and results of the GC3 Adaptation Work Group to distill from them applicable regulatory guidance for coastal municipalities and for our own coastal regulatory programs. program changes. During the following three years, we will repeat the process by drawing on the CIRCA project, which is more wide-ranging in that it will produce a statewide Resilience Roadmap as well as specific site and implementation plans. In both phases we will focus on creating adaptation guidelines, procedures, and policy documents to be used in land use regulatory processes at the local and state levels. Moreover, as part of the analysis, we will assess the potential need for statutory changes and pursue legislative proposals as appropriate. Once the guidance has been adopted, LWRD will conduct outreach to municipalities through our website, webinars and in-person meetings as appropriate.

E. *Needs and Gaps Addressed: Identify what priority needs and gaps the strategy addresses, and explain why the proposed program change or implementation activities are the most appropriate means to address the priority needs and gaps. This discussion should reference the key findings of the assessment and explain how the strategy addresses those findings.*

While considerable work on adaptation policies and plans is ongoing at the state, regional and municipal levels, not much has yet trickled down to the practical level of how land use regulation is applied in coastal hazard areas. The proposed

strategy will address this gap by distilling Connecticut's latest science and policy analysis into regulatory guidance for addressing coastal hazards and climate change.

F. *Benefits to Coastal Management: Discuss the anticipated effect of the strategy, including the scope and value of the strategy, in advancing improvements in the CMP and coastal management, in general.*

More effective regulatory guidance on adaptation issues will advance national, statewide, and local goals of improving resilience to coastal hazards and climate change. By leveraging the high profiles of a Governor-appointed commission and of a UConn institute, the strategy's guidance products are more likely to be closely followed and adopted at the local level.

G. *Likelihood of Success: Discuss the likelihood of attaining the strategy goal and program change (if not part of the strategy goal) during the five-year assessment cycle or at a later date. Address the nature and degree of support for pursuing the strategy and the proposed program change, as well as the specific actions the state or territory will undertake to maintain or build future support for achieving and implementing the program change, including education and outreach activities.*

Resilience and adaptation issues are highly salient for coastal municipalities as well as for our coastal management program, so we expect that new practical guidance based on the latest scientific and policy analysis will be welcomed. If statutory changes are deemed necessary, that may prove more difficult to achieve if it means overcoming the opposition of development interests, although there is significant support in the legislature for coastal resilience mesures that can assist municipalities.

H. *Strategy Work Plan: Using the template below, provide a general work plan that includes the major steps that will lead toward or achieve a program change or implement a previously achieved program change. For example, even if the final adoption of the program change is outside of the CMP's control, what steps will be included in the work plan so the CMP ensures the program change is considered, reviewed, and hopefully adopted by the outside entity? Who are the other stakeholders or elected officials that need to be engaged, and how and when during the strategy development process? What is the decision-making or voting process that is involved in the adoption of the program change, and how will the CMP interact with this process to ensure that the proposed program change is considered? If the state intends to fund implementation activities for the proposed program change, describe those in the plan as well. The plan should identify a schedule for completing the strategy and include major projected milestones (key products, deliverables, activities, and decisions) and budget estimates. If an activity will span two or more years, it can be combined into one entry (i.e., Years 2-3 rather than*

Year 2 and then Year 3). While the annual milestones are a useful guide to ensure the strategy remains on track, OCM recognizes that they may change somewhat over the course of the five-year strategy due to unforeseen circumstances. The same holds true for the annual budget estimates. Further detailing and adjustment of annual activities, milestones, and budgets will be determined through the annual cooperative agreement negotiation process.

1. **Strategy Goal:** To create new regulatory guidance on adaptation to coastal hazards and climate change based on results of GC3 and CIRCA studies.
2. **Total Years:** 4 over 5 years
3. **Total Budget:** $370,000(2 yrs of 0.4 * EA2 Salary/fringe; 2 yrs of 0.3 * Sup EA Salary/Fringe)

Year: 1

a. **Description of activities**: Working with and from the GC3 Adaptation Policy Work Group, assess final report and products as they may affect regulatory responses to coastal hazard adaptation. Begin developing develop draft guidance materials
b. **Major Milestone(s):** List of regulatory programs potentially affected or potentially improved by GC3 final report; outline and draft of guidance materials; assess need for statutory changes.
c. **Budget:** $100,000

Year: 2

a. **Description of activities:** Development and dissemination of final guidance documents.
b. **Major Milestone(s):** Revise and finalize draft guidance and outreach materials; convene outreach efforts geared to required regulatory community stakeholders, publish and make available guidance outreach materials on DEEP websites and other appropriate platforms, conducting webinars and in-person workshops as appropriate.
c. **Budget:** $100,000

Year: 3

d. **Description of activities**: Turning to CIRCA's Resilient CT project, assess final report and products as they may affect regulatory responses to coastal hazard adaptation. Begin developing draft guidance materials to supplement and expand guidance developed in Years 1 and 2.
e. **Major Milestone(s):** List of regulatory programs potentially affected or potentially improved by Resilient CT report and recommendations; outline and draft of guidance materials; assess need for statutory changes.

f. **Budget:** $70,000

Year: 4

d. **Description of activities:** Development and dissemination of final guidance documents
e. **Major Milestone(s):** Revise and finalize draft guidance and outreach materials; resume outreach efforts geared to required regulatory community stakeholders, publish and make available guidance outreach materials on DEEP websites and other appropriate platforms, conducting webinars and in-person workshops as appropriate.
f. **Budget:** $100,000

Fiscal and Technical Needs

A. *Fiscal Needs: If 309 funding is not sufficient to carry out the proposed strategy, identify additional funding needs. Provide a brief description of what efforts the CMP has made, if any, to secure additional state funds from the legislature and/or from other sources to support this strategy.*

We expect 309 funding should be sufficient to allow existing staff to carry out the specific tasks related to development of the guidance called for in this strategy.

B. *Technical Needs: If the state does not possess the technical knowledge, skills, or equipment to carry out all or part of the proposed strategy, identify these needs. Provide a brief description of what efforts the CMP has made, if any, to obtain the trained personnel or equipment needed (for example, through agreements with other state agencies).*

LWRD staff, being actively involved with both GC3 and CIRCA, collectively possess the experience and expertise to compete the strategy tasks

V.b. – Policy and Regulatory Guidance for Beneficial Use of Dredged Materials

A. Issue Area(s): The proposed strategy or implementation activities will support the following high-priority enhancement areas (check all that apply):

☐ Aquaculture
☐ Cumulative and Secondary Impacts
☐ Energy and Government Facility Siting
☐ Wetlands
☐ Coastal Hazards

☐ Marine Debris
☒ Ocean/Great Lakes Resources
☐ Public Access
☐ Special Area Management Planning

B. *Strategy Description The proposed strategy will lead to, or implement, the following types of program changes (check all that apply):*

☐ A change to coastal zone boundaries;
☐ New or revised authorities, including statutes, regulations, enforceable policies, administrative decisions, executive orders, and memoranda of agreement/understanding;
☐ New or revised local coastal programs and implementing ordinances;
☐ New or revised coastal land acquisition, management, and restoration programs;
☐ New or revised special area management plans (SAMP) or plans for areas of particular concern (APC) including enforceable policies and other necessary implementation mechanisms or criteria and procedures for designating and managing APCs; and,
☒ New or revised guidelines, procedures, and policy documents which are formally adopted by a state or territory and provide specific interpretations of enforceable CZM program policies to applicants, local government, and other agencies that will result in meaningful improvements in coastal resource management.

C. *Strategy Goal: State the goal of the strategy for the five-year assessment period. The goal should be the specific program change to be achieved or be a statement describing the results of the project, with the expectation that achieving the goal would eventually lead to a program change. For strategies that implement an existing program change, the goal should be a specific implementation milestone. For example, work with three communities to develop revised draft comprehensive plans that consider future sea level rise or, based on research and policy analysis, present proposed legislation on wetland buffers to state legislature for consideration. Rather than a lofty statement, the goal should be achievable within the timeframe of the strategy.*

The goal of this strategy is to develop Policy and Regulatory standards and guidelines to support the beneficial use of Dredged Materials for Habitat Restoration/Enhancement activities and to facilitate its implementation through guidance documents and outreach materials for the regulated community.

D. *Describe the proposed strategy and how the strategy will lead to and/or implement the program changes selected above. If the strategy will only involve implementation activities, briefly describe the program change that has already been adopted, and how*

the proposed activities will further that program change. (Note that implementation strategies are not to exceed two years.)

LWRD intends to develop a process for linking dredged material sources with potential avenues for use in habitat restoration activities. The outcomes are designed to support the technical "how to's" of matching projects based on various physical, ecological, logistical, and other characteristics.

In order to implement beneficial use at a practical level, there must also be a rational approach to policy and regulatory guidance as these issues span multiple state and federal programs. Thus, LWRD staff will work with other regulatory partners and stakeholders to create new policy guidance documents and outreach materials (such as fact sheets, PowerPoint presentations, web-pages, etc.,) explaining CT's regulatory approach to supporting beneficial use, and will evaluate potential regulatory changes as may be appropriate.. While some guidance and outreach may proceed in the same manner as workshops, the major effort of the beneficial use guidance will focus on consultants and agents for dredging permit applicants and habitat restoration efforts, particularly in tidal wetlands and nearshore islands.

E. *Needs and Gaps Addressed: Identify what priority needs and gaps the strategy addresses, and explain why the proposed program change or implementation activities are the most appropriate means to address the priority needs and gaps. This discussion should reference the key findings of the assessment and explain how the strategy addresses those findings.*

An amendment to the WLIS and CLIS Western and Central LIS open water disposal site designation rule and the subsequent EPA rule designating the ELDS Eastern LIS Disposal site in 2016 further directed that the states of CT and NY, the EPA and the USACE work together to pursue alternatives to open water disposal. The goal of these "beneficial use" alternatives which can span actions involving beach nourishment, wetland and/or island restoration, etc., was to reduce or eliminate open water disposal wherever practicable. The Dredged material Management Plan (DMMP) was completed in 2016 and provides an assortment of valuable knowledge and guidance. Although, as constructed the DMMP is not a decision document in that, "…it does not recommend specific dredged placement solutions for specific…activities." Rather, it acts as a "…framework to guide future investigations and inform decision making." The EPA site designation rules established a LIS Dredging Steering Committee and Regional Dredging Team (RDT) for purposes of managing dredged materials within LIS and pursuing alternatives.

In order to successfully address the actions needed to reduce or eliminate open water disposal, and support the work of the Steering Committee and the RDT, there is a need to take a closer look at where and by what means options for the beneficial uses of

sediments can be evaluated and implemented. This strategy is intended to evaluate and recommend actions within the existing regulatory/policy framework to advance the ability to implement beneficial use projects, and evaluate potential regulatory changes as may be appropriate.

F. *Benefits to Coastal Management: Discuss the anticipated effect of the strategy, including the scope and value of the strategy, in advancing improvements in the CMP and coastal management, in general.*

The expected effect of this strategy is to provide clear guidance on the regulatory framework governing the use of dredged sediment for beneficial uses such as tidal wetland restoration or island creation/enhancement. This will serve as a necessary and complementary piece to the technical guidance (developed as part of a Long Island Sound Study grant) on how to create workable linkages between projects with appropriate sediment sources and projects with compatible needs. The value is to provide pathways – addressing both technical and regulatory scopes – towards authorizing and carrying out projects across the CT coast that reduce open water disposal in favor of habitat restoration, as directed by EPA.

G. *Likelihood of Success: Discuss the likelihood of attaining the strategy goal and program change (if not part of the strategy goal) during the five-year assessment cycle or at a later date. Address the nature and degree of support for pursuing the strategy and the proposed program change, as well as the specific actions the state or territory will undertake to maintain or build future support for achieving and implementing the program change, including education and outreach activities.*

Although historically a difficult task to address, we expect that breaking this up into two pieces and focusing 309 resources towards the policy and guidance framework provides a likelihood of success, so long as the outcomes of the external work effort to address the technical components are provided in a timely fashion. We have currently projected those to be completed in a 2-year window leaving at year 3 to complete the policy/regulatory guidance.

H. *Strategy Work Plan :Using the template below, provide a general work plan that includes the major steps that will lead toward or achieve a program change or implement a previously achieved program change. For example, even if the final adoption of the program change is outside of the CMP's control, what steps will be included in the work plan so the CMP ensures the program change is considered, reviewed, and hopefully adopted by the outside entity? Who are the other stakeholders or elected officials that need to be engaged, and how and when during the strategy development process? What is the decision-making or voting process that is involved in the adoption of the program change, and how will the CMP interact with this process to ensure that the proposed program change is considered? If the state intends to fund implementation activities for the proposed program change, describe those in the plan as well. The plan should identify a schedule for completing the*

strategy and include major projected milestones (key products, deliverables, activities, and decisions) and budget estimates. If an activity will span two or more years, it can be combined into one entry (i.e., Years 2-3 rather than Year 2 and then Year 3). While the annual milestones are a useful guide to ensure the strategy remains on track, OCM recognizes that they may change somewhat over the course of the five-year strategy due to unforeseen circumstances. The same holds true for the annual budget estimates. Further detailing and adjustment of annual activities, milestones, and budgets will be determined through the annual cooperative agreement negotiation process.

1. **Strategy Goal:** To develop Policy and Regulatory Guidance for the Beneficial use of Dredged Materials for Habitat Restoration/Enhancement
2. **Total Years:** 3
3. **Total Budget:** $210,000

Year(s): 1-2

a. **Description of Activities:** Development of Draft Beneficial Use Guidance
b. **Major Milestone(s):** Working off of technical material provided via external grant projects, convene internal working group, and external advisory group to explore, assess and develop draft guidance approaches and seek review by working groups; develop draft outreach materials
c. **Budget:** $140,000 spread equally over each year

Year: 3

a. **Description of Activities:** Development of Final Beneficial Use Guidance
b. **Major Milestone(s):** Transition draft guidance and outreach materials to final; convene outreach efforts geared to required regulatory community stakeholders, publish and make available guidance outreach materials on DEEP websites and other appropriate platforms.
c. **Budget: $70,000**

Fiscal and Technical Needs

A. *Fiscal Needs: If 309 funding is not sufficient to carry out the proposed strategy, identify additional funding needs. Provide a brief description of what efforts the CMP has made, if any, to secure additional state funds from the legislature and/or from other sources to support this strategy.*

We expect 309 funding should be sufficient to carry out the specific tasks related to policy/regulatory development. As noted above, a technical component piece the 309 task will build off of will be funded through a separate funding source.

B. *Technical Needs: If the state does not possess the technical knowledge, skills, or equipment to carry out all or part of the proposed strategy, identify these needs. Provide a brief description of what efforts the CMP has made, if any, to obtain the trained personnel or equipment needed (for example, through agreements with other state agencies).*

LWRD staff, in conjunction with relevant state, federal and other stakeholders with backgrounds and interests in dredged material management and habitat restoration, collectively possess the ability and resources to compete the tasks related to policy/regulatory development. More specifically, LWRD anticipates it will leverage existing relationships with groups such as DEEP Wildlife, DEEP Water Quality Monitoring, DEEP Fisheries, DEEP Material Management & Compliance (Waste) plus the USACE, USFWS, USEPA, and various project proponents.

V.b - Blue Plan Update

A. *Issue Area(s): The proposed strategy or implementation activities will support the following high-priority enhancement areas (check all that apply):*

☐ Aquaculture
☐ Cumulative and Secondary Impacts
☐ Energy and Government Facility Siting
☐ Wetlands
☐ Coastal Hazards
☐ Marine Debris
☒ Ocean/Great Lakes Resources
☐ Public Access
☐ Special Area Management Planning

B. *Strategy Description: The proposed strategy will lead to, or implement, the following types of program changes (check all that apply):*

☐ A change to coastal zone boundaries;
☒ New or revised authorities, including statutes, regulations, enforceable policies, administrative decisions, executive orders, and memoranda of agreement/understanding;
☐ New or revised local coastal programs and implementing ordinances;
☐ New or revised coastal land acquisition, management, and restoration programs;
☐ New or revised special area management plans (SAMP) or plans for areas of particular concern (APC) including enforceable policies and other necessary implementation mechanisms or criteria and procedures for designating and managing APCs; and,
☒ New or revised guidelines, procedures, and policy documents which are formally adopted by a state or territory and provide specific interpretations of enforceable CZM program policies to applicants, local government, and other agencies that will result in meaningful improvements in coastal resource management.

C. *Strategy Goal: State the goal of the strategy for the five-year assessment period. The goal should be the specific program change to be achieved or be a statement describing the results of the project, with the expectation that achieving the goal would eventually lead to a program change. For strategies that implement an existing program change, the goal should be a specific implementation milestone. For example, work with three communities to develop revised draft comprehensive plans that consider future sea level rise or, based on research and policy analysis, present proposed legislation on wetland buffers to state legislature for consideration. Rather than a lofty statement, the goal should be achievable within the time frame of the strategy.*

The goal of this strategy is to prepare the first revision and update to the Blue Plan, which will be required no later than the spring of 2025, based on the experience of implementing the Plan and any new information or policy issues that have arisen since initial adoption.

D. *Describe the proposed strategy and how the strategy will lead to and/or implement the program changes selected above. If the strategy will only involve implementation activities, briefly describe the program change that has already been adopted, and how the proposed activities will further that program change. (Note that implementation strategies are not to exceed two years.)*

Once the Blue Plan is adopted by the legislature, its policies will be legally required to be considered by specified regulatory agencies in implementing designated programs. As such, upon legislative approval, LWRD expects to submit the Blue Plan to OCM as a program change. Subsequent updates to the Plan will be adopted through a similar process of stakeholder outreach, consideration by the Advisory Committee, drafting by LWRD, and submission to the Legislature, and will likewise be submitted as program changes.

E. *Needs and Gaps Addressed: Identify what priority needs and gaps the strategy addresses, and explain why the proposed program change or implementation activities are the most appropriate means to address the priority needs and gaps. This discussion should reference the key findings of the assessment and explain how the strategy addresses those findings.*

The proposed strategy will address the management priority of marine spatial planning in Long Island Sound, which must be a living process and not just a product with documents and maps. Beginning with the development of standard procedures for incorporating updated data and revised policies, the strategy will support compiling new information on offshore resources and human uses, evaluating the effectiveness of marine spatial planning policies, and conducting outreach and receiving stakeholder input, all leading to an update and revision in the Blue Plan. Given ongoing developments in offshore wind energy projects and ecological shifts related to climate change, it is highly likely that Blue Plan data and policies will need to be adjusted to reflect changed conditions.

F. *Benefits to Coastal Management: Discuss the anticipated effect of the strategy, including the scope and value of the strategy, in advancing improvements in the CMP and coastal management, in general.*

The expected effect of this strategy will be to continue advancing the fundamental improvement to CT's CMP that is represented by the Blue Plan. While the institution of the state's first marine spatial plan is an undeniable milestone, the Plan will

gradually decline in effectiveness and relevance unless it is regularly reviewed and updated.

G. *Likelihood of Success: Discuss the likelihood of attaining the strategy goal and program change (if not part of the strategy goal) during the five-year assessment cycle or at a later date. Address the nature and degree of support for pursuing the strategy and the proposed program change, as well as the specific actions the state or territory will undertake to maintain or build future support for achieving and implementing the program change, including education and outreach activities.*

Once the Blue Plan has been legislatively approved, it will be DEEP's responsibility to submit proposed modifications no later than every five years. With continuing 309 funding, we will have the staff resources necessary to follow the Blue Plan process, including Advisory Committee meetings and stakeholder outreach, to complete the next modification. We have currently projected the strategy to be completed in a 2 year timeframe, leaving the actual timing within the larger 5-year window to be determined based on circumstances that may arise.

H. *Strategy Work Plan: Using the template below, provide a general work plan that includes the major steps that will lead toward or achieve a program change or implement a previously achieved program change. For example, even if the final adoption of the program change is outside of the CMP's control, what steps will be included in the work plan so the CMP ensures the program change is considered, reviewed, and hopefully adopted by the outside entity? Who are the other stakeholders or elected officials that need to be engaged, and how and when during the strategy development process? What is the decision-making or voting process that is involved in the adoption of the program change, and how will the CMP interact with this process to ensure that the proposed program change is considered? If the state intends to fund implementation activities for the proposed program change, describe those in the plan as well. The plan should identify a schedule for completing the strategy and include major projected milestones (key products, deliverables, activities, and decisions) and budget estimates. If an activity will span two or more years, it can be combined into one entry (i.e., Years 2-3 rather than Year 2 and then Year 3). While the annual milestones are a useful guide to ensure the strategy remains on track, OCM recognizes that they may change somewhat over the course of the five-year strategy due to unforeseen circumstances. The same holds true for the annual budget estimates. Further detailing and adjustment of annual activities, milestones, and budgets will be determined through the annual cooperative agreement negotiation process.*

1. **Strategy Goal:** To update the Long Island Sound Blue Plan in light of relevant new information and implementation experience
2. **Total Years:** 2
3. **Total Budget:** $200,000 per year

Year: 1

a. **Description of activities:** Monitor Blue Plan implementation and development of new LIS data
b. **Major Milestone(s):** Develop SOPs for ongoing revisions to Blue Plan policies and datasets; convene quarterly Blue Plan Advisory Committee meetings; conduct annual public hearings; engage in stakeholder outreach to determine how the Plan is working in practice; consult with partners and stakeholders to evaluate data gaps and needs. materials
c. **Budget:** $100,000

Year: 2

a. **Description of activities:** Development of Blue Plan Revisions
b. **Major Milestone(s):** Continue regular outreach and Advisory Committee activities as in Year 1; compile master list of proposed corrections, data needs, map and policy changes; conduct public and stakeholder outreach; obtain Advisory Committee input and guidance; conduct public notice, comment and hearing process for proposed draft revisions; develop final draft revisions for submission to the legislature.
c. **Budget: $100,000**

Fiscal and Technical Needs

A. *Fiscal Needs: If 309 funding is not sufficient to carry out the proposed strategy, identify additional funding needs. Provide a brief description of what efforts the CMP has made, if any, to secure additional state funds from the legislature and/or from other sources to support this strategy.*

We expect 309 funding should be sufficient to carry out the specific tasks related to policy/regulatory development. Technical assistance in creating updated maps, websites and documents may be provided by partners such as CT Sea Grant or UConn, but LWRD may also need to use 309 funds to contract for these services.

B. *Technical Needs: If the state does not possess the technical knowledge, skills, or equipment to carry out all or part of the proposed strategy, identify these needs. Provide a brief description of what efforts the CMP has made, if any, to obtain the trained personnel or equipment needed (for example, through agreements with other state agencies).*

LWRD staff, in conjunction with partners such as CT Sea Grant and UConn CLEAR, collectively possess the ability and resources to compete the tasks related to reviewing and updating Blue Plan policies.

Projects of Special Merit (Optional)

If desired, briefly state what projects of special merit the CMP may wish to pursue to augment this strategy. (Any activities that are necessary to achieve the program change or that the state intends to support with baseline funding should be included in the strategy above.) The information in this section will not be used to evaluate or rank projects of special merit and is simply meant to give CMPs the option to provide additional information if they choose. Project descriptions should be kept very brief (e.g., undertake benthic mapping to provide additional data for ocean management planning). Do not provide detailed project descriptions that would be needed for the funding competition.

At this time, LWRD does not anticipate pursuing funding for a Project of Special Merit during the 2021 to 2025 Program Enhancement Cycle. Although, LWRD will reassess the feasibility of performing such a project midway through the program cycle's planning period.

V.c - 5-Year Budget Summary by Strategy

At the end of the strategy section, please include the following budget table summarizing your anticipated Section 309 expenses by strategy for each year. Generally, CMPs should only develop strategies for activities that the state intends to fund and work on given their anticipated level of Section 309 funding. However, in some circumstances, CMPs may wish to use the assessment and strategy development process as a broader strategic planning effort for the CMP. In that case, the CMP may elect to include additional strategies that exceed the state's anticipated Section 309 funding over the five-year period. If the CMP chooses this approach, it should still clearly indicate which strategies it anticipates supporting with Section 309 funding and which strategies it anticipates supporting through other funding sources.

Strategy Title	Anticipated Funding Source (309 or	Year 1 Funding	Year 2 Funding	Year 3 Funding	Year 4 Funding	Year 5 Funding	Total Funding
Develop Municipal and State Regulatory Guidance on Climate Change Adaptation	309	$100K	$100K		$70K	$100K	$370K
Policy and Regulatory Guidance for the Beneficial use of Dredged Materials for Habitat Restoration/ Enhancement	309	$70K	$70K	$70K	0	0	$210K
Blue Plan Update	309	0	0	$100K	$100K	0	$200K
Total Funding		**$170K**	**$170K**	**$170K**	**$170K**	**$100K**	**$780,000**

VI. Public Review

We posted a notice that the draft 309 Assessment Report for the Enhancement Cycle of 2021 to 2025 was available for downloading and review on our website as of April 6, 2020. DEEP also provided a 30-day public comment period to collect input from the general public for this assessment.