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CAPE COD
COMMISSION

To Cape Cod Commission Planning Committee

From Commission Staff

Re Proposed Amendments to Regional Policy Plan
New Marine Resources Section: Sand Mining and Cable/Pipeline Installations
Revisions to Coastal Resources Section

Date April 2, 2012

Attached are modifications to the proposed Marine Resources and Coastal Resources sections of the RPP as discussed during recent meetings of the Planning Committee. I've included the relevant sections of the current RPP so you can see where the proposed sections would be added and/or modified. Redlining reflects changes made to the documents since they were presented at the January 17th Planning Committee meetings. Changes recommended at the March 26th meeting are highlighted in yellow.

Specifically, the packet for your review includes:

1. Current formatted RPP **Planning Section, Coastal Resources**, Goal CR2, Coastal Hazard Mitigation.
2. Proposed changes to **Planning Section, Coastal Resources**, Goal CR2.
3. Proposed addition to the RPP **Planning Section, Marine Resources.**
4. Current formatted RPP **Regulatory Section, Coastal Resources**, Goal CR2.
5. Proposed changes to **Regulatory Section, Coastal Resources** (2 new MPSs): This document also includes the current language of the Coastal Resources MPSs which pertain to the review of beach nourishment projects.
6. Proposed addition to the RPP **Regulatory Section, Marine Resources** (would follow the Coastal Section). Includes 3 regulatory maps.
7. Proposed Definitions. Would be added to the **Appendices: Definitions** section of the RPP.
8. Proposed addition to **Appendices: Resources of Regional Significance.**

Brief Procedural History

As a reminder, the substance of this new Marine section, including the goal, Commission and town actions, and proposed regulations, are all based heavily on the Cape Cod Ocean Management Plan

(CCOMP) and the implementing regulations proposed for the Ocean DCPC. More than twenty meetings were held to formulate policy and develop regulations during the course of the DCPC planning period. In the end, the Assembly of Delegates did not adopt implementing regulations for the DCPC. Based upon its statutory obligations, the Cape Cod Commission adopted the CCOMP. The proposed regulations now under consideration round out the goals and obligations of the Commission originally sought through the Ocean DCPC, and identified in the CCOMP.

The Marine Resources section focuses on sand mining and cable/pipeline installations as Cape Cod's regional interests may not be protected adequately from the potential impacts from these activities. Impacts associated with offshore wind energy development are addressed through the definition of appropriate scale found in Section 2E of the CCOMP.

Ocean DCPC meetings

Policy Committee (one BOS member from each of 15 Cape Cod towns)

7/29/10

8/12/10

2/4/11

2/18/11

5/11/11

4/1/11

6/22/11

7/13/11

Regional Forums

11/10/10

6/1, 6/6, and 6/8/2011

Boards of Selectmen presentations (at their request)

6/20/11 Brewster

6/21/11 Yarmouth

Joint Cape Cod Commission Planning/Regulatory Committee meetings

4/25/11

6/17/11

7/7/11

7/11/11

7/14/11

10/6/11

Cape Cod Commission Meeting

7/21/11

10/13/11

Assembly of Delegates

9/7/11

9/21/11

Planning Section, RPP

Coastal Hazard Mitigation

To limit development in the coastal zone, particularly high-hazard areas, in order to protect the natural beneficial functions of coastal resources so that they serve to prevent or minimize human suffering and loss of life and property or environmental damage resulting from storms, flooding, erosion, and relative sea-level rise.

Uncontrolled and unplanned shoreline development continues to increase rapidly. Local assessors' data demonstrate that the inventory of homes and other structures in coastal areas is extremely valuable to individual property owners and is a significant contributor to each town's tax base. The projected impacts of relative sea-level rise and the dangers of continuing development within coastal hazard areas must be addressed to protect the public's health, safety, and welfare. Damages to property, degradation of the natural function of coastal resources, and risk to residents and public safety personnel all increase as development continues and structures increase in size and number within FEMA-designated flood zones. Coastal banks and dunes must be allowed to erode and their sediments to be transported without interruption if beaches, dunes, and barrier beaches are to continue to exist. Only with comprehensive shoreline planning and foresight will these resources survive for future generations. Regulatory standards to support this goal are intended to regulate and prohibit development effectively in known coastal hazard areas.

Cape Cod Commission Actions

CR2-C1 **Pre-Disaster Hazard Mitigation Planning:** The Cape Cod Commission will continue to provide technical assistance to the towns to implement the 2004 Barnstable County Natural Hazards Pre-Disaster Mitigation (PDM) Plan. The Commission will support implementation of FEMA-approved pre-disaster mitigation plans as needed and will continue to encourage development of local pre-disaster plans in towns without such plans. The Commission will seek collaboration with the state congressional delegation, FEMA, MEMA, the insurance industry, and others in an effort to establish mechanisms that may be used to help towns that wish to remove existing and future development from the regions' coastal floodplain.

CR2-C2 **Coastal Floodplain Zoning:** The Cape Cod Commission will update a model floodplain bylaw and help towns to adapt the model as a local floodplain district zoning bylaw.

CR2-C3 **Coastal Hazards-based Districts of Critical Planning Concern:** The Cape Cod Commission will investigate the viability of and encourage communities to consider DCPC designation(s) for coastal floodplain and hazard areas in order to help guide regulations and planning for appropriate coastal development across the Cape. The Commission will also provide other planning and coastal management techniques for new coastal development, and will help towns to adopt development performance standards to protect the natural beneficial functions of coastal resources.

Recommended Town Actions

CR2-T1 **Pre-Disaster Hazard Mitigation Planning:** The towns should implement and update FEMA-certified local PDM plans as needed. Towns without local PDM plans should develop them.

CR2-T2 **Coastal Floodplain Management:** The towns should review local standards and regulations that affect development within the coastal floodplain and adopt the Cape Cod Commission's model coastal floodplain bylaw if necessary to strengthen local zoning. The towns should consider adopting various floodplain management techniques, such as coastal erosion engineering standards, and best management practices for new coastal development. The towns should consider coastal hazards-based DCPCs and work with the Commission to nominate appropriate areas.

CR2-T3 **Remove Development from the Floodplain:** The towns should consider outright purchase, using Community Preservation Act funds or other grants, and other methods to remove development rights from parcels in and adjacent to coastal high-hazards areas and structures classified by FEMA as repetitive-loss properties.

Proposed Changes to RPP Coastal Resources, Planning Section

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Coastal Resources Goal – CR2:
Coastal Hazard Mitigation

To limit development in the coastal zone, particularly high-hazard areas, in order to protect the natural beneficial functions of coastal resources so that they serve to prevent or minimize human suffering and loss of life and property or environmental damage resulting from storms, flooding, erosion, and relative sea-level rise.

Uncontrolled and unplanned ~~shoreline~~ development continues ~~to increase rapidly~~along the Cape Cod shoreline. Local assessors' data demonstrate that the inventory of homes and other structures in coastal areas is extremely valuable to individual property owners and is a significant contributor to each town's tax base. The projected impacts of relative sea-level rise and the dangers of continuing development within coastal hazard areas must be addressed to protect the public's health, safety, and welfare. Damages to property, degradation of the natural function of coastal resources, and risk to residents and public safety personnel all increase as development continues and structures increase in size and number within areas subject to coastal storms, flooding, and erosion, including areas such as FEMA-designated flood zones and SLOSH zones (Sea, Lake, Overland, Surge from Hurricanes). Coastal banks and dunes must be allowed to erode and their sediments to be transported without interruption if beaches, dunes, and barrier beaches are to continue to exist.

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Past management responses to coastal erosion have included, and may increasingly rely on, beach nourishment. The 2011 Cape Cod Ocean Management Plan (CCOMP) emphasizes the importance of developing a Regional Sediment Management Plan to improve understanding of coastal processes and the potential impacts that may result from sand mining and beach nourishment activities. Through actions identified here and within the Marine Resources section of the RPP, the Cape Cod Commission will facilitate several initiatives that will contribute toward the development of a Regional Sediment Management Plan for Barnstable County, expanding upon the local and regional multi-hazard mitigation plans. These actions, as well as ongoing state efforts to inventory and analyze ocean resources, will inform the long-term goal in the CCOMP of identifying potential regional borrow sites. ~~Only with comprehensive shoreline planning and foresight will these resources survive for future generations. Regulatory standards to support this goal are intended to regulate and prohibit development effectively in known coastal hazard areas.~~

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Cape Cod Commission Actions

CR2-C1. ~~Pre-Disaster~~Multi-~~-~~Hazard Mitigation Planning: The Cape Cod Commission will continue to provide technical assistance to the towns to implement the 2004 Barnstable County Natural Hazards ~~Pre-Disaster~~Multi-Hazard Mitigation (~~PDM~~MHM) Plan. The Commission will support implementation of FEMA-approved

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~~pre-disaster~~multi-hazard mitigation plans as needed and will continue to encourage development of local multi-hazard ~~pre-disaster~~ plans in towns without such plans. The Commission will seek collaboration with the state congressional delegation, FEMA, MEMA, the insurance industry, and others in an effort to establish mechanisms that may be used to help towns that wish to remove existing and future development from the region's coastal floodplain.

CR2-C2. ~~Coastal Floodplain Zoning: The Cape Cod Commission will update a model floodplain bylaw and help towns to adapt the model as a local floodplain district zoning bylaw.~~ Regional Sediment Management Planning: In support of coastal hazard mitigation planning, as well as regional sediment management, the Commission will convene a working group of town coastal resource managers and other qualified individuals to develop adaptation strategies to mitigate the impacts of coastal erosion. The working group will prioritize geographic areas of need, and will examine a variety of strategies, including nature-based adaptation solutions, coastal retreat, and beach nourishment. The findings of the working group will inform the development of a Barnstable County Beach Nourishment Needs Assessment.

CR2-C3. Coastal Hazards-based Districts of Critical Planning Concern: The Cape Cod Commission will ~~investigate the viability of and encourage~~ assist communities ~~to~~ in considering DCPC designation(s) for coastal floodplain and hazard areas in order to help guide regulations and planning for appropriate coastal development across the Cape. ~~The Commission will also provide other planning and coastal management techniques for new coastal development, and will help towns to adopt development performance standards to protect the natural beneficial functions of coastal resources.~~

Recommended Town Actions

CR2-T1. ~~Pre-Disaster~~Multi-Hazard Mitigation Planning: The towns should implement and update FEMA-certified local ~~PDM~~ MHM plans as needed. Towns without local ~~PDM~~ MHM plans should develop them.

CR2-T2. Coastal Floodplain Management: The towns should review local standards and regulations that affect development within the coastal floodplain and ~~adopt~~ work with the Cape Cod ~~Commission's~~ Commission to adopt the model coastal floodplain bylaw, ~~if~~ as necessary, to strengthen local zoning. The towns should consider adopting various floodplain management techniques, such as coastal erosion engineering standards, and best management practices for new coastal development. The towns should consider coastal hazards-based DCPCs and work with the Commission to nominate appropriate areas.

CR2-T3. Remove Development from the Floodplain: The towns should consider outright purchase, using Community Preservation Act funds or other grants, and other methods to remove development rights from parcels in and adjacent to coastal high-hazards areas and structures classified by FEMA as repetitive-loss properties.

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Amend RPP: Add Marine Resources Planning section:

Marine Resources

Cape Cod's marine environment is a defining element of the Cape's past, present, and future. The richness of the Cape's ocean waters supports the Cape economy and way of life. Recreation, tourism, commercial fisheries, and residents' decisions to stay or move to the Cape can all be attributed in large part to the Cape's abundant and diverse marine resources and scenic beauty. Consequently, the integration of marine resource protection, economy, and quality of life play a significant role in the decisions we make about new activities in the ocean.

A fifteen month planning effort during 2010 – 2011 resulted in the Cape Cod Ocean Management Plan (CCOMP), adopted by the Cape Cod Commission in October 2011. The CCOMP examined the existing resources in the Cape's marine environment, examined a limited set of new activities, and made recommendations for balancing Development with resource protection. This Marine Resources section of the RPP addresses many of the recommendations for Sand Mining and conduit installation made in the CCOMP through the adoption of town and county planning actions, and minimum performance standards. A summary of the resources that characterize the Cape's marine environment follows.

Biological Resources

Massachusetts' waters, including the ocean waters surrounding Cape Cod, serve a crucial role in the survival and health of a wide range of marine life. Marine mammals, sea turtles, seabirds ~~species~~, fish, shellfish, and benthic communities define and contribute to ~~the~~ Cape Cod's marine ecosystem. Habitats critical for the survival of species such as the federally endangered North Atlantic Right Whale, Roseate Tern, and the Kemp's Ridley Sea Turtle are located in Cape Cod's ocean waters, as well as feeding, breeding, and staging areas for many of the hundreds of resident and migratory bird species that utilize the Atlantic Flyway and/or the Cape's ten coastal Important Bird Areas.

The Cape's commercial and recreational fishing industry relies on the health of the ocean ecosystem. Commercial mobile and fixed gear fisheries are diverse, targeting many species of fin and shellfish, ranging from cod and other groundfish, to striped bass, and invertebrates such as lobsters and other shellfish. Cape Cod's striped bass fishery is world-renowned and is a valuable contributor to the local tourist economy. In addition, the shellfish aquaculture industry in Massachusetts, consisting primarily of oyster and quahog farming, has been growing steadily by 10% per year over the last decade.

The health and integrity of the benthic communities and water quality that support these fisheries are key to their long-term sustainability. Sand, mud, and other fine-grained substrates (soft bottom community types) comprise much of the sea-bottom environment. Hard bottom substrates, characterized by scattered boulders, cobble and gravel, are much less common than soft-bottom substrates, but provide significant habitat for invertebrates at the bottom of the food web. Eelgrass, an important structural component of the shallow benthic zone, has declined sharply from its estimated historical coverage. Loss of eelgrass can result in significant shifts in marine fauna, including commercial and recreational species. Eelgrass is highly sensitive to pollution (e.g., nitrogen loading) and serves as an indicator of water quality changes.

Potential New Activities

Recent changes in state law now make it possible to mine sand from the ocean floor for the purposes of beach nourishment. Predictions for sea level rise and increases in storm frequency and intensity are likely to result in accelerated coastal erosion and may hasten Ppressure to extract sand from the ocean, an as-yet untapped resource~~, may accelerate should predictions foras the erosive effects of sea-level rise, and increased storm frequency and intensity, and erosion of our coastal resources be realized escalate~~. Threats to roads, bridges, stormwater management systems, and other public infrastructure may force land managers to consider adaptation or mitigation actions to protect public investments. Beach nourishment is a management approach that can provide temporary protection to existing human interests along the shore from the ~~probable~~ impacts of sea-level rise and the increased ~~storminess~~frequency and intensity of storms.

Impacts to marine resources from Sand Mining may include temporary or permanent disturbance of marine habitats, alterations of the coastal sediment transport processes upon which beaches and coastal habitats rely, and the consequent unintended impacts to public and private property and infrastructure. A thorough examination and understanding of regional sediment processes ~~are~~ is necessary prior to any policy decisions or permitting of Sand Mining off Cape Cod's shores. A plan addressing coastal erosion and threats to public and natural resources should prominently feature adaptation strategies as part of a comprehensive approach to respond to the impacts associated with climate change.

The installation of cables and pipelines are also allowed uses within the ocean. Renewable energy Development will require connections to existing power infrastructure through cables; other cable installations may be needed to increase other infrastructure capacity, such as fiber optic cables, etc. Pipelines may be needed for other resource delivery; however, at present, wastewater outfall is prohibited in the Cape Cod ocean sanctuaries by the Ocean Sanctuaries Act and the Oceans Act of 2008. Impacts from cable and pipeline Development should be addressed through resource assessments, appropriate siting, and mitigation actions.

Visual Resources and Characteristics

Ocean-based Development may, in some cases, also have adverse Visual Impacts on the public's experience of the Cape's diverse visual and Scenic Resources. These visual resources can broadly be defined as the visible features that make up the landscape and seascape. The Cape's visual resources vary in their scenic quality, value and ability to absorb changes. Visual and Scenic Resources in Barnstable County play a significant role in people's enjoyment of the area and are vital to the continued economic strength of the region.

[Side-bar boxes, with graphic:

87% of respondents indicated that access to the coast was very important or important in their decision to live on Cape Cod.

77% of respondents indicated that outdoor recreational opportunities, including boating, was very important or important in their decision to live on Cape Cod.

90% of respondents indicated that coastal erosion was a serious or moderate problem for Cape Cod.]

Goal MR1: To preserve and manage marine resources so as to safeguard and perpetuate their ecological, economic, historic, maritime, and aesthetic values, and where appropriate, to allow for limited Development activities compatible with resource preservation interests.

The impacts of climate change, specifically the increase in the intensity and frequency of storms and sea level rise, are of significant concern to Cape Cod residents and public resource managers because these events accelerate coastal erosion. As we respond to these events we must ensure a comprehensive planning effort with regional and local representation. ~~Coastal erosion is a significant concern of Cape Cod residents and public resource managers. As we prepare to prioritize our response to the threats of coastal erosion and sea-level rise, we must ensure that regional and local interests are represented and planning is coordinated.~~ The CCOMP articulated the importance of developing a Regional Sediment Management Plan to improve understanding of coastal processes and the potential impacts that may result from sand mining and beach nourishment activities. Through actions identified here and within the Coastal Resources section of the RPP, the Cape Cod Commission will support and facilitate a number of initiatives that will contribute toward the development of a Regional Sediment Management Plan for Barnstable County. ~~Sediment management plans should characterize coastal processes, identify and prioritize resources to protect, provide guidelines for beach management, and set goals to alleviate and reduce coastal flooding and storm damage. The Commission and Cape towns need to work together to ensure resources important to the Cape community are protected.~~

Cape Cod Commission Actions

1. ~~Through several actions, t~~The Cape Cod Commission will support the development of a Regional Sediment Management Plan to help characterize coastal sediment transport processes, identify sea-level rise adaptation strategies, and prioritize areas where beach nourishment is needed in order to inform the need for and appropriate siting of sand mining projects. See also actions in CR2 Coastal Hazard Mitigation that are critical for the development of a Regional Sediment Management Plan. Town sediment management plans should be coordinated with regional and local Multi-Hazard Mitigation Plans.

~~1. The Cape Cod Commission will convene a working group of town coastal resource managers to develop adaptation strategies to mitigate the impacts of coastal erosion. The working group should examine adaptation strategies, including beach nourishment and coastal retreat, and prioritize geographic areas of need. A County-wide Beach Nourishment Needs Assessment should be conducted. The findings of the Beach Nourishment Needs Assessment and the recommendations of the working group should contribute toward the development of a Regional Sediment Management Plan.~~

~~2. The Cape Cod Commission will facilitate the preparation of detailed sub-regional sediment management plans based on input from the towns. Findings from the Beach Nourishment Needs Assessment and available sediment budget studies will inform these plans, which will establish priorities for mitigating coastal erosion.~~

~~3.~~2. The Cape Cod Commission will develop a model bylaw for consideration by towns to establish performance standards for Sand Mining and cable/pipeline installations.

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Town Actions

~~4.~~3. Towns should develop sediment management plans, coordinated with similar efforts in neighboring towns, with their local Multi-Hazard Mitigation Plan, ~~and~~ and with regional sediment management ~~coastal~~ planning efforts.

~~5.~~4. Towns should consider adoption of local bylaws to manage Development of ocean resources.

Regulatory Section, RPP

Goal CR2: Coastal Hazard Mitigation

To limit development in the coastal zone, particularly high-hazard areas, in order to protect the natural beneficial functions of coastal resources so that they serve to prevent or minimize human suffering and loss of life and property or environmental damage resulting from storms, flooding, erosion, and relative sea-level rise.

	Minimum Performance Standards	Reference
CR2.1	**Prohibiting Development in V-Zones:** No development or redevelopment shall be permitted within V-Zones, except as specified in MPS CR2.7. Existing structures may be reconstructed or renovated provided there is no increase in gross floor area, footprint, or intensity of use (including but not limited to increases in wastewater flow, impervious area, or parking spaces, or conversion from seasonal to year-round use). As an exception, where there is no feasible alternative, water-dependent structures and uses and maintenance of marine infrastructure may be permitted provided the activity minimizes impacts to coastal resources and is subject to the approval of all permitting authorities.	
CR2.2	**Accommodating Relative Sea-level Rise:** All new buildings, including replacements, or substantial improvements to existing structures shall be designed as follows to accommodate documented relative sea-level rise rates in Massachusetts: 1) Within A-Zones, the lowest horizontal structural member shall be a minimum of one foot above Base Flood Elevation (BFE); or 2) Within V-Zones, due to wave action, the lowest horizontal structural member shall be a minimum of two feet above BFE.	
CR2.3	**Migration of Coastal Resources:** New development and redevelopment within the 10-year floodplain shall not impede the landward migration of resources, such as salt marshes, coastal dunes, coastal beaches, tidal flats, or coastal floodplain. The landward migration of coastal resources in response to relative sea-level rise shall be incorporated into the location, design, and construction of structures and other activities proposed.	
CR2.4	**Damage Prevention and Flood Minimization:** To maintain the storm damage prevention and flood control functions of Land Subject to Coastal Storm Flowage (LSCSF): 1) No activity within a V-Zone shall increase the existing site elevations; and 2) No activity within a V- or A-Zone shall increase the velocity of flood waters or increase flows due to a change in drainage or flowage characteristics on the subject site, adjacent properties, or any public or private way; and 3) Placement of fill in hydraulically constricted areas shall not be permitted.	

Goal CR2 (continued)

CR2.5 **Barrier Beaches, Coastal Dunes and Their Buffers:**

New Development

New development shall not be permitted on barrier beaches or coastal dunes within, or 100-feet landward of, Land Subject to Coastal Storm Flowage (LSCSF), or if located in an Area of Critical Environmental Concern (ACEC), or if determined to be or mapped as rare or endangered species habitat. Exception shall be given to construction and maintenance of non-structural beach or dune restoration projects. Any development allowed shall be designed as follows:

1) If located outside LSCSF, the structure shall be elevated at least two feet above grade.

2) To allow for storm flowage, wave action, and/or beach and dune migration, the structure shall be on open pilings or columns.

3) Any allowed new development shall be set back from the shoreline at least 30 times the average annual erosion rate of the shoreline or 100 feet, whichever is greater. The average annual rate of shoreline erosion shall be determined by averaging the erosion over the previous 30-year period at a minimum or other time frame determined by the Commission to appropriately reflect current and future shoreline conditions.

Redevelopment/Reconstruction

Existing structures on barrier beaches or coastal dunes may be reconstructed or renovated, provided there is no increase in the total combined building footprint and existing impervious area, or intensity of use including but not limited to increases in wastewater flow, impervious area, or parking spaces, or conversion from seasonal to year-round use. An applicant shall demonstrate that any allowed redevelopment/reconstruction will not adversely affect the natural beneficial function(s) of coastal resource(s) and that it will not increase the flood hazard. Additionally, if the reconstruction/renovation is greater than 50 percent of the assessed value of a structure it shall be designed as follows:

1) Within V-Zone: The lowest horizontal structural member shall be elevated at least two feet above the BFE.

2) Within A-Zone: The lowest horizontal structural member shall be elevated at least one foot above the BFE or two feet above existing grade, whichever is higher.

3) Outside LSCSF: The structure shall be elevated at least two feet above grade.

4) To allow for storm flowage, wave action, and/or beach and dune migration the structure shall be on open pilings or columns, and if within LSCSF it shall not have breakaway walls.

Water-dependent Marine Infrastructure or Public Recreation Facilities Exception

Water-dependent marine infrastructure and public recreational facilities proposed on barrier beaches or coastal dunes within LSCSF may be developed or renovated in accordance with MPS CR2.2. If outside LSCSF such

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Goal CR2 (continued)

CR2.5 (cont.) facilities shall be elevated at least two feet above grade on open pilings or columns without breakaway walls to allow for beach and dune migration. In either case, the applicant shall demonstrate that the proposed project will not:

a. Adversely affect the natural beneficial function of coastal resources;

b. Contribute to the loss of public access to the coast; and

c. Negatively impact the character of the area in accordance with Goal CR1 and the Commission's Design Manual, Technical Bulletin 96-001, as amended.

Technical Bulletin 96-001

CR2.6 Coastal Banks and Their Buffers:

New Development
New development shall not be permitted on a coastal bank. The setback from the top of the coastal bank for all new non-water dependent development shall be at least 30 times the average annual erosion rate of the shoreline or 100 feet, whichever is greater. The average annual rate of shoreline erosion shall be determined by averaging the erosion over the previous 30-year period at a minimum or other time frame determined by the Commission to appropriately reflect current and future shoreline conditions.

Redevelopment/Reconstruction
Redevelopment and reconstruction shall be designed to have no adverse effect on the height, stability, or use of the bank as a natural sediment source, as all coastal banks are sediment sources. Every feasible effort shall be made to reduce adverse impacts to the resource, such as to maintain the same footprint or relocate structures landward.

Water-dependent Marine Infrastructure or Public Recreation Facilities Exception
The setback from the top of the coastal bank for all new water-dependent marine infrastructure or public recreation facilities shall be as far landward as feasible and shall be designed to minimize adverse impacts to the greatest extent feasible.

CR2.7 **Disaster within A- and V-Zones:** Where fire, storm, or similar disaster has caused damage to or loss of buildings of greater than 50 percent of their assessed value in FEMA A- and V-Zones, or barrier beaches, coastal banks, or coastal dunes, all reconstruction shall be in compliance with current applicable regulations and shall be designed in accordance with Minimum Performance Standards CR2.2, CR2.3, CR2.4, CR2.5, and CR2.6. Any reconstruction shall not increase the total combined building footprint and impervious area of the pre-existing structure, or intensify the use of the pre-existing structure (including but not limited to increases in wastewater flow, impervious area, or parking spaces, or conversion from seasonal to year-round use).

Goal CR2 (continued)

CR2.8 **Public Infrastructure in Land Subject to Coastal Storm Flowage:** No new non water-dependent public infrastructure or expansion of existing non water-dependent public infrastructure shall be made in LSCSF, unless it is shown that there is no feasible alternative location and there is an overriding public benefit, and provided that such infrastructure will not promote new growth and development in flood hazard areas.

CR2.9 **Dredged Material:** Wherever feasible, clean, compatible dredged material shall be used on public beaches. When infeasible, dredged material shall be reused within the same littoral cell to enhance storm damage prevention provided that public access is afforded in accordance with MPS CR1.2.

CR2.10 **General Exceptions:** Notwithstanding MPS CR2.1, CR2.3, CR2.4, and CR2.8, the following activities may be permitted provided the applicant demonstrates to the satisfaction of the Commission that best available measures are utilized to minimize adverse impacts on all critical characteristics of Land Subject to Coastal Storm Flowage (LSCSF), and provided that all other RPP MPS for underlying resource areas are met:

1. Beach, dune, and bank nourishment and non-structural restoration projects that do not impair the natural beneficial functions of the resource, including temporary fencing and other devices composed of natural material intended to facilitate the resources' natural beneficial function. Monitoring and maintenance plans may be required.
2. Appropriately designed and sited pedestrian walkways and elevated decks with appropriate orientation, height, and spacing between planks to allow sufficient sunlight penetration to maintain underlying vegetation and resource migration.
3. Maintenance and use of existing public boat launching facilities.
4. Maintenance of existing public infrastructure.
5. Maintenance required to preserve the aesthetics or structural integrity of existing marine infrastructure.
6. Projects that restore or rehabilitate salt marsh, freshwater wetlands, fish runs, or shellfish beds.
7. Underground utility crossings that do not disturb protected resources.

Best Development Practices

CR2.11 **Remove Development from Coastal Floodplains:** Applicants are encouraged to seek opportunities to remove development from coastal floodplains, either on or off site. The removal of development in V-Zone or of FEMA-designated repetitive-loss properties is particularly encouraged.

Goal CR2 (continued)

CR2.12	**Use Mean Sea Level Data:** Use of the most recent Mean Sea Level datum available for a site is encouraged to determine base flood elevation and inform all coastal construction activities. When determining Mean Sea Level, applicants are encouraged to use the 1988 datum of NAVD88, rather than the more commonly used 1929 datum of NGVD29. The difference is generally between 0.8 feet and 1.2 feet and account for relative rise in sea level as well as the increased accuracy of newer measuring devices.	
CR2.13	**Calculation of Setback from Top of Coastal Bank:** Use of calculating a setback from the top of the coastal bank (per standard CR2.6 above) of at least 70 times the average annual erosion rate of the bank (or 100 feet if greater) is encouraged in order to reflect the typical 70-year lifetime of a residential building, as based on a study conducted for the Federal Insurance Administration to establish reliable estimates for the life of residential coastal structures.	

Goal CR3: Coastal Water Quality and Habitat

To maintain and improve coastal water quality in all coastal waters as appropriate, and to protect the health of coastal ecosystems.

	Minimum Performance Standards	Reference
CR3.1	**Buffers to Coastal Wetlands:** Undisturbed buffer areas of at least 100 feet surrounding coastal wetlands and/or landward of the mean high water mark of coastal water bodies shall be protected in accordance with MPS WET1.2.	
CR3.2	**Septic Systems in V-Zones:** New mounded septic systems shall be prohibited within FEMA V-Zones except to upgrade existing failed systems where such systems pose a demonstrated threat to public health, water quality, or natural resources. Structural components of failed systems shall be removed from V-Zones, unless such removal would cause irreversible adverse impacts to protected resources.	
CR3.3	**Stormwater Discharges:** No direct untreated stormwater discharges shall be permitted into any coastal waters or wetlands, including discharges above or below the mean high water level. New treated stormwater discharges shall be located a minimum of 100 feet from wetlands and water bodies, consistent with MPS WET1.4. For redevelopment, treated stormwater discharges shall be located a minimum of 100 feet, or the farthest distance practicable, from wetlands or water bodies. All stormwater discharge shall be consistent with MPS WET1.4.	

Goal CR3 (continued)

CR3.4 **Stormwater Management Designed to Accommodate Relative Sea-level Rise:** The design and construction of stormwater management systems proposed within 300-feet of the spring high water contour shall incorporate the historic rate of relative sea-level rise in Massachusetts of one-foot per 100 years by designing a system that achieves a three-foot separation from groundwater. This design shall be incorporated into National Pollution Discharge Elimination System (NPDES) Phase II Plans (where required) and individual project design and construction.

CR3.5 **Docks and Piers:** In order to reduce cumulative adverse impacts to coastal ecosystems, community docks and piers, rather than separate structures serving individual lots, shall be required. The construction or expansion of docks and piers shall not be permitted in significant shellfish habitat areas, as identified and documented by the Division of Marine Fisheries and/or local shellfish officials. Previously licensed private docks and piers more than 50 percent damaged or destroyed by storms may be replaced in accordance with federal, state and local regulations. In areas identified and documented as significant shellfish habitat, replacement structures shall be designed to minimize adverse impacts to these resources.

CR3.6 **New Marinas:** New marinas of 10 or more slips, moorings, or active landward storage berths, and expansions of existing marinas by 10 or more slips, moorings, or berths shall provide or contribute to the provision of adequate boat sewage pump-out facilities in each harbor and shall provide restrooms for their patrons. Such marinas shall also provide or contribute to the provision of adequate collection facilities for solid waste and waste oil for their patrons.

CR3.7 **Prohibition on Improvement Dredging:** Improvement dredging shall be prohibited except when necessary to accomplish a substantial public benefit and no feasible alternative exists.

CR3.8 **Maintenance Dredging:** All projects proposed as maintenance dredging shall provide prior permitting authorities, permit numbers, dates of issuance and re-issuance, and documentation that clearly demonstrates the location, width, depth and length of the previously permitted project.

CR3.9 **Beneficial Reuse of Dredged Material:** Beneficial reuse of clean dredged materials associated with any development project shall be required, consistent with MPS CR2.9.

Goal CR3 (continued)

CR3.10	**Eelgrass:** Development shall have no direct or indirect adverse effects to eelgrass beds, unless there is no feasible alternative location or design for the project and the project is necessary to accomplish an overriding public benefit. If a project adversely affecting eelgrass is permitted, the Commission shall require appropriate mitigation.
CR3.11	**Fish, Shellfish, Crustaceans:** Development and redevelopment shall be designed and constructed to minimize direct and indirect adverse impacts to fish, shellfish, crustaceans and their habitat.
CR3.12	**Aquaculture:** Coastal aquaculture shall be designed to have no significant adverse impacts to water quality or marine habitat. Temporary structures may be allowed provided that they are permitted by the Division of Marine Fisheries and all other appropriate regulatory agencies and specifically intended to increase the productivity of land containing shellfish or to enhance marine fisheries, and provided that there is no significant impact to public trust rights and navigation safety as determined by the Army Corps of Engineers and local Harbormaster.

Best Development Practices

CR3.13	**Waterfront-fueling Facilities:** Waterfront-fueling facilities are encouraged to be upgraded to ensure that best management practices are used to avoid adverse impacts to water quality.

Proposed Coastal Resources, Regulatory Section MPS Additions

Add under Goal CR2: Coastal Hazard Mitigation

CR2.11 Beach Nourishment Site Conditions: The applicant shall characterize the profile and sediment of the beach to be nourished, and shall demonstrate the compatibility of the grain size of the sediment source material and that of the receiving beach. In addition, the applicant shall demonstrate that site-specific wave climate and erosion rate conditions support the goal of the project, whether that is to re-introduce sediment to the littoral system, or to provide storm damage protection benefits.

CR2.12 Beach Nourishment – Site Monitoring: All DRI reviews of beach nourishment projects shall require a site monitoring plan as a condition of approval. In order to evaluate project performance, maintenance and/or re-nourishment requirements, and project impacts, such plan shall contain the following elements:

1) Seasonal beach profile surveys along the length of the project area during the first year, followed by annual beach profile surveys,
2) Annual evaluation of survey data to determine whether the project is performing as designed,
3) consistency with the guidelines in *Beach Nourishment - MassDEP's Guide to Best Management Practices for Projects in Massachusetts* (March 2007).

Such plan shall further require submission of a monitoring report after the first year of data collection and evaluation, and again two years thereafter. The site monitoring plan proposal and the monitoring reports shall be subject to review and approval by the Commission and the Commission shall require a Certificate of Compliance to ensure reporting is submitted in a timely manner.

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Existing Standards that pertain to beach nourishment projects:

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CR1.1 Public Access

Development and redevelopment along the coast shall not interfere with existing legal public access and historic public rights of way to the shore. In addition, public access shall not impair the natural beneficial functions of coastal resources.

CR2.5 Barrier Beaches, Coastal Dunes and Their Buffers

New Development

New development shall not be permitted on barrier beaches or coastal dunes within, or 100-feet landward of, Land Subject to Coastal Storm Flowage (LSCSF), or if located in an Area of Critical Environmental Concern (ACEC), or if determined to be or mapped as rare or endangered species habitat. Exception shall be given to construction and maintenance of non-structural beach or dune restoration projects. Any development allowed shall be designed as follows:

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1) If located outside LSCSF, the structure shall be elevated at least two feet above grade.
2) To allow for storm flowage, wave action, and/or beach and dune migration, the structure shall be on open pilings or columns.
3) Any allowed new development shall be set back from the shoreline at least 30 times the average annual erosion rate of the shoreline or 100 feet, whichever is greater. The average annual rate of shoreline erosion shall be determined by averaging the erosion over the previous 30-year period at a minimum or other time frame determined by the Commission to appropriately reflect current and future shoreline conditions.

Redevelopment/Reconstruction

Existing structures on barrier beaches or coastal dunes may be reconstructed or renovated, provided there is no increase in the total combined building footprint and existing impervious area, or intensity of use including but not limited to increases in wastewater flow, impervious area, or parking spaces, or conversion from seasonal to year-round use. An applicant shall demonstrate that any allowed redevelopment/reconstruction will not adversely affect the natural beneficial function(s) of coastal resource(s) and that it will not increase the flood hazard. Additionally, if the reconstruction/renovation is greater than 50 percent of the assessed value of a structure it shall be designed as follows:

1) Within V-Zone: The lowest horizontal structural member shall be elevated at least two feet above the BFE.
2) Within A-Zone: The lowest horizontal structural member shall be elevated at least one-foot above the BFE or two feet above existing grade, whichever is higher.
3) Outside LSCSF: The structure shall be elevated at least two feet above grade.
4) To allow for storm flowage, wave action, and/or beach and dune migration the structure shall be on open pilings or columns, and if within LSCSF it shall not have breakaway walls.

Water-dependent Marine Infrastructure or Public Recreation Facilities Exception

Water-dependent marine infrastructure and public recreational facilities proposed on barrier beaches or coastal dunes within LSCSF may be developed or renovated in accordance with MPS CR2.2. If outside LSCSF such facilities shall be elevated at least two feet above grade on open pilings or columns without breakaway walls to allow for beach and dune migration. In either case, the applicant shall demonstrate that the proposed project will not:

a. Adversely affect the natural beneficial function of coastal resources;
b. Contribute to the loss of public access to the coast; and
c. Negatively impact the character of the area in accordance with Goal CR1 and the Commission's Design Manual, Technical Bulletin 96-001, as amended.

CR2.9 Dredged Material

Wherever feasible, clean, compatible dredged material shall be used on public beaches. When infeasible, dredged material shall be reused within the same littoral cell to enhance storm damage prevention provided that public access is afforded in accordance with MPS CR1.2.

CR2.10 General Exceptions

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Notwithstanding MPS CR2.1, CR2.3, CR2.4, and CR2.8, the following activities may be permitted provided the applicant demonstrates to the satisfaction of the Commission that best available measures are utilized to minimize adverse impacts on all critical characteristics of Land Subject to Coastal Storm Flowage (LSCSF), and provided that all other RPP MPS for underlying resource areas are met:

1. Beach, dune, and bank nourishment and non-structural restoration projects that do not impair the natural beneficial functions of the resource, including temporary fencing and other devices composed of natural material intended to facilitate the resources' natural beneficial function. Monitoring and maintenance plans may be required.
2. Appropriately designed and sited pedestrian walkways and elevated decks with appropriate orientation, height, and spacing between planks to allow sufficient sunlight penetration to maintain underlying vegetation and resource migration.
3. Maintenance and use of existing public boat launching facilities.
4. Maintenance of existing public infrastructure.
5. Maintenance required to preserve the aesthetics or structural integrity of existing marine infrastructure.
6. Projects that restore or rehabilitate salt marsh, freshwater wetlands, fish runs, or shellfish beds.
7. Underground utility crossings that do not disturb protected resources.

CR3.9 Beneficial Reuse of Dredged Material

Beneficial reuse of clean dredged materials associated with any development project shall be required, consistent with MPS CR2.9.

CR3.10 Eelgrass

Development shall have no direct or indirect adverse effects to eelgrass beds, unless there is no feasible alternative location or design for the project and the project is necessary to accomplish an overriding public benefit. If a project adversely affecting eelgrass is permitted, the Commission shall require appropriate mitigation.

CR3.11 Fish, Shellfish, Crustaceans

Development and redevelopment shall be designed and constructed to minimize direct and indirect adverse impacts to fish, shellfish, crustaceans and their habitat.

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Amend RPP: Add Marine Resources Regulatory section:

Marine Resources

Goal MR1: To preserve and manage marine resources so as to safeguard and perpetuate their ecological, economic, historic, maritime, and aesthetic values, and where appropriate, to allow for limited Development activities compatible with resource preservation interests.

MR1.1 **Prohibited Areas, Sand Mining:** Sand and Gravel Mining operations shall be located outside of Sand and Gravel Mining Prohibited Areas as defined and illustrated on the *Cape Cod Ocean Management Plan Sand and Gravel Mining Prohibited Areas Map.*

MR1.2 **Prohibited Areas, Cables/Pipelines:** Cable or Pipeline Installations shall be located outside of Cable/Pipeline Prohibited Areas as defined and illustrated on the *Cape Cod Ocean Management Plan Cable/Pipeline Prohibited Areas Map.*

Performance Standards Applicable to All Sand Mining and Cable/Pipeline Projects

MR1.3 **Buffers to Navigation:** Sand Mining and cable/pipeline installations shall have buffers to established ferry routes, navigational channels and commercial shipping lanes with adequate width to prevent accidents or irreconcilable conflict between different uses. Guidance on buffer width may be found in Technical Bulletin XXX. Cable and pipeline installations may be sited coincident with established navigational routes provided an applicant can provide evidence that the proposed installation will not adversely impact established navigational uses.

MR1.4 **Operations and Maintenance Plan:** Applicants shall provide an Operations and Maintenance Plan for Commission review and consideration for approval. The Operations and Maintenance Plan shall identify the party(ies) responsible for ensuring (a) that the Development activity is operated and maintained so as not to constitute a significant threat to the public health and safety and the environment; (b) that adequate capital or insurance exists to make necessary repairs, including repairs on account of accidents, collision, and natural disasters; and (c) that all performance standards set forth herein will be met (e.g. TOY restrictions). Such Operations and Maintenance Plan shall include provisions for annual review by the Commission, and the Commission shall require a Certificate of Compliance to ensure reporting is submitted in a timely manner.

MR1.5 **Emergency Response Plan:** Applicants shall provide an Emergency Response Plan for Commission review and consideration for approval. The Emergency Response Plan shall identify responsible parties for first response and ongoing disaster management from events including, but not limited to, fire, collision, catastrophe, oil spills, other hazardous materials leaks, or poor water quality or sedimentation resulting from mining operations or conduit installation. The Emergency Response Plan shall ~~ensure~~ require the timely and competent response to accidents or disasters so as to minimize to the greatest extent practicable threatened or actual harm to the public and damage to the environment.

~~MR1.6 **Multi-Hazard Mitigation Plan:** The Development shall be consistent with the FEMA-certified local multi-hazard mitigation plan, or where no local plan exists, with the regional~~

~~multi-hazard mitigation plan.~~

MR1.~~7~~ 6 **North Atlantic Right Whale:** Sand Mining operations and cable/pipeline installations shall not be permitted from January to May in North Atlantic Right Whale Critical Habitat (comprising all of Cape Cod Bay due north and east of the Cape Cod Canal, as designated by National Marine Fisheries Service (NMFS)). ~~Construction and/or decommissioning activities~~ Sand Mining operations and cable/pipeline installations anywhere in Barnstable County shall immediately cease if North Atlantic Right Whale(s) are observed within two (2) miles of ~~Development~~ such activities. The sighting shall immediately be reported to NMFS by calling 978-585-8473 or by contacting the U.S. Coast Guard via channel 16. Activities shall not recommence~~,~~ until such time that NMFS~~,~~ or ~~Massachusetts Division of Marine Fisheries, and/or~~ a NMFS-approved environmental monitor provides written notification of their determination that ~~mining~~ operations may resume.

MR1.~~8~~ 7 **North Atlantic Right Whale, TOY Restrictions:** Sand Mining operations and cable/pipeline installations shall not be permitted from January to May in the Exclusionary Areas that comprise expanded North Atlantic Right Whale habitat (see *Cape Cod Ocean Management Plan Map of Exclusionary Areas*). Sand Mining operations and cable/pipeline installations may be permitted in these Exclusionary Areas at other times of year provided the applicant can demonstrate through the provision of clear and convincing evidence that the activity will not cause direct or indirect impacts to North Atlantic Right Whales, or other whale species.

MR1.~~9~~ 8 **Whales:** To reduce the potential for vessel harassments or collisions with listed whales and sea turtles, all vessel and aircraft captains and project managers associated with the Development activity shall be familiar with the NOAA Fisheries Northeast Regional Viewing Guidelines, as updated, and MMS Gulf of Mexico Region's Notice to Lessee (NTL) No. 2007-G04 - Vessel Strike Avoidance and Injured/Dead Protected Species Reporting guidelines, http://www.nero.noaa.gov/prot_res/mmv/regs.html ~~The Applicant shall ensure that these guidelines are distributed~~The Commission shall require the Applicant to verify it has distributed these guidelines ~~and verification of distribution~~ to those individuals responsible for operating and managing the Development~~. is provided to the Commission as a condition of any approval decision.~~

MR1.~~10~~ 9 **Sea Turtles:** Sand Mining operations and cable/pipeline installation shall protect sea turtles. The applicant shall provide a species protection plan to the Commission for its review and approval ~~when~~ that accounts for Development that is proposed within sea turtle habitat or during times of year when turtles are present. The Commission may consult with the ~~NHESP~~ NMFS or DMF in review and approval of a species protection plan.

MR1.~~11~~ 10 **Fish Resources and Habitat:** Sand Mining operations and cable/pipeline installation shall protect important fish resources and habitat as classified by the Division of Marine Fisheries, including diadromous fish runs and shellfish habitat. Sand Mining operations and cable/pipeline installation may be permitted in Exclusionary or Provisional areas, provided that the presumption of a site's importance to fish resources and habitat is overcome where the applicant demonstrates to the satisfaction of the Commission through a site assessment that the resources do not exist, or the site is not significant to important fish resources and habitat. In addition, Sand Mining operations and cable/pipeline installation shall avoid licensed commercial

fishing or aquaculture installations (e.g. fish weirs, aquaculture pens, rafts, floats, etc.).

MR1.~~12~~ 11 **Benthic Habitats, Direct Impacts:** Sand Mining operations and cable/pipeline installation shall not have any direct impacts on eelgrass beds or areas of other biologically productive benthic habitats (e.g. Hard/Complex Seafloor). The burden of proof shall be on the applicant to demonstrate through field surveys that the resources are not present, and/or will not be impacted adversely. Sand Mining operations and cable/pipeline installation shall avoid impacts to areas of historic eelgrass beds to the maximum extent feasible, regardless of whether eelgrass is found in the historic eelgrass bed at the time of application.

MR1.~~13~~ 12 **Benthic Habitats, Indirect Impacts:** Applicants for proposed Sand Mining operations or cable/pipeline installation located within 500 feet of eelgrass beds or other biologically productive benthic habitats (e.g. Hard/Complex Seafloor) shall provide an analysis of anticipated sediment dispersion resulting from Development activities. The results of the sediment dispersion modeling shall be used to condition any approval to ensure that the design and siting of Sand Mining operations and cable/pipeline installation avoids indirect impacts (e.g. turbidity) to eelgrass and other biologically productive benthic habitats (e.g. Hard/Complex Seafloor). Best construction practices (e.g directional drilling) shall be used to the extent feasible.

MR1.~~14~~ 13 **Benthic Habitats, TOY Restrictions:** The ~~Commission will~~applicant shall consult with Massachusetts Division of Marine Fisheries in determining whether restrictions shall be placed on the timing or methods of Sand Mining operations and cable/pipeline installations to avoid temporary or permanent impacts to critical life history stages (e.g., spawning, and egg, embryo, and juvenile development) of marine species. Best management practices shall be employed during Development activities to minimize turbidity and sedimentation impacts to sensitive benthic habitats, including eelgrass and other biologically productive benthic habitats (e.g. Hard/Complex Seafloor).

MR1.~~15~~ 14 **Monitoring ~~and Restoration~~ of Benthic Habitats during Construction**: ~~As part of Development permittingPrior to a Commission decision on a project, a~~Applicants for Sand Mining operations and cable/pipeline installations shall provide a ~~project~~ site monitoring plan ~~and a post-construction restoration plan~~ for Commission review and approval ~~that ensures restoration of the borrow site(s) or cable/pipeline installation footprint to productive natural resource conditions~~.

~~1.~~ In order to evaluate project impacts, including any changes in the areal extent and health of sensitive marine resources, such ~~The project monitoring~~ plan shall identify (a) sensitive marine resources in the vicinity of the construction site, (b) protocols to monitor turbidity, ~~suspended particulates,~~ light penetration, dissolved oxygen and nutrient conditions in the proposed construction area ~~for Sand Mining or cable/pipeline installation~~, as well as within a buffer zone that extends to the furthest boundary of the potentially affected adjacent area (as determined by current/wave modeling), (c) monitoring schedules, ~~. The project monitoring plan shall identify monitoring schedules, sensitive marine resources in the vicinity of the construction site,~~ and (d) contingency plans if turbidity conditions exceed identified thresholds. ~~any changes in the areal extent and health of the sensitive marine resources, and contingency plans if turbidity conditions exceed identified thresholds.~~

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2. The restoration plan shall include restoration of natural bottom contours similar to surroundings, restoration of pre-Development surface sediment characteristics, and other specific habitat features such that overall physical habitat characteristics are restored.

The Commission shall require Certificates of Compliance at appropriate intervals to ensure the provisions of the monitoring and restoration plans are met.

MR1.16 15 **Rare Species Habitat:** Applicants for Sand Mining operations andor cable/pipeline installations within habitats critical to the survival of rare animals and plants shall submit the Development proposal to the Massachusetts Natural Heritage and Endangered Species Program for review and comment. Development that would adversely affect habitat of local populations of rare animals wildlife and plants shall not be permitted. Development may be permitted where the proponent can demonstrate that such Development will not adversely affect such habitat. An animal wildlife and plant habitat management plan may be required as a condition of approval when Development or redevelopment is permitted in habitats critical to the survival of rare animalswildlife and plant habitat areas.

MR1.17 16 **Construction Noise:** Construction noise shall be limited at all times to levels shown to have no material adverse effect on marine life. Applicants shall provide a Construction Noise Mitigation Plan to the Commission for review and approval. whichSuch plan shall includeaddress issues to avoid or minimize construction noise impacts on marine mammals and sea turtles, including but not limited to an assessment of the construction noise impacts on marine life, a monitoring plan for tracking marine mammals and sea turtles entering the construction zone, and a mitigation plan, including time-of-year (TOY) restrictions on construction, to avoid or minimize construction noise impacts on marine mammals and sea turtles.

MR1.18 17 **Cumulative Impacts:** As part of an application for offshore Development, the cumulative impacts of any existing or permitted offshore WECFs, Sand Mining operations, and cables and pipelines within Barnstable County shall be considered. Applicants shall identify on a map all of the existing or permitted offshore WECFs, ongoing or prior Sand Mining operations, or cable or pipeline installations within Barnstable County, and the Commission shall determine whether the public benefits of the Development outweigh the cumulative adverse impacts to resources protected under the Act.

MR1.19 18 **Coordinated Conduit Crossings:** Applicants shall coordinate conduit installations with existing cable or pipeline routes to the maximum extent feasible in order to minimize harm to the environment.

MR1.20 19 **Archaeological Resources:** Where Development is proposed on or adjacent to known archaeological sites or sites with high archaeological sensitivity as identified by the Massachusetts Board of Underwater Archaeological Resources and/or the Massachusetts Historical Commission, it shall be configured to protect such resources. Applicants shall conduct a predevelopment investigation of such sites early in the site planning process to serve as a guide for layout of the Development.

Additional Performance Standards Applicable to All Sand Mining Projects

MR1.~~21~~ 20 **Coastal Landforms:** Applicants for Sand Mining operations shall ~~document in~~ provide a report on the potential impacts of the proposed project on local sediment transport and wave patterns, ~~and~~ on regional sediment budgets of both the borrow and placement sites, and on the adjacent areas. Sand Mining operations shall not change ocean currents or wave conditions in a way that results in adverse effects on existing coastal landforms (e.g. coastal bank erosion), infrastructure, navigation, and public/private property, including saltwater intrusion on landward freshwater resources.

MR1.21 **Minimizing Impacts to Benthic Resources**: Sand mining projects shall be designed to minimize impacts to benthic resources and encourage recolonization. ~~and to ensure that the biological communities that recolonize a mined area function in a similar manner to benthic communities that existed prior to the project~~To minimize impacts and promote recolonization of mined areas, the total removal of substrate shall be avoided. ~~To the extent feasible, p~~Projects shall be designed using practices including, but not limited to, retaining refuge patches or strips through a sand mining site ~~to retain refuge patches or strips through a sand mining site in order to~~ promote recolonization ~~and the efficient recovery~~ of the post-mining site to pre-mined benthic communities and related or dependent marine life.

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MR1.22 Post-Construction Monitoring of Benthic Habitats: ~~As part of Development permitting, a~~Applicants for Sand Mining operations shall provide a post-construction monitoring plan for Commission review and approval.

The post-project monitoring plan shall include provisions for monitoring the physical, chemical and/or biological conditions at the borrow site for a minimum of three years following ~~project~~Development closure to evaluate recovery of the site to productive benthic habitat conditions. Where the intent of a ~~project~~Development is to establish a long-term borrow site, the elements of a post-~~project~~Development monitoring plan may be modified at the Commission's discretion.

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The Commission shall require Certificates of Compliance at appropriate intervals to ensure the provisions of the monitoring plan are met.

MR1.~~22~~ 23 **Coastal Waterbirds:** Sand Mining shall not be permitted where Sand Mining operations would adversely impact the core habitats of Long-tailed Duck, Roseate Tern, Special Concern Tern species (Arctic, Least, and Common Terns), and important nesting habitats of colonial waterbirds and Leach's Storm Petrel, all as delineated by the Massachusetts Ocean Management Plan. Development may be permitted where the proponent can demonstrate that such Development will not adversely affect the habitat of these species. A species protection plan may be required as a condition of approval when Development is permitted in these core habitats.

MR1.~~23~~ 24 **Sea Ducks:** Sand Mining operations shall avoid directly or indirectly impacting important feeding, resting, staging, or overwintering habitat for sea ducks in waters less than 65 ft (20 meters) deep. Determination of whether an area supports sea duck habitat shall be based on factors including but not limited to pre-construction site surveys, areas known to support large

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congregations of sea ducks, and/or seafloor mapping that confirms the presence of important benthic feeding habitat. ~~Sand Mining operations shall avoid water depths less than 20 meters to protect sea duck habitat. The applicant may overcome the presumption that a location less than 20 meters water depth provides habitat for sea ducks by providing site survey data that demonstrate that the site does not provide important feeding, resting, staging, or overwintering habitat for sea ducks.~~

MR1.~~24~~ 25 **Project Benefit:** Applicants for Sand Mining operations shall demonstrate that the Development results in a substantial benefit to local or regional public resources or the coastal ecosystem, including but not limited to, protection against storm damage, protection against sea level rise, flood control, protection of recreational beaches, restoration or improvement of habitat, or water quality improvement. Sediments derived from the offshore borrow site shall be utilized within Barnstable County.

MR1.~~25~~ 26 **Scenic Resources:** Sand Mining operations shall be sited and designed to avoid Adverse Visual Impacts to the Cape's cultural/historic and Scenic Resources, including structures listed or eligible for listing on the National or State Register of Historic Places and Historic or Cultural Landscapes. Sand Mining operations less than 12 months in duration are presumed to have no Adverse Visual Impact. A Visual Impact Assessment (VIA) shall be required to determine the Visual Impact of any Development that exceeds 12 months in duration in accordance with ~~the~~ Technical Bulletin __.

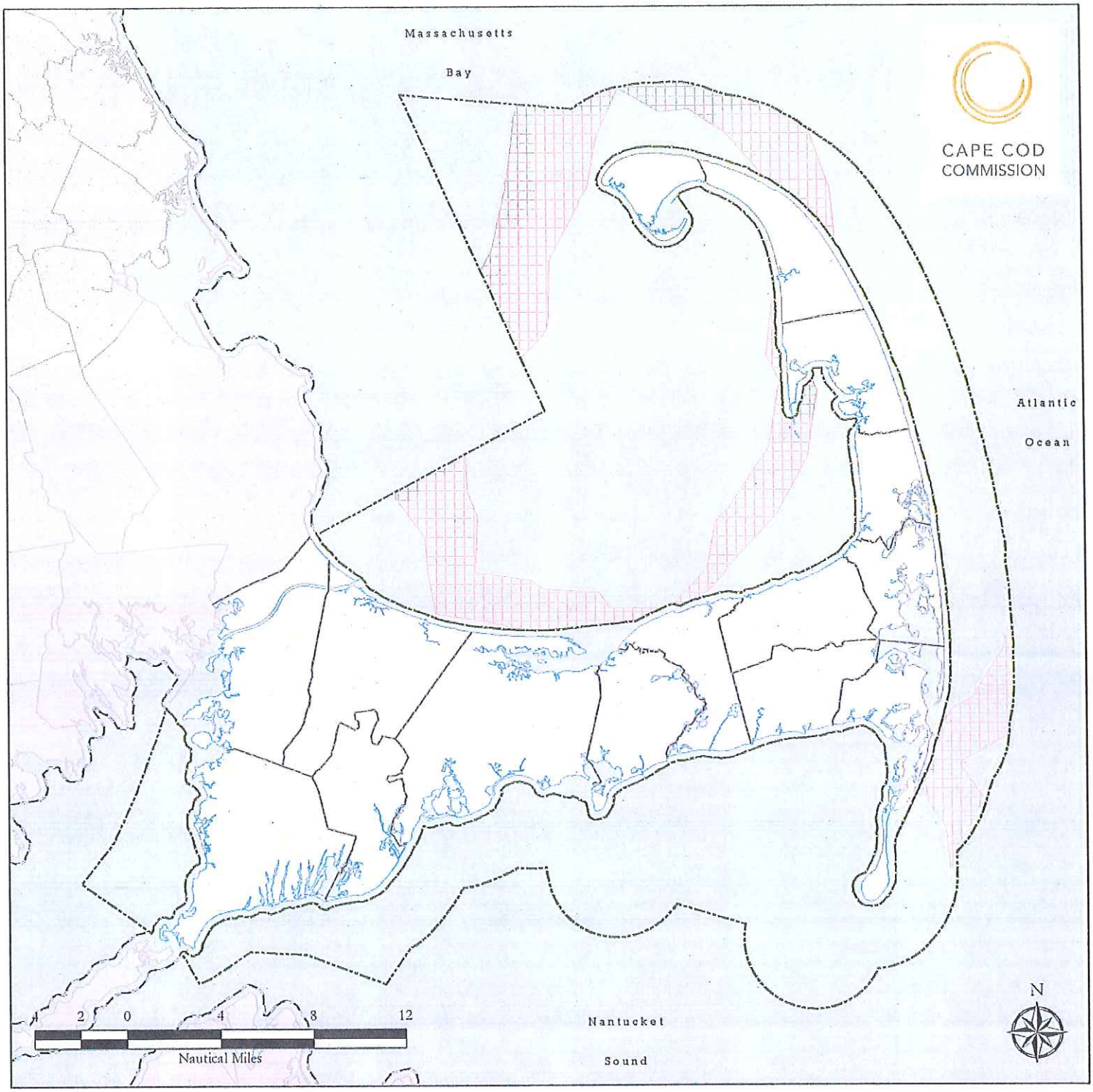
Additional Performance Standards Applicable to All Cable/Pipeline Projects

MR1.~~26~~ 27 **Benthic Communities:** Cable and pipeline installations shall not result in adverse impacts to benthic communities and their ecology, including finfish, shellfish, and migratory species habitat, including but not limited to, sedimentation, erosion, scour, or barriers to migration.

MR1.~~27~~ 28 **Coastal Waterbirds:** Cable/pipeline installations shall ensure that the core habitats of Long-tailed Duck, Roseate Tern, Special Concern Tern species (Arctic, Least, and Common Terns), and important nesting habitats of colonial waterbirds and Leach's Storm Petrel are protected. Cable/pipeline installations may be permitted where the proponent can demonstrate that such Development will not adversely affect the habitat of these species. A species protection plan may be required as a condition of approval when cable/pipeline installation is permitted in these core habitats.

Best Development Practices

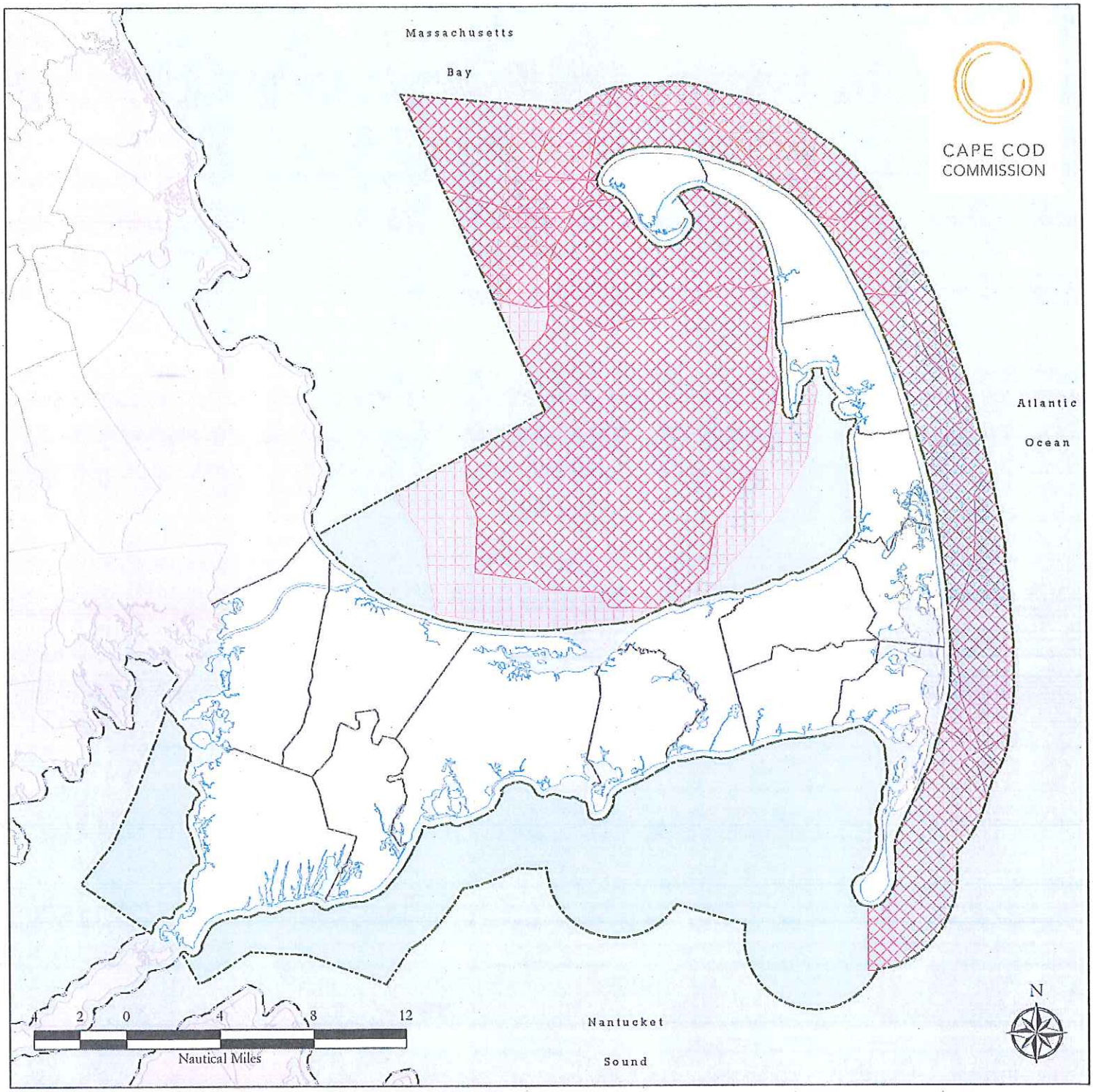
MR1.29 **Multi-Hazard Mitigation Plan**: The Development shall be consistent with the goals and priority action items of the FEMA-certified local multi-hazard mitigation plan, or where no local plan exists, with the regional multi-hazard mitigation plan.



Map 14: Cape Cod Ocean Management Plan
Map of Exclusionary Areas

Legend

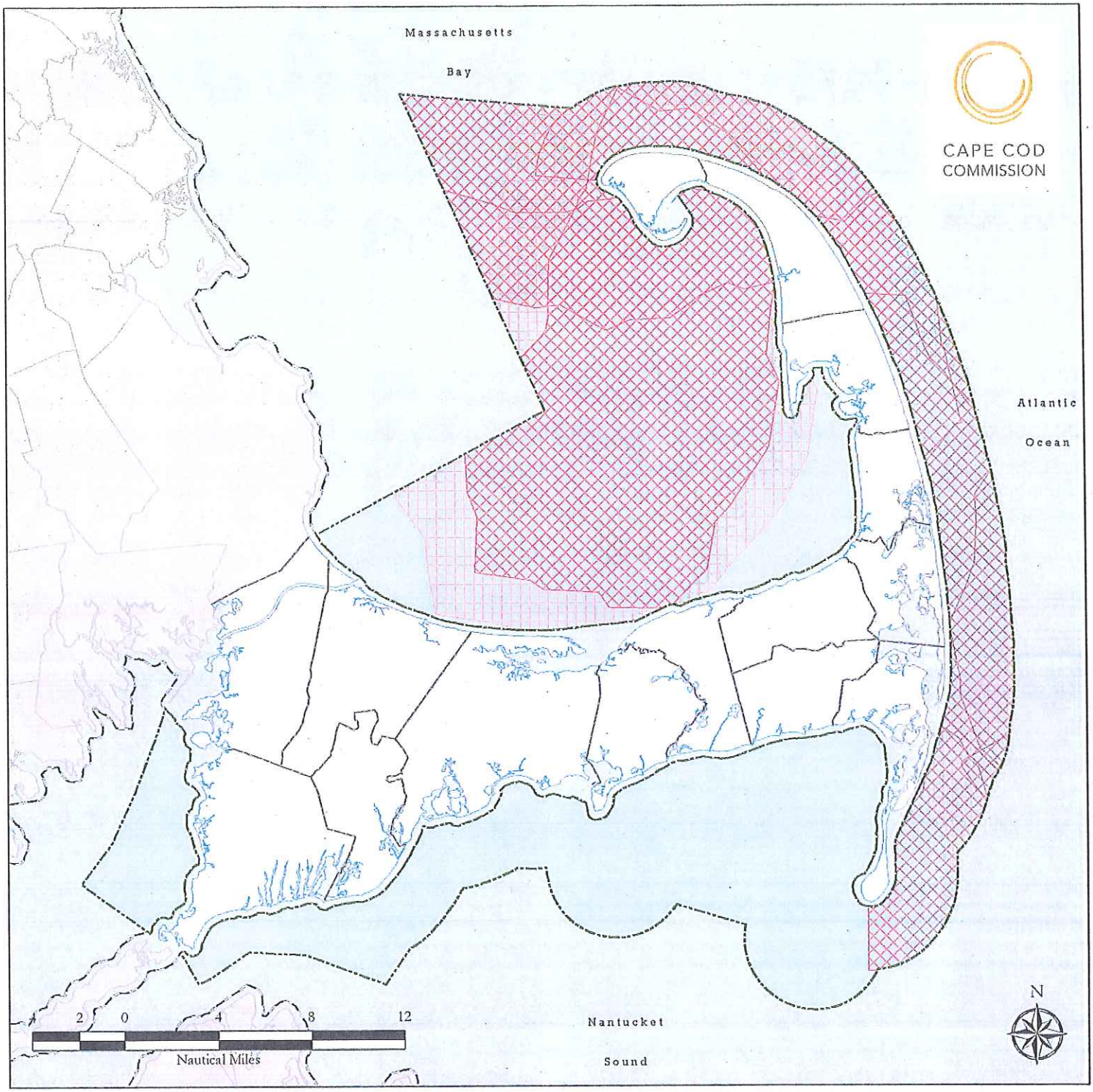
- Cape Cod OMP
- Nearshore Mass. Ocean Management Plan Boundary
- Exclusionary Areas



Map 15: Cape Cod Ocean Management Plan
Map of Sand and Gravel Mining Prohibited Areas

Legend

- Cape Cod OMP
- Nearshore Mass Ocean Management Plan Boundary
- Prohibited Areas
- Exclusionary Areas
- Provisional Areas



Map 16: Cape Cod Ocean Management Plan
Map of Cable and Pipeline Prohibited Areas

Legend

- Cape Cod OMP
- Nearshore Mass. Ocean Management Plan Boundary
- Prohibited Areas
- Exclusionary Areas
- Provisional Areas

Amendment to Definitions section of RPP

Add the following definitions:

Adverse Visual Impact: Where the degree of change in the scenic quality resulting from Development is expected to unreasonably impact or interfere with a scenic resource or otherwise unreasonably alter the character, setting or quality of a scenic resource.

Beach Nourishment: The placement of clean sediment, of a grain size compatible with existing beach sediment, on a beach to increase its width and volume for purposes of storm damage prevention, flood control, or public recreation.

Cable/Pipeline Prohibited Areas: The areas delineated on the *Cape Cod Ocean Management Plan Cable/Pipeline Prohibited Areas Map,* and incorporated by reference. The resources identified on this map include North Atlantic Right Whale Core Habitat, Fin Whale Core Habitat, Humpback Whale Core Habitat, and the Cape Cod Ocean Sanctuary, all as defined in the Massachusetts Ocean Management Plan.

Critical Habitat: A federal designation establishing habitat critical for the survival of federally listed rare species, such as the North Atlantic Right Whale, Roseate Tern, and Loggerhead Sea Turtle. Critical Habitat has been established for the North Atlantic Right Whale, but not for other federally listed species dependent on the ocean habitats of the Cape Cod region.

CZM: Massachusetts Office of Coastal Zone Management

Dredging: removal of materials including, but not limited to, rocks, bottom sediments, debris, sand, refuse, plant or animal matter, in any excavating, cleaning, deepening, widening or lengthening, either permanently or temporarily, of any flowed tidelands, rivers, streams, ponds or other waters of the Commonwealth. Dredging shall include Improvement Dredging, Maintenance Dredging, excavating and backfilling or other Dredging and subsequent refilling.

Exclusionary Areas: Special, sensitive or unique areas ("SSUs") that (a) comprise one or more of the following, as delineated generally in Figures 2-2 or 2-13 of the Massachusetts Ocean Management Plan or delineated more specifically through the provision of scientifically reliable evidence to the extent available: North Atlantic Right Whale Core Habitat, Fin Whale Core Habitat, Humpback Whale Core Habitat, Roseate Tern Core Habitat, Special Concern Tern Core Habitat, Leach's Storm-Petrel Important Habitat, Long-tailed Duck Important Habit, Colonial Waterbirds Important Nesting Habitat, Areas of Hard/Complex Seafloor, Eelgrass, Intertidal flats, and Important Fish Resource Areas; or (b) comprise expanded North Atlantic Right Whale Habitat as delineated on the map attached hereto as map XXX. To the extent an Exclusionary Area overlaps a Prohibited Area, it shall be treated as a Prohibited Area.

Hard/Complex Bottom or Hard/Complex Seafloor: Seafloor characterized by any combination of the following: 1) areas of exposed bedrock or concentrations of boulder,

cobble, or other similar hard bottom distinguished from surrounding unconsolidated sediments, 2) a morphologically rugged seafloor characterized by high variability in bathymetric aspect and gradient, or 3) man-made structures, such as artificial reefs, wrecks, or other functionally equivalent structures that provide additional suitable substrate for Development of hard bottom biological communities.

Improvement Dredging: any Dredging in an area which has not been previously dredged or which extends the original dredged width, depth, length, or otherwise alters the original boundaries of a previously dredged area for the purposes of improving navigation or flushing of an embayment or harbor.

MBUAR: Massachusetts Board of Underwater Archaeological Resources

Maintenance Dredging: Dredging in accordance with a license or permit in any previously authorized dredged area which does not extend the originally dredged depth, width, or length.

Massachusetts Ocean Management Plan, or MOMP: The plan promulgated by the Executive Office of Energy and Environmental Affairs of the Commonwealth of Massachusetts entitled, "Massachusetts Ocean Management Plan," dated December 2009, comprising two volumes (Volume 1 – Management and Administration, and Volume 2 – Baseline Assessment and Science Framework)

MEPA: Massachusetts Environmental Policy Act, M.G.L. Chapter 30, Sections 61-62H.

MHC: Massachusetts Historical Commission

MORIS: Massachusetts Ocean Resources Information System

Prohibited Areas: Areas that are Wind Energy Conversion Facility Prohibited Areas, Sand and Gravel Mining Prohibited Areas, or Cable/Pipeline Prohibited Areas, with the exception of cables attached to a Cape Cod Commission approved WECF that is not within a Cable Prohibited area or WECF Prohibited area, and is in a Provisional or Exclusionary area as defined by these regulations.

Provisional Areas: Areas within the offshore waters of Barnstable County that are not identified specifically as Prohibited Areas or Exclusionary Areas.

Sand and Gravel Mining or Sand Mining: Activities involving the removal of material from the ocean floor for the purposes of Beach Nourishment, but not including Maintenance Dredging activities that include a Beach Nourishment component.

Sand and Gravel Mining Prohibited Areas: The areas delineated on the *Cape Cod Ocean Management Plan Sand and Gravel Mining Prohibited Areas Map,* and incorporated by reference. The resources identified on this map include North Atlantic Right Whale Core Habitat, Fin Whale Core Habitat, Humpback Whale Core Habitat, and the Cape Cod Ocean Sanctuary, all as defined by the Massachusetts Ocean Management Plan.

Scenic Resources: Locations or areas that are recognized, utilized, and enjoyed by the public for their visual and scenic qualities and whose features, views, patterns, and characteristics contribute to a distinct sense of appreciation of the natural and cultural environment.

Solid Wastes: Any useless, unwanted, and/or discarded material, including but not limited to any material that is intended to be disposed or being disposed, or that is stored, treated or transferred pending such disposal resulting from construction, testing, maintenance and decommissioning of any Development related structures and equipment.

TOY: Time of Year.

Visual Impact: The degree of change in scenic quality resulting from Development.

Visual Impact Assessment (VIA): The process for determining the degree of change in scenic quality resulting from Development, including but not limited to establishing the zone of visual influence, identifying visual and Scenic Resources, preparing visual simulations, and assessing the magnitude of the proposed change.

Amend RPP: Resources of Regional Importance, Natural Resources:

Add:
Important Bird Areas
Ocean Sanctuaries