

HINGHAM WETLAND REGULATIONS
CONSERVATION COMMISSION
HINGHAM, MASSACHUSETTS
DRAFT FOR REVIEW, MAY 2026

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PART I. PURPOSE AND PROCEDURES

1.0 AUTHORITY, PURPOSE, AND WETLAND VALUES

- (a) Purpose. These Regulations were promulgated under the Town of Hingham Wetlands Protection Bylaw (General Bylaws of the Town of Hingham, Article 22), henceforth known as the Bylaw, in order to implement the purposes of the Bylaw and to protect the wetlands, related water resources and adjoining land areas of the Town of Hingham by controlling activities affecting Resource Areas. These Regulations set forth additional definitions, regulations and performance standards necessary to protect the values and/or intent of the Bylaw, protect additional Resource Areas and wetland values, and specify standards and procedures stricter than those of the Wetlands Protection Act, M.G.L. Ch. 131, § 40 and implementing regulations at 310 CMR 10.00.
- (b) Authority. The Town of Hingham Wetland Regulations (HWR) were promulgated by the Town of Hingham Conservation Commission (Commission), pursuant to the authority granted under the Bylaw and under the Home Rule authority of this municipality. The HWR shall complement the Bylaw, and shall have the force of law upon their effective date. Following public notice and a public hearing thereon, these Regulations may be amended and/or added to by a majority vote of the Commission.
- (c) Wetland Values. These regulations are promulgated in order to contribute to the following wetland values, including, but not limited to:
 - (1) protection of public or private water supply;
 - (2) protection of surface water and groundwater;
 - (3) flood control;
 - (4) erosion and sedimentation control;
 - (5) storm damage prevention, including but not limited to coastal storm flowage;
 - (6) prevention and abatement of water pollution;
 - (7) protection of fisheries and marine fisheries;
 - (8) protection of shellfish;
 - (9) protection of wildlife and wildlife habitat;
 - (10) protection of rare species habitat, including rare plant and animal species;
 - (11) protection of recreation and open space; and
 - (12) protection of aesthetics.

2.0 JURISDICTION

- (a) The Bylaw and Regulations provide protection for Resource Areas and their wetland values. Resource Areas protected under the Bylaw are ANY of the following:

- (1) Any freshwater or coastal wetland, isolated wetland, beach, dune, flat, marsh, wet meadow, bog, swamp, vernal pool, isolated land subject to flooding, creek, river, stream, pond, lake, estuary, or ocean;
- (2) Any bank bordering on a freshwater or coastal wetland or water body;
- (3) Land under water bodies, including but not limited to, land under the ocean, ponds, lakes, rivers, streams, creeks, any fresh water or coastal wetland, and estuaries;
- (4) Land bordering on the ocean, including but not limited to, beaches, dunes, tidal flats, coastal bank, salt marshes, salt meadows, and estuaries;
- (5) Land within a horizontal distance of 100 feet from the boundary of any area specified in HWR Section 2.0(a)(1-4) (hereinafter referred to as the “Buffer Zone”);
- (6) Land subject to tidal action, coastal storm flowage, or flooding, including but not limited to, the inland and coastal floodplains (FEMA Flood Zones A, AE and VE, as shown on the Flood Insurance Rate (FIRM) maps for the Town of Hingham); or
- (7) Land within a horizontal distance of 200 feet from the mean annual high-water line of any perennial river, stream, or creek (hereinafter referred to as the “Riverfront Area”).

3.0 REGULATED ACTIVITIES

Activities subject to  regulation under the Bylaw and Regulations include the following:

- (a) Any activity proposed or undertaken within a Resource Area as described in HWR Section 2.0 et seq.;
- (b) Any activity deemed by the Commission as likely to have a significant or cumulative adverse effect upon Resource Areas as defined herein;
- (c) Any activity, including but not limited to, any and all of the following activities when undertaken to, upon, within or affecting Resource Areas or their wetland values, as determined by the Commission:
 - (1) Removal, excavation, or dredging of soil, sand, gravel, or aggregate materials of any kind;
 - (2) Changing of preexisting drainage characteristics, flushing characteristics, salinity distribution, sedimentation patterns, flow patterns, or flood retention characteristics;
 - (3) Drainage, or other disturbance of water level or water table;
 - (4) Dumping, discharging, or filling with any material which may degrade water quality;
 - (5) Placing of fill, or removal of material;
 - (6) Driving of piles, construction or expansion or repair of buildings or structures or construction of any kind whether it be for industrial, commercial, residential, recreational or other purposes, regardless of its size;

- (7) Placing of obstructions including, but not limited to, dams, or objects in water or the surface water or groundwater hydrology of any Resource Area;
 - (8) Destruction or removal of plant life, including, but not limited to, cutting or trimming of trees and shrubs;
 - (9) Changing temperature, biochemical oxygen demand, or other physical, biological, or chemical characteristics of any waters;
 - (10) Any activities, changes, or work which may cause or tend to contribute to pollution of any body of water or groundwater; and
 - (11) Incremental activities which cause, or may cause, or contribute to a cumulative adverse effect on the Resource Areas and interests protected by this Bylaw.
- (d) Activities Outside the Areas Subject to Protection Under the Bylaw. Any activity proposed or undertaken outside the areas specified in HWR Section 2.0 is not subject to regulation under the Bylaw, and does not require the filing of a Permit Application unless and until that activity actually alters a Resource Area. In the event that the Commission determines that such activity has in fact altered a Resource Area referenced in HWR Section 2.0(a)(1) through (8), it shall impose such conditions on the activity or any portion thereof as it deems necessary to contribute to the protection of the wetland values identified in HWR Section 1.3.

4.0 EXEMPTIONS

The following activities are not subject to further regulation under the Hingham Wetlands Protection Bylaw provided that the activity is performed solely within the Buffer Zone to Resource Areas as defined in HWR Section 2.0(a)(5) and in a manner as to reduce the potential for any adverse impacts to the Resource Area.

- (a) Maintaining, repairing or replacing, but not substantially changing or enlarging, an existing and lawfully located structure or facility used in the service of the public to provide electric, gas, sewer, water, telephone, or telecommunication services provided that notice has been given to the Conservation office prior to commencement of work, and provided best management practices will be implemented to protect Resource Areas throughout the duration of work;
- (b) Planting native, straight species of trees, shrubs, and/or plants provided work is done by hand and there is no change to existing topography and no herbicide application;
- (c) Hand removal of non-native invasive species as defined by the Massachusetts Invasive Plants Advisory Group;
- (d) Work performed for normal maintenance or improvement of land in agricultural or aquacultural use as specifically defined by the Wetlands Protection Act Regulations at 310 CMR 10.00;
- (e) Removal of dead or storm damaged trees which are deemed to be an imminent hazard to public safety, as confirmed by the Hingham Department of Public Works Tree Warden, the Conservation Officer, or a certified arborist with notification provided to the Conservation office prior to such work;

- (f) Fencing around existing vegetable gardens;
- (g) Installation of directly embedded utility poles and associated anchors, push braces or grounding mats/rods along existing paved or unpaved roadways and private roadways/driveways, and their existing maintained shoulders, or within existing railroad rights-of-way, provided that all work is conducted within ten feet of the road or driveway shoulder and is a minimum of ten feet from the edge of the Bank or Bordering Vegetated Wetland and as far away from Resource Areas as practicable, with no additional tree clearing or substantial grading within the Buffer Zone, and provided that all vehicles and machinery are located within the roadway surface during work;
- (h) Installation of underground utilities (e.g., electric, gas, water) within existing paved or unpaved roadways and private roadways/driveways, provided that all work is conducted within the roadway or driveway and that all trenches are closed at the completion of each workday;
- (i) Installation and repair of underground sewer lines within existing paved or unpaved roadways and private roadways/driveways, provided that all work is conducted within the roadway or driveway and that all trenches are closed at the end of completion of each workday;
- (j) Installation of new equipment within existing or approved electric or gas facilities when such equipment is contained entirely within the developed/disturbed existing fenced yard;
- (k) Installation of access road gates at public or private road entrances to existing utility right-of-way access roads, provided that all vehicles and machinery are located within the roadway surface during work;
- (l) Removal of existing utility equipment (poles, anchors, lines) along existing or approved roadways or within existing or approved electric, water or gas facilities, provided that all vehicles and machinery are located within the roadway surface during work;
- (m) Installation, repair, replacement or removal of signs, signals, sign and signal posts and associated supports, braces, anchors, and foundations along existing paved roadways and their shoulders, provided that work is conducted as far from Resource Areas as practicable, and is located a minimum of ten feet from a Resource Area, any excess soil is removed from the project location, and any disturbed soils are stabilized as appropriate.

Any removal, filling, dredging, or altering authorized by Section 2A of the Bylaw shall be subject to best management practices for sediment and erosion control.

Projects that may be administratively reviewed and approved by the Conservation Officer without a formal hearing before the Conservation Commission are specified in HWR Section 7.14.

5.0 GENERAL PROVISIONS

5.1. Fill within Resource Areas

- (a) No fill shall be placed in any Resource Area (including Buffer Zone) so as to alter the flow of surface water in a way that the Conservation Commission feels will adversely affect the wetland values of the Resource Area(s).

- (b) Dumping of lawn wastes, brush, leaves, or other materials or debris is not permitted in any Resource Area as described in HWR Section 2.0(a)(1-7). An exception is made for dumping in the Buffer Zone where ordinary residential, vegetative yard waste may be deposited, for decomposition or for wildlife habitat, but as far from the Resource Area as practical. If the Commission determines that excessive cumulative dumping under this exception has constituted fill, or otherwise adversely affects the wetland values of the Resource Area, the Commission may require removal or disbursement of material.
- (c) The Commission is authorized to deny any filling of any Resource Area in order to protect the wetland values of the Resource Area.

5.2. Underground Storage Tanks

- (a) No underground storage tank for oil or hazardous material is permitted in any Resource Area as described in HWR Section 2.0(a)(1-4, 6-7) or within 50 feet of Resource Areas described in HWR Section 2.0(a)(1-4).
- (b) No new construction for underground storage of gasoline, oil or other fuels or hazardous materials shall be permitted in any Resource Area, including the 100-foot Buffer Zone.
- (c) Existing underground storage tanks may be replaced under guidelines as set by the Town of Hingham Fire Prevention Officer, provided they are not located in a Resource Area described in HWR Section 2.0(a)(1-4, 6-7) or within 50 feet of Resource Areas described in HWR Section 2.0(a)(1-4).

5.3. Septic Systems

- (a) Subsurface Disposal of Sanitary Sewage (Title 5). The State Environmental Code (310 CMR 15.00 et seq.), administered locally by the Town of Hingham Board of Health, is a minimal public health regulation that may be supplemented at the local level. This code was developed to protect public health against bacteria-caused disease; it was not designed to protect public health from viral contamination nor was it designed to protect environmental quality from septic-derived nutrient and toxic contamination. The use of septic systems may have a significant or cumulative adverse effect on the protection of public and private water supply; protection of ground water; flood control; erosion and sedimentation control; prevention of water pollution; protection of fisheries; protection of shellfish; protection of wildlife and wildlife habitat; protection of rare species, including rare plant and animal species; protection of recreation; protection of agriculture; protection of aquaculture; and protection of aesthetics.

- (b) Presumption Concerning Title 5 of the State Environmental Code

A subsurface sewage disposal system that is to be constructed in compliance with the requirements of Title 5 of the State Environmental Code (310 CMR 15.00 et seq.), or more stringent Town of Hingham Board of Health requirements, shall be presumed to protect the wetland values identified in HWR Section 1.0(c), but only if said system is located in accordance with the following:

- (1) No component of the system is located within a coastal resource area (coastal bank, coastal beach, coastal dune, salt marsh) or inland resource area (wet meadow, vegetated wetland, marsh, swamp, inland bank, bog);
- (2) No component of the system is located within 100 feet of said areas specified above, measured horizontally from the boundary;
- (3) No component of the system is located within the 100-foot Vernal Pool Protection Zone as defined in HWR Section 18.6(c);
- (4) No component of the system is located within the Velocity Zone or Moderate Wave Action (MoWA) Area, as defined in HWR Section 17.10; and
- (5) No component of the system is located within 100 feet of the mean annual high water line of a perennial stream or mean high water line (determined under 310 CMR 10.23) for tidal rivers.

This presumption, however, shall apply only to impacts or the discharge from a sewage disposal system and not to the impacts from construction of that system, such as erosion and siltation from the excavation, placement of fill, or removal of vegetation.

All distances shall be measured from the boundary of the resource area in question, from the top of a coastal bank or the contour at the highest spring tide elevation in coastal areas. No setbacks may be attained by filling, altering, or relocating a Resource Area.

The setback distances specified above shall not be required for the repair or replacement of septic systems constructed prior to the effective date of these regulations and Bylaw, provided the applicant demonstrates there is no alternative location available on the lot and such work has been approved by the Town of Hingham Board of Health.

The setback distances specified above shall be required for any enlargement of a system which accompanies expanded scope of use, or an increase in flow.

This presumption may be overcome only by credible evidence from a competent source that compliance with Title 5 and more stringent local requirements will not protect the interests identified in the Bylaw.

- (c) Obtaining all necessary permits from other agencies does not ensure issuance of an approval Order of Conditions (herein OOC).

5.4. Limited Projects

- (a) Notwithstanding the provisions of Part II of these regulations, and performance standards at 310 CMR 10.25 through 10.35 and 10.54 through 10.58 and 10.60, as may be amended, the Conservation Commission may issue an OOC and impose such conditions as will contribute to the interests identified in the bylaw permitting Limited Projects listed in 310 CMR 10.24(7), 10.24(8), and 10.53(3 through 6), as may be amended, (although no such project may be permitted which will have any adverse effect on specified habitat sites or rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.37 and 310 CMR 10.59, as may be amended). In reviewing proposed Limited Projects, the Conservation Commission shall consider the magnitude of

the alteration and the significance of the project site to the interests identified in the bylaw, the availability of reasonable alternatives to the proposed activity, the extent to which mitigation measures, including replication or restoration, are provided to contribute to the protection of the interests identified in the bylaw. The Commission may issue an OOC permitting an Ecological Restoration Project as an Ecological Restoration Limited Project if the Commission determines that the project meets the eligibility criteria set forth in 310 CMR 10.24(8) or 10.53(4).

- (b) The applicant shall submit information to describe the work and affected Resource Areas, both for the proposed location and alternative site locations, and configurations sufficient for a determination by the Conservation Commission. The scope of alternatives to be considered shall be commensurate with the scale and purpose of the proposed activity, the impacts of the proposed activity, and the uses and functions of the existing Resource Areas. The scope of alternatives should include, but is not limited to, the following:
 - (1) detailed explanation justifying the project's "limited project" status;
 - (2) documentation from other agencies and/or boards (i.e., planning board, zoning board of appeals) regarding relief from minimum requirements (e.g., roadway widths at crossing areas) if available;
 - (3) demonstration of the use of best available technology and/or construction methodology; and
 - (4) plans, specifications, details, field data, methods, and materials incorporated into the design of the proposed project and alternatives which will minimize impacts to wetland Resource Areas (i.e., retaining wall versus graded/geotechnical slope).
- (c) Where an applicant identifies an alternative that can be summarily demonstrated not to be practicable, an evaluation is not required.
- (d) The purpose of evaluating project alternatives is to locate activities so that impacts to Resource Areas are avoided to the extent practicable. Projects must be evaluated to determine whether alternatives are practicable. As much of a project as feasible shall be sited outside the Resource Areas. If siting a project entirely outside Resource Areas is not practicable, alternatives shall be evaluated which locate the project as far as possible from Resource Areas.

5.5. Stormwater Management

Stormwater management drainage analyses and design calculations shall use precipitation depths based on 90% of the National Oceanic and Atmospheric Administration (NOAA) Atlas 14 upper confidence interval for the project location, also known as "NOAA Plus." These "NOAA Plus" values are calculated by multiplying the NOAA Atlas 14 upper confidence interval by 0.9. Applicants may use the precipitation depths provided in the following table or the NOAA Plus precipitation depths for the project location, as provided on the NOAA Atlas 14 Precipitation Frequency Data Server website.¹

¹ NOAA Atlas 14 Precipitation Frequency Data Server <https://hdsc.nws.noaa.gov/hdsc/pfds/>

Design Storm Recurrence Interval and Duration	Precipitation Depth (90% of the upper confidence interval) (inches)
1-year, 24-hour	3.07
2-year, 24-hour	3.73
10-year, 24-hour	5.76
100-year, 24-hour	9.99

5.6. Regulatory Updates

The Commission may adopt, from time to time, additional definitions, regulations, fees, and performance standards as they may deem necessary to protect the wetland values of the Bylaw. Said definitions, regulations, fees and performance standards shall become effective upon publication following a public hearing for which public notice has been provided.

6.0 DEFINITIONS

Definitions of selected words, terms and phrases used in these Regulations are provided below, where they have not already been defined in the Bylaw. Definitions of Resource Areas are found in subsequent sections for each Resource Area. Where applicable, the definitions, presumptions of significance, and performance standards, set forth in the Massachusetts Wetlands Regulations, 310 CMR 10.00 et seq., are hereby incorporated herein only when no definitions, presumptions of significance or performance standards are given in these regulations.

Activity means any form of draining, dumping, dredging, damming, discharging, excavating, filling or grading; the erection, reconstruction or expansion of any buildings or structures; the driving of pilings, the construction or improvement of roads and other ways; the changing of runoff characteristics, the intercepting or diverging of ground or surface water; the installation of drainage, sewage and water systems; the discharging of pollutants, the destruction of plant life; and any other changing of the physical characteristics of land.

Aesthetics means the relevant qualities to be protected under the Hingham Wetlands Bylaw which are due to those natural and natively scenic impressions of all Resource Areas protected under the Hingham Wetlands Bylaw including but not limited to our coastal and inland shores, ponds, lakes, streams, rivers, marshes, and the lands bordering them. Activities in or within 100 feet of any Resource Area shall not have significant effects on aesthetic values.

Alter The term “alter” shall include, without limitation, the following activities when undertaken to, upon, within or affecting Resource Areas protected by this bylaw: removal, excavation, or dredging of soil, sand, gravel, or aggregate materials of any kind; changing of preexisting drainage characteristics, flushing characteristics, salinity distribution, sedimentation patterns, flow patterns, or flood retention characteristics; drainage, or other disturbance of water level or water table; dumping, discharging, or filling with any material which may degrade water quality; placing of fill, or removal of material, which would alter elevation; driving of piles, erection, expansion or repair of buildings, or structures of any kind; placing of obstructions or objects in water; destruction of plant life including cutting or trimming of trees and shrubs; changing temperature, biochemical oxygen demand, or other physical, biological, or

chemical characteristics of any waters; any activities, changes, or work which may cause or tend to contribute to pollution of any body of water or groundwater; incremental activities which have, or may have, a cumulative adverse impact on the Resource Areas protected by this bylaw.

Climate Change means significant changes in average conditions such as temperature, precipitation, wind patterns, and other aspects of climate that occur over years, decades, centuries or longer. Climate change involves longer-term trends, such as shifts toward warmer, wetter, or drier conditions.

Coastal Resilience means the ability of coastal ecological systems to withstand, recover from, and adapt to shocks and stresses. These shocks and stresses are exacerbated by climate change through documented sea level rise and more frequent storm activity.

Coastal Engineering Structure means, but is not limited to, any breakwater, bulkhead, groin, jetty, revetment, seawall, weir, riprap or any other structure that is designed to alter wave, tidal or sediment transport processes in order to protect inland or upland structures from the effects of such processes.

Commission means the Hingham Conservation Commission.

Conservation Officer means the duly authorized representative of the Commission, with the authority to carry out certain of the Commission's functions.

Cumulative Adverse Effect means an effect that is significant when considered in combination with other activities that have occurred, are going on simultaneously, or that are likely to occur, whether other activities have occurred or are contemplated as a separate phase of the same project, such as the build-out of a subdivision or an industrial park, or unrelated but reasonably foreseeable actions, including other development projects that are currently under construction, under review, or that may be expected to come forward.

Ecological Climate Resilience means the ability of an ecosystem or an ecological community to recover and achieve a similar level of functioning after a climate-related disturbance, such as flooding, severe storms, high heat, and drought. In an ecosystem, the specific species may change, but the overall complexity, structure, function, and biodiversity of the system is maintained. Ecological resilience is often associated with undisturbed, healthy, natural, connected systems with high biodiversity of native species, and likewise can be fostered through appropriate ecological restoration and avoidance of synergistic stressors (such as pollution, land use change, hydrologic alterations, spread of invasive species) caused by humans.

Impervious Surface means any surface that prevents or significantly impedes the infiltration of water into the underlying soil, including, but not limited to, artificial turf, paved roads and driveways, building rooftops, parking lots, covered porches, sheds, pavilions, swimming pools, hot tubs, walls, impermeable patios and walkways.

Minimize means to make as small as possible. To achieve the least amount of adverse effect that can be attained using best available measures or best practical measures, whichever is referred to in the pertinent section.

Naturally vegetated condition means an area on a lot or parcel of land, or portion thereof, that is left in a natural, undisturbed vegetative state; has existed in a primarily natural, undisturbed state, but has been enhanced with indigenous plantings conducive to improved wildlife habitat according to a plan approved by the Commission; or has been disturbed, but is revegetated with indigenous plantings that will return the land to its pre-disturbance condition according to a plan approved by the Commission.

Navigation means the ability to traverse a waterway by water craft and is part of the wetland values of recreation under the Bylaw.

Person means any individual, group of individuals, association, partnership, corporation, company, business, organization, trust, estate, the Commonwealth or political subdivision thereof, administrative agency, public or quasi-public corporation or body, or any other legal entity or its legal representatives, agents, or assigns.

Pervious Surface means a surface that allows water to percolate into the soil to filter out pollutants and recharge the water table, including but not be limited to, lawns, permeable patios and walkways, landscape beds, and certain structures such as decks (with spacing between planks and pervious surface beneath), pergolas with open roof, and outdoor showers. "Pervious pavers," "pervious asphalt," and other similar materials will only be considered pervious if a suitable design for the system as a whole is submitted and approved. Otherwise, these constructed materials will be considered impervious.

Rare species habitat means the following areas utilized by threatened, rare, or endangered plant or animal species, or species of Special Concern; or species on the "Watch List"; or Priority Sites of Rare Species habitat; or Exemplary Natural Communities; (all of which are determined by the Massachusetts Division of Fisheries and Wildlife, Natural Heritage & Endangered Species Program).

Recreation means the use and enjoyment of our natural surroundings in a manner consistent with their preservation. Activities should not hinder access to coastal and inland resources. Activities that shall be considered part of the use and enjoyment of our natural surroundings in a manner consistent with their preservation shall include but not be limited to: recreational boating, swimming, fishing, shellfishing, nature study, painting and drawing, aesthetic enjoyment, walking, hiking, cross country skiing, and snowshoeing. The Commission's analysis of the project's effect on the wetland value of recreation should be relative to a proposal's potential impacts on other protected wetland values, with priority given to enhancing and protecting those recreational values which are not detrimental to the continued natural functions of wetlands or their wetland values.

Redevelopment means replacement, rehabilitation or expansion of existing structures, improvement of existing roads, or reuse of degraded or previously developed areas for purposes of 310 CMR 10.58 and HWR Section 18.7, governing work in the Riverfront Area. For purpose of the Stormwater Management Standards as provided in 310 CMR 10.05(6)(k) through (q), redevelopment is defined to include the following projects:

- (1) maintenance and improvement of existing roadways including widening less than a single lane, adding shoulders, correcting substandard intersections, improving existing drainage systems and repaving;

- (2) development, rehabilitation, expansion and phased projects on previously developed sites provided the redevelopment results in no net increase in impervious area; and
- (3) remedial projects specifically designed to provide improved stormwater management such as projects to separate storm drains and sanitary sewers and stormwater retrofit projects.

Resource Area means any of the areas specified in HWR Section 2.0. It is used synonymously with Area Subject to Protection Under the Bylaw, each one of which is described in HWR Section 17.0 through 19.0.

Significant means plays a role. A Resource Area is significant to a wetland value when the Resource Area plays a role in the provision or protection of that wetland value.

Structure means a combination of materials or things arranged or constructed for permanent or temporary occupancy, shelter, or use, including but not limited to a building, bridge, trestle, wireless communications facility, tower, rip rap associated with stormwater outfalls, framework, retaining wall, tank, tunnel, tent, shed, stadium, reviewing stand, platform, swimming pool, sports court, shelter, pier, wharves, bin, fence (excluding split-rail fence), or sign.

Vernal Pool means any confined basin or depression not occurring in existing lawns, gardens, landscaped areas, or driveways which, at least in most years, holds water for a minimum of two continuous months during the spring and/or summer, is free of adult fish populations, and provides essential breeding and rearing habitat functions for amphibian, reptile, or vernal pool community species, regardless of whether the wetland site has been certified as a vernal pool by the Massachusetts Division of Fisheries and Wildlife and Fisheries.

Vista Pruning means the selective thinning of tree branches or understory to establish a specific "window" to improve visibility. Vista pruning does not include the cutting of trees which would reduce the leaf canopy to less than 90% of the existing crown cover and does not include the mowing or removal of understory brush.

Water-dependent uses mean those uses and facilities which require direct access to, or location in, marine, tidal or inland waters and which therefore cannot be located away from said waters, such as: marinas, public recreational uses, navigational and commercial fishing and boating facilities, water-based recreational uses, navigation aids, basins, and channels.

Wildlife habitat means areas which, due to their plant community composition and structure, hydrologic regime or other characteristics, provide food, shelter, migratory or overwintering areas, or breeding areas for animals. This includes all areas in a naturally vegetated condition.

7.0 PROCEDURES

- (a) If zoning relief will be required for the proposed construction or alteration of a building of any type, the Applicant must pursue zoning relief concurrently with filing with the Conservation Commission and must notify the Commission in writing that said relief is being sought.

- (b) All applications must follow the Hingham Conservation Commission Policy on Receipt of Information (see Appendix C).
- (c) Correspondence, if any, with individual Conservation Commission members should be addressed to the Hingham Conservation Office.
- (d) The applicant must sign all forms. For a Notice of Intent (NOI) or Abbreviated Notice of Resource Area Delineation (ANRAD), if the applicant is not the owner of the subject property, written permission of the landowner must be obtained.
- (e) Applicants shall use Massachusetts Wetlands Protection Act application forms for respective filings. The Town of Hingham may in the future develop Town-specific forms.
- (f) Certain projects that fall within the jurisdiction of the Conservation Commission are of a limited scale and create no significant threat to any interests of the Massachusetts Wetlands Protection act or the Hingham Wetlands Protection Bylaw. Such projects do not require a formal hearing before the Conservation Commission and may be reviewed and acted on by the Conservation Officer or such other authorized designee of the Commission. The intent of the administrative review and decision process is to expedite permitting while ensuring protection of Resource Areas. Administrative Review procedures are described in HWR Section 7.13.

7.1. Request for Determination of Applicability (RDA)

- (a) Any person who desires a determination as to whether the Bylaw applies to land, or to work that may affect a Resource Area protected under the Bylaw, may submit to the Commission by certified mail or hand delivery a Request for Determination of Applicability using WPA Form 1 or as may be modified and provided by the Town of Hingham and according to instructions provided by the Town of Hingham. For work within Riverfront Areas, an applicant may submit to the Commission by certified mail or hand delivery a Request for Determination of Applicability to identify the scope of alternatives to be evaluated under HWR Section 18.7, including sufficient information to enable the Commission to determine the applicable scope of alternatives.
- (b) Any person who proposes to perform work within the Buffer Zone or Riverfront Area shall submit to the Commission either a Notice of Intent for such work, a Request for Determination of Applicability, or a Request for Administrative Review. Said request shall include sufficient information, to enable the Commission to find and view the area and to determine whether the proposed work will alter a Resource Area under the Bylaw.
- (c) A Request for a Determination of Applicability shall include certification in writing that the owner of the area subject to the request, if the person making the request is not the owner, has been notified that a determination is being requested under the Bylaw.

7.2. Determination of Applicability

- (a) Within 21 calendar days after the date of receipt of the Request for a Determination of Applicability, unless the 21 day period is voluntarily waived by the applicant, the Commission shall hold a public meeting. Notice of the time and place of the public meeting at which the determination will be made

shall be given by the Commission at the expense of the person making the request not less than 5 (five) business days prior to such meeting, by publication in a newspaper of general circulation in the Town of Hingham, and by mailing a notice to the person making the request and the owner. Notice shall also be given in accordance with the open meeting law, M.G.L. c. 39, §23B. Said determination shall be signed by a majority of the Commission, and copies thereof shall be sent by the Commission to the person making the request and to the owner. Delivery of the copy to the person making the request shall be by hand delivery or certified mail, return receipt requested. Said determination shall be valid for three (3) years from the date of issuance.

- (b) The applicant may request to continue a meeting to a date certain announced at the meeting. Reasons for continuing a meeting may include, but are not limited to, failure of the applicant or others to provide information by the submittal deadline, lack of timely receipt of necessary information from the applicant, time needed by the applicant to provide additional or missing information and for the Commission to review such information, inability to view the proposed project, need for additional information to evaluate the potential impacts upon the wetland values. Once the Commission closes the public meeting it shall issue a Determination within 21 calendar days, unless the applicant has voluntarily waived the 21 day time period.
- (c) The Commission may request a signed voluntary waiver of the 21-day requirement for issuing its decision.
- (d) The Commission shall find that the Hingham Wetland Bylaw and Hingham Wetland Regulations apply to the land, or a portion thereof, if it is a Resource Area under the Bylaw. The Commission shall find that the Bylaw and Regulations apply to the work, or a portion thereof, if it is an Activity Subject to Regulation under the Bylaw as defined in HWR Section 3.0. The Commission shall identify the scope of alternatives to be evaluated, if requested, for work within Riverfront Areas under HWR Section 18.7.
- (e) A Notice of Intent which is filed as a result of a positive determination shall be filed with the Conservation Commission and all of the procedures set forth in HWR Section 7.4. A Determination of Applicability may be conditioned by the Commission to protect the wetland values of the Resource Areas involved.

7.3. Abbreviated Notice of Resource Area Delineation (ANRAD)

- (a) To establish the extent of Bordering Vegetated Wetland and other Resource Areas on land subject to protection under the Bylaw, applicants may use the Abbreviated Notice of Resource Area Delineation for the confirmation of a delineated boundary of bordering vegetated wetlands and other Resource Areas on the site, prior to filing a Notice of Intent for proposed work. Alternatively, the boundary of Bordering Vegetated Wetland (or other Resource Area) may be determined through the filing of a Notice of Intent. If onsite conditions do not allow accurate identification of the wetlands line, the Commission may request that the applicant postpone its request until the site can be accurately viewed.
- (b) The ANRAD shall be submitted on the form and according to instructions provided on WPA Form 4A or local forms as may be developed by the Town of Hingham Conservation Commission. A

public hearing shall be held as described under HWR Section 7.6. Procedures for an ANRAD filing, hearing, and issuance of a decision follow those outlined for the Notice of Intent as described in HWR Section 7.4. If the Commission determines that the Resource Areas are correctly delineated, an approval Order of Resource Area Delineation (ORAD) will be issued.

- (c) The Department of Environmental Protection (DEP) File Number for the ANRAD submitted under 310CMR 10.00 may serve as the File Number for the ANRAD submitted under the Bylaw. The designation of a file number shall not imply that the plans and supporting documents have been judged adequate for the issuance of an ORAD, but only that copies of the minimum submittal requirements contained in the General Instructions have been filed.
- (d) If the Commission determines that the Resource Areas are incorrectly or incompletely delineated, they shall request that the applicant provide the correct delineation or missing information. If the correct delineation or missing information is not provided, the Commission shall close the ANRAD hearing and issue a denial ORAD within 21 calendar days, unless the applicant has voluntarily waived the 21 day requirement, specifying each Resource Area that is incorrectly or incompletely delineated. The Commission shall have the authority to deny any proposed Resource Area delineation when 1) the application is incomplete; 2) the delineation is incorrect, or 3) the Commission requires additional information that is not provided by the applicant in a timely manner.
- (e) The applicant may request to continue a hearing to a date certain announced at the hearing. Reasons for continuing a hearing may include, but are not limited to, lack of timely receipt of necessary information from the applicant or others (including comments, recommendations, or action of other town boards and officials), time needed by the applicant to correct the delineation and for the Commission to review the corrected delineation, inability to view the proposed delineation, need for additional information to evaluate the potential impacts upon the wetland values, or incorrect or incomplete abutter notification as required under HWR Section 7.5. Once the Commission closes the public hearing it shall issue an ORAD within 21 calendar days unless the applicant has voluntarily waived the 21 day time period, specifying whether the proposed Resource Area boundaries are correct or not (i.e., approval or denial of the boundaries).
- (f) The Commission may request a signed voluntary waiver of the 21 day requirement for issuing its decision.

7.4. Notice of Intent (NOI)

- (a) Any person who proposes to do work that may alter or affect any Resource Area under the Bylaw shall file a NOI on Forms provided by the town of Hingham and other application materials WPA Form 3 or as may be modified by the Town of Hingham and in accordance with the submittal requirements by the Town of Hingham Conservation Commission. Two copies of the completed Forms with supporting plans and documents shall be sent by certified mail or hand delivery to the Commission.
- (b) As a minimum, all Notice of Intent Project Plans shall include the following:
 - (1) All wetland Resource Areas as defined in these Regulations, including the 0-50 foot and 50-100 foot areas within the Buffer Zone.

- (2) Boundary of the 0.2% Annual Chance Flood Hazard Zone (i.e., 500-year flood zone) as designated by the Federal Emergency Management Agency (FEMA).
 - (3) For projects proposed within Land Subject to Coastal Storm Flowage as defined in HWR Section 17.10, the boundary of the 2070 projected 1% annual chance flood, as modeled by the Massachusetts Coast Flood Risk Model (MC-FRM).
 - (4) Existing and proposed topography of site at a minimum of 1-foot contour intervals based on North American Vertical Datum of 1988 (NAVD 88).
 - (5) Existing and proposed buildings, structures, hardscapes, and fencing.
 - (6) All existing and proposed surface and subsurface utilities.
 - (7) Location of temporary erosion and sediment controls and other construction-phase BMPs.
 - (8) Limit of Work (LOW) line.
 - (9) The drainage basin in which the site is located shall be delineated on the locus plan.
 - (10) Proposed drainage structures and stormwater management features including, but not limited to, subsurface infiltration, catch basins, and outfalls.
 - (11) All trees 6-inches or greater in diameter at breast height (DBH) and tree species.
 - (12) Existing and proposed tree/brush line.
 - (13) Title Block included on all plans located at the lower right hand corner, oriented to be read from the bottom when bound at the left margin.
- (c)  To establish the extent of Bordering Vegetated Wetland and other Resource Areas on land subject to protection under the Bylaw, applicants may use the Abbreviated Notice of Resource Area Delineation for the confirmation of a delineated boundary of bordering vegetated wetlands and other Resource Areas on the site, prior to filing a Notice of Intent for proposed work. Alternatively, the boundary of Bordering Vegetated Wetland (or other Resource Area) may be determined through the filing of a Notice of Intent.
- (d) The Department of Environmental Protection File Number for the Notice of Intent submitted under 310 CMR 10.00 may serve as the File Number for the Notice of Intent submitted under the Bylaw. The designation of a file number shall not imply that the plans and supporting documents have been judged adequate for the issuance of an OOC, but only that copies of the minimum submittal requirements contained in the General Instructions have been filed.
- (e) In the event that only a portion of a proposed project or activity lies within a Resource Area under the Bylaw, and the remainder of the project or activity lies outside those areas, only that portion within those areas must be described in the detail called for by the General Instructions and by the Town of Hingham; provided, however, that in such circumstances the Notice of Intent shall also contain a description and calculation of peak flow and estimated water quality characteristics of discharge from a point source (both closed and open channel) when the point of discharge falls within a Resource Area under the Bylaw. Notwithstanding the foregoing, when the Commission has determined that an

activity outside the Resource Areas may alter a Resource Area, it may require such plans, supporting calculations and other documentation as are necessary to describe the entire activity.

- (f) The requirements under the Bylaw to obtain or apply for all obtainable permits, variances and approvals required by other local Bylaws and Laws with respect to the proposed activity shall mean only those which are feasible to obtain at the time the Notice of Intent is filed. Permits, variance, and approvals required by local Bylaw may include, among others, building permits under the State Building Code, G.L. C. 23B S16, or subdivision control approvals under the State Subdivision Control Law, G.L. c.41, S81K-881GG, which are issued by local authorities. When an applicant for a comprehensive permit (under G.G. c. 40B, S20-23) from the Board of Appeals has received a Determination from the Board granting or denying the permit and, in the case of a denial, has appealed to the Housing Appeals Committee (established under G.L. c.23B, S5A), said applicant shall be deemed to have applied for all permits obtainable at the time of filing.
- (g) If the Commission rejects a Notice of Intent because of a failure to obtain or apply for all permits, variances and approvals required by the Town of Hingham Bylaw, it shall specify in writing the permit, variance or approval that has not been applied for. A ruling by the municipal agency which has jurisdiction for the issuance of the permit, variance or approval, or by the Town Counsel or Board of Selectmen, concerning the applicability or obtainability of such permit, variance or approval shall be accepted by the Commission. In the absence of such a ruling, other evidence may be accepted.
- (h) A Notice of Intent shall expire when the applicant has failed to diligently pursue the issuance of a Final OOC in proceedings under the Hingham Wetland Regulations. A Notice of Intent shall be presumed to have expired 6 (six) months after the date of filing unless the applicant submits information showing that (a) good cause exists for the delay of proceedings under the Bylaw; and (b) the applicant has continued to pursue the project diligently in other forums in the intervening period; provided, however, that unfavorable financial circumstances shall not constitute good cause for delay. No NOI shall be deemed expired under the Bylaw when an appeal under the Bylaw is pending and when the applicant has provided all information necessary to continue with the prosecution of the case.
- (i) The Commission may require that supporting plans and calculations be prepared and stamped by a registered professional engineer (P.E.) when, in its judgment, the proposed work warrants this professional certification. The Commission may also require preparation and submission of supporting materials by other professionals including, but not limited to, registered landscape architect, registered land surveyor, environmental scientist, geologist or hydrologist when in its judgment the complexity of the proposed work and/or the wetland values of the Resource Areas warrants the relevant specialized expertise. Submitted materials may be used by the Commission to evaluate the effects of the proposed project on wetland values. Submission of requested materials does not imply approval of the project.
- (j) The applicant may request to continue a hearing to a date certain announced at the hearing. Reasons for continuing a hearing may include, but are not limited to, failure of the applicant or others to provide information by the submittal deadline, lack of timely receipt of necessary information from the applicant, time needed by the applicant to provide additional or missing information and for the Commission to review such information, inability to view the proposed project, need for additional

information to evaluate the potential impacts upon the wetland values, and incorrect or incomplete abutter notification as required under these regulations. Should the applicant refuse to continue the hearing or to provide the requested information, the Commission shall close the public hearing and issue an OOC within 21 calendar days unless the applicant has voluntarily waived the 21 day requirement.

- (k) The Commission shall have the authority to deny any NOI application for which 1) the application is incomplete and the applicant fails to provide the Commission with additional information that the Commission deems necessary in order to evaluate the potential impacts of the proposed project on the wetland values; and/or 2) the proposed work or activity does not meet the performance standards specified herein and cannot be conditioned to meet the performance standards specified herein.
- (l) The Commission may request a signed voluntary waiver of the 21 day requirement for issuing its decision.
- (m) The Conservation Commission shall have the ability for exceptional cause shown to waive any provisions of these regulations. The burden of proof for such demonstration shall be on the applicant in accordance with the provisions under HWR Section 7.15.

7.5. Abutter Notification

Any applicant filing a Notice of Intent (NOI), Abbreviated Notice of Resource Area Delineation (ANRAD), or Amended Order of Conditions (Amended OOC) for work within jurisdiction of the Bylaw or confirmation of Resource Area boundaries, must notify abutters within 100 feet; however, an application for a project occurring within a coastal Resource Area as defined under HWR Section 17.0 or within the Buffer Zone to any coastal area must notify abutters within 300 feet of the property line of the lot, or lots upon which work is proposed, including any in another municipality or across a body of water, by certified mailing, certificate of mailing, or hand delivery on the form and according to instructions provided by the Town of Hingham Conservation Commission. An applicant who proposes work solely within Land under Water Bodies or Waterways, or solely within a Lot with an area greater than 50 acres, is required to provide notification only to Abutters whose Lot is within one hundred feet from the Project Site. An applicant proposing a Linear-shaped Project greater than 1,000 feet in length is required to provide notification only to Abutters whose Lot is within 100 feet from the Project Site. Abutter notification is not required for projects proposed by the Massachusetts Department of Transportation Highway Division pursuant to St. 1993, c. 472 as approved on January 13, 1994. Mailing at least seven days prior to the public hearing shall constitute timely notice. Notification shall be at the applicant's expense. Proof of abutter notification (e.g., certified mail receipts, certificate of mailing, or hand delivery with written acknowledgement) must be provided to the Commission either prior to or at the public hearing.

7.6. Public Hearings/Public Meetings

- (a) A public hearing or public meeting shall be held by the Commission within 21 days of receipt of the minimum submittal requirements set forth in the General Instructions for Completing Notice of Intent (Form 3), Abbreviated Notice of Intent (Form 4), Request for Determination of Applicability (Form 1) or Abbreviated Notice of Resource Area Delineation (Form 4A) unless the 21 day requirement is

voluntarily waived by the applicant. The public hearing/public meeting shall be held under both M.G.L. c.131, § 40 and the Hingham Wetlands Bylaw, unless the project is located in only one of the two jurisdictions. The Commission shall publish notice of the public hearing or public meeting to a newspaper of local circulation not less than five (5) business days prior to the hearing. The applicant is responsible for the cost of the legal notice.

- (b) If the Commission requests additional information from the applicant, it must be submitted to the Conservation Office at least 7 days prior to the next hearing. If the additional information is subject to peer review, it must be submitted at least 2 weeks prior to the next hearing.

7.7. Orders of Conditions Regulating Work

- (a) Within 21 days of the close of the public hearing, or longer if the applicant has voluntarily waived the 21 day requirement, the Commission shall either:
 - (1) Make a determination that the area on which the work is proposed to be done, or which the proposed work will remove, fill dredge or alter, is not significant to any of the wetland values identified in the Bylaw and shall so notify the applicant; or
 - (2) Make a determination that the area on which the work is proposed to be done, or which the proposed work will remove, fill, dredge or alter, is significant to one or more of the wetland values identified in the Bylaw and shall issue an OOC for the protection of said values; or
 - (3) Issue a denial.
- (b) The standards and presumptions to be used by the Commission in determining whether an area is significant to the wetland values in the Bylaw are found in HWR Section 17.0 through 19.0.
- (c) The OOC shall impose such conditions as are necessary to meet the performance standards set forth in HWR Section 17.0 through 19.0 for the protection of those areas found to be significant to one or more of the wetland values identified in the Bylaw. The OOC shall prohibit any work or any portion thereof that cannot be conditioned to meet said standards.
- (d) The Commission may request a signed voluntary waiver of the 21 day requirement for issuing its decision.
- (e) If a peer review has been required by the Commission, all outstanding bills for the peer review must be paid in full before a permit is issued.

7.8. Amended Orders

- (a) Following the issuance of a Final OOC, if unforeseen circumstances or minor deviations from the project approved in that OOC, an applicant may request an Amended OOC under the following circumstances and provisions:
- (b) In determining whether an Amended OOC should be issued or a new Notice of Intent required, the Commission will consider whether:
 - (1) The purpose of the project has changed;

- (2) The scope of the project has increased;
 - (3) The project as revised meets relevant performance standards; and
 - (4) The potential for adverse impacts to the protected interests will be increased.
- (c) Generally, if the scope or purpose has changed substantially, or the impacts upon interests protected by the Act are increased, a new Notice of Intent should be filed.
- (1) The applicant shall first consult with the Conservation Office to confirm if the proposed changes may be appropriately approved under an Amended OOC.
 - (2) When appropriate, the applicant shall make said request in writing explaining the deviations from the approved plans and include revised plans and any other supporting data to describe the changes. A copy of this request shall also be sent to the regional MassDEP office.
 - (3) The applicant shall notify all abutters to the project site in accordance with HWR Section 7.5.
 - (4) The Commission will post a legal ad, at the applicant's expense, and will schedule a public hearing, following the procedures described under HWR Section 7.6.
 - (5) If, after considering the information presented by the applicant and any comments received at the public hearing, the commission decides to issue an Amended OOC, the Commission will issue an approval for an Amended OOC using WPA Form 5, citing the original MassDEP number, the date of filing of the original NOI, the date the request for an amendment was filed; the original public hearing date and the date of the public hearing on the request for an Amended OOC; the date the original OOC was issued, the date it was recorded at the Registry of Deeds, and the book and page number of the recording.
- (d) The Amended OOC shall also include a listing of all plans to which the Amended OOC applies; a statement identifying which of the cited plans differ from the original plans and giving the titles, dates, and other identifying information about the replaced plans. The Commission shall include a listing of any new findings of fact, and statement identifying which of the conditions in the original OOC have been amended.
- (e) The Commission shall forward a copy of the Amended OOC to the MassDEP Regional Office.
- (f) The Amended OOC must be recorded with the Registry of Deeds
- (g) Under no circumstances will the issuance of an Amended OOC extend the effective date of the original Final OOC.

7.9. Denials

- (a) **Procedural Denials.** If the Commission finds that the information submitted by the applicant is not sufficient to describe the site, the work, or the effect of the work on the wetland values of the Resource Area, it may issue a denial prohibiting the work. The denial shall specify the information which is lacking and why it is necessary. In writing the procedural denial, the Commission shall:

- (1) State that the denial is specifically based on lack of information describing the site, the work and/or the effect of the work on the wetland values; and
 - (2) List specific information needed in each of the three possible problem areas mentioned above, citing appropriate sections of the Regulations.
 - (3) If 3 (three) continuances are granted to the applicant in which no new information is presented at the meeting or hearing, the Commission may close the meeting or hearing and issue a decision.
- (b) Substantive Denials. The Commission may deny permission for any activity within areas under its jurisdiction if, in its judgment, such denial is necessary to protect the wetland values. Due consideration shall be given to all possible effects of the proposal on all wetland values. Substantive denials are based on a reasoned analysis of the proposed activity and the likely effects of this activity on the wetland values. In most cases, neither the assumption of protection nor the assumption of damage will be able to be proven with certainty. The Commission will base its judgment on the best information available to it at the time and in all cases will act to protect the wetland values. The written decision will include the reasons for the denial, citing wetland values protected, and relevant regulations. The written decision will be signed by a majority of the Commission.
- (c) Applicants and professionals assisting with an application are responsible for the accuracy of information submitted to the Conservation Commission and its Office. Any false information submitted either in writing or orally is sufficient grounds for denial of the application.
- (d) Revocation for good cause. The Commission may revoke or modify any permit, order, determination or other decision issued under the Bylaw after notice to the holder of the permit, the public, and abutters, pursuant to HWR Section 7.6 (Public Hearings) and HWR Section 16.2 (Coordination of Permitting), and holding a public hearing.

7.10. Recording in Registry of Deeds or Land Court

In no case shall any work or construction commence unless and until the OOC, Amended OOC, or ORAD has been recorded at the Registry of Deeds or Land Court and the proof of recording is delivered to the Commission.

7.11. Validity

Except as provided in M.G.L. c. 131, § 40 for maintenance dredging, a Determination of Applicability, ORAD, and OOC shall be effective for 3 (three) years from the date of issuance; however, the Commission may issue an OOC for up to five (5) years where special circumstances warrant and where those special circumstances are set forth in the OOC.

7.12. Extensions of Orders of Conditions and Orders of Resource Area Delineations

- (a) The Commission may extend an OOC for one or more periods of up to three years each, which shall be made on WPA Form 7. The request for an extension shall be made to the Commission at least 30

days prior to expiration of the OOC. The Commission may extend an ORAD for a period of up to three years upon clear demonstration that site conditions have not changed.

- (b) The Commission may deny the request for an extension and require the filing of a new Notice of Intent for the remaining work or a new Abbreviated Notice of Resource Area Delineation in the following circumstances:
 - (1) Where no work has begun on the project, except where such failure is due to an unavoidable delay, such as appeals, in the obtaining of other necessary permits; or
 - (2) Where new information, not available at the time the OOC was issued, has become available and indicates that the OOC is not adequate to protect the wetland values identified in the Bylaw; or
 - (3) Where incomplete work is causing damage to the Resource Area and wetland values in the Bylaw; or
 - (4) Where work has been done in violation of the OOC or Bylaw and Regulations; or
 - (5) Where a Resource Area delineation or certification in an ORAD is no longer accurate.
- (c) The Extension Permit shall be recorded in the Land Court or the Registry of Deeds, whichever is appropriate and evidence of the recording delivered to the Commission.

7.13. Certificates of Compliance

- (a) Upon completion of the work described in the Final OOC, the applicant shall request in writing the issuance of a Certificate of Compliance stating that the work has been satisfactorily completed. Upon written request by the applicant, a Certificate of Compliance shall be issued by the Commission within 21 days of receipt thereof, and shall certify on WPA Form 8 that the activity or portions thereof as described in the Notice of Intent and plans has been completed in compliance with the OOC.
- (b) Prior to issuance of a Certificate of Compliance a site inspection shall be made by the Commission or the Conservation Office.
- (c) If the Commission determines, after review and inspection, that the work has not been done in compliance with the OOC, it may refuse to issue a Certificate of Compliance. Such refusal shall be issued within 21 days of receipt of a request for a Certificate of Compliance shall be in writing and shall specify the reasons for denial.
- (d) If a project has been completed in accordance with plans stamped by a registered professional engineer, architect, landscape architect or land surveyor, a written statement by such a professional person certifying substantial compliance with the plans and setting forth what deviation, if any, exists from the plans approved in the OOC shall accompany the request for a Certificate of Compliance.
- (e) If the final OOC contains conditions which continue past the completion of the work, such as maintenance or monitoring, the Certificate of Compliance shall specify which, if any, of such

conditions shall continue. The Certificate shall also specify to what portions of the work to which it applies.

- (f) The Certificate of Compliance shall be recorded in the Land Court or Registry of Deeds, whichever is appropriate and evidence of the recording delivered to the Conservation Commission.

7.14. Administrative Review and Decisions

- (a) Certain minor projects within the Buffer Zone or within Riverfront Area that, due to size, scale or location, are unlikely to have significant adverse or cumulative effects on Resource Area values. Such minor projects may be reviewed and approved by the Conservation Officer through an administrative process without a formal hearing before the Conservation Commission only if all of the following conditions are met:
 - (1) All proposed work including staging and material stockpiling will take place at least 50 feet from any Resource Area and at least 100 feet from any vernal pool, unless otherwise specified. In the case of Riverfront Area, all work will take place at least 100 feet from the mean annual high water line.
 - (2) Erosion and sedimentation controls shall be implemented during construction if ground disturbance is proposed;
 - (3) Post construction measures are implemented to stabilize any disturbed areas after following completion of work;
 - (4) Work is performed in a manner so as to reduce the potential for any adverse impacts to the Resource Area;
- (b) The following minor projects may qualify for an Administrative Review provided they comply with HWR Section 7.14 (a)(1-4), unless otherwise specified:
 - (1) Updated pervious pedestrian walkways no more than 30 inches wide for private use;
 - (2) Fencing, provided it will not constitute a barrier to wildlife movement; installation of stonewalls; stacks of cordwood;
 - (3) Vista pruning, provided the activity is located more than 50 feet from the mean annual high water line within a Riverfront Area or from Bordering Vegetated Wetland, whichever is farther;
 - (4) The conversion of lawn to uses accessory to residential structures not exceeding 300 square feet such as decks, sheds, patios, replacement of a basement bulkhead and the installation of a ramp for compliance with accessibility requirements. The conversion of such uses accessory to existing single family houses to lawn is also allowed;
 - (5) The repair or replacement of an existing and lawfully located driveway servicing not more than two dwelling units provided that all work remains within the existing limits of the driveway and all surfaces are permanently stabilized within 10 days of final grade;
 - (6) Removal of no more than three (3) trees (healthy or diseased) each measuring no more than 10" in diameter at breast height (DBH) (that have not been deemed an imminent safety hazard)

provided tree replacements are proposed at a 1:1 ratio for trees measuring 1.5"- 4" DBH and 2:1 ratio for trees measuring 6"-10" DBH;

- (7) The removal of structures or conversion of impervious to vegetated surfaces within the 100-foot Buffer Zone or within the Riverfront Area;
- (8) Activities that are temporary in nature, have negligible impacts, and are necessary for planning and design purposes (e.g., installation of monitoring wells, exploratory borings, sediment sampling and surveying and percolation tests for septic systems) within the 100 foot Buffer Zone or Riverfront Area provided that Resource Areas are not crossed for site access and there will be minimal disturbance to existing vegetation;
- (c) All requests for administrative reviews shall be submitted on the Application for Administrative Review provided by the Conservation office and shall be accompanied by an application fee. The Conservation Officer shall not act upon the request until all required information and filing fee has been submitted
- (d) The Conservation Officer will review the application and conduct a site visit to determine if the proposed work meets the requirements of this section.
- (e) Within 10 business days of receipt of a complete application, the Conservation Officer will issue an Administrative Decision approving or denying the request for an Administrative Review.
- (f) The Conservation Officer may approve the work as proposed or require additional conditions, including but not limited to, erosion and sedimentation controls, planting of native vegetation, and replacement trees, to protect Resource Area values and mitigate potential adverse effects. The Conservation Officer shall provide written findings demonstrating the necessity of any additional conditions.
- (g) The Conservation Officer may, in his/her discretion, find the work does not qualify for an Administrative Review due to non-compliance with the requirements of this section or due to the likelihood that the work will result in adverse effects to a Resource Area. The applicant may file a Request for Determination of Applicability or Notice of Intent in compliance with these regulations to proceed with the project.
- (h) Administrative Decisions are valid for one year from the date of issuance.
- (i) Work performed outside of the scope of an Administrative Decision shall be subject to enforcement action(s).
- (j) Appeals of Administrative Decisions shall be made to the Conservation Commission by filing a Request for Determination of Applicability under the Wetlands Protection Bylaw.

7.15. Waivers

The Conservation Commission shall have the ability for exceptional cause shown to waive any provisions of these regulations. The burden of proof for such demonstration shall be on the applicant.

- (a) All requests for waivers shall be in writing and shall be submitted as a separate document along with a permit application.
- (b) The Commission may, in its discretion, for exceptional cause shown, grant waivers from the operation of one or more of these regulations pursuant to this subsection. Such waivers shall be granted only in accordance with the provisions below.
- (c) A waiver may be granted only for the following reasons and upon the following conditions:
 - (1) The Commission may grant a waiver from these regulations when the Commission finds that, given existing conditions, the proposed project will not adversely impact the interests identified in the Bylaw and there are no reasonable conditions or alternatives that would allow that project to proceed in compliance with the regulations. The burden of proof to show no adverse impact to the interests identified in the Bylaw, shall be the responsibility of the owner/applicant. The burden of proof to show no reasonable alternative shall be the responsibility of the owner/applicant and shall consist of a written alternatives analysis detailing why the proposed project cannot otherwise proceed in compliance with the performance standards in these regulations, with an explanation of why each is not feasible. It shall be the responsibility of the applicant to provide the Commission with any information which the Commission may request in order to enable the Commission to ascertain such adverse effects. The failure of the applicant to furnish any information which has been so requested may result in the denial of a request for a waiver pursuant to this subsection.
 - (2) The Commission may grant a waiver from these regulations when the Commission finds that a project will provide a long-term net benefit/improvement to the Resource Area, provided any adverse effects are minimized by carefully considered conditions. However, no such project may be permitted which could have an adverse effect on rare wildlife species.
 - (3) The Commission may grant a waiver from these regulations when the project as proposed provides a significant public benefit and adverse impacts are minimized by project design or conditions imposed by the Commission.
- (d) The Commission may impose additional conditions in granting a permit pursuant to this section, including imposing limits on project size or effect or requiring other compensatory measures, such as wetland replication.
- (e) When a waiver is requested, the Commission shall, after consideration, vote to accept or deny the waiver request separately from the vote on any proposed project seeking said waiver. A waiver may be granted only if approved by a majority of the voting Commissioners.

8.0 EMERGENCY CERTIFICATION

- (a) Any person requesting permission to do an emergency project shall specify why the project is necessary for the protection of the health or safety of the citizens of the Commonwealth and what agency of the Commonwealth or subdivision thereof is to perform the project or has ordered it to be performed. Emergency projects shall mean any projects certified to be an emergency by the Commission or its agent. A site inspection shall be made prior to the certification.

- (b) The emergency certification issued by the Commission shall include a description of the work which is to be allowed and shall not include work beyond that which is necessary to abate the emergency.
- (c) The Commission or its agent may impose conditions to protect wetland values of this Bylaw.
- (d) An emergency certification shall be issued only for the protection of public health and safety.
- (e) The time limitation for performance of emergency work shall not exceed 30 days unless written approval of the Commission or its agent is obtained.
- (f) The Commission may require the filing of a Notice of Intent in accordance with these regulations for the work approved by the emergency certification or for work conducted beyond that is necessary to abate the emergency.
- (g) Failure to comply with the requirements of this section or the conditions imposed by the Commission shall be deemed cause to revoke or modify the certification. The Commission may order restoration and/or mitigation measures through enforcement action as deemed necessary to abate resource area alterations.
- (h) The Commission may adopt emergency regulations in conformance with the Bylaw for limited durations after severe storms, notice of which shall be provided as soon as possible after their adoption.

9.0 ENTRY TO PROPERTY FOR REVIEW PURPOSES

The Commission, its agents, employees, consultants, and officers, may enter upon privately owned land for the purpose of carrying out its duties under the Bylaw and Regulations and may make or cause to be made such examinations, surveys or sampling as the Commission deems necessary.

10.0 ENFORCEMENT

- (a) Authority. The Conservation Commission shall have the authority to enforce these implementing regulations and permits issued there under by undertaking and issuing enforcement orders, administrative orders, and civil and criminal court actions. Upon request of the Commission to the Board of Selectmen, the Town Counsel may take legal action for enforcement under civil law. Upon request of the Commission, the Chief of Police may take legal action for enforcement under criminal law.

Violations include, but are not limited to: failure to comply with an OOC, such as a failure to observe a particular condition or time period specified in the OOC; or failure to complete work described in an OOC, when such failure causes damage to the interest identified in the Bylaw; or failure to obtain a valid OOC or an Extension of an existing OOC prior to conducting an activity subject to regulations under the Bylaw.

- (b) Fines. Any person who violates any provision of the Bylaw and these implementing regulations or permits issued there under shall be punished by a fine set under the provisions of the Bylaw. Each day or portion thereof during which a violation continues shall constitute a separate offense, and each provision of the Bylaw, regulations or permit violated shall constitute a separate offense.

- (c) Non-criminal Disposition. In addition to the procedure of enforcement as described above, the provision of the Bylaw and these implementing regulations or permits issued hereunder may also be enforced by the Commission or its agent, by non-criminal complaint pursuant to the provisions of M.G.L. Ch. 40, § 21D. Each provision of the chapter, regulations or permit violation that is violated also shall constitute a separate offense.

11.0 SECURITY

As part of a permit issued under the Bylaw, in addition to any security required by any other municipal or state board, agency or official, the Commission may require that the performance and observance of the conditions imposed thereunder (including requiring mitigation work) be secured wholly or in part by one or more of the methods described below.

- (a) By a proper bond or deposit of money or negotiable securities or other undertaking of financial responsibility sufficient in the opinion of the Commission, to be released in whole or in part upon issuance of a Certificate of Compliance for work performed pursuant to the permit. Such bond or deposit shall be released only upon issuance of a Certificate of Compliance.
- (b) By accepting a conservation restriction, easement, or other covenant enforceable in a court of law, executed and duly recorded by the owner of record, running with the land to the benefit of this municipality whereby the permit conditions shall be performed and observed before any lot may be conveyed other than by mortgage deed. This method shall be used only with the consent of the applicant.

12.0 BURDEN OF PROOF AND BURDEN OF GOING FORWARD

- (a) Burden of Proof. Any person who files a Notice of Intent to perform work within an Area Subject to Protection under the Bylaw or within the Buffer Zone has the burden of demonstrating by a preponderance of credible evidence to the Conservation Commission:
- (1) That the area is not significant to the protection of any of the wetland values identified in the Bylaw, or
 - (2) That the proposed work will contribute to the protection of the wetland values identified in the Bylaw by complying with the general performance standards established by these regulations for that area. Any person who requests the Conservation Commission regulate work taking place outside an Area Subject to Protection under the Bylaw and outside the Buffer Zone has the burden of demonstrating to the satisfaction of the Conservation Commission that the work has in fact altered an area subject to protection under the Bylaw.

The applicant shall have the burden of proof by a preponderance of credible evidence that the work proposed will not have a significant or cumulative detrimental effect upon Resource Areas or their wetland values protected herein. No project determined to have a significant or cumulative detrimental effect upon Resource Areas or wetland values protected herein shall be allowed. Failure to provide adequate evidence to the Commission supporting this burden shall be sufficient cause for the Commission to deny the proposed project. In all instances herein, the Commission, after due deliberation, shall have the discretion to determine the weight of the information presented or

omitted. The Commission maintains the right to condition any project as it deems necessary to protect one or more of the wetland values set forth herein.

- (b) Burden of Going Forward. The burden of going forward means having to produce at least some credible evidence from a competent source in support of the position taken. This burden shall be upon the person contesting the Conservation Commission's position.

13.0 FEES

13.1. Application Fees

At the time of a filing a Notice of Intent (NOI), Abbreviated Notice of Resource Area Delineation (ANRAD), Request for Determination of Applicability (RDA), Request for Permit Extension, Request for Administrative Review, or application for Certificate of Compliance, the applicant shall pay a filing fee specified in Appendix A of these Regulations. The fee is in addition to that required by the Wetlands Protection Act (M.G.L. Ch. 131 § 40) and Regulations (310 CMR 10.00). The Commission is authorized to require an applicant (for an ANRAD, RDA or NOI or other filing) to pay a fee to cover the reasonable costs and expenses borne by the Commission in processing and evaluating the permit application. The fee schedule will be set by the Commission according to the provisions of the Hingham Wetlands Bylaw, Article 22. The Commission may, at its discretion, waive the application fee, costs and expenses for a permit application. Application fees are not refundable.

Refer to Appendix A for the Bylaw Application Filing Fee Schedule.

13.2. Consultant Fees and Rules for Hiring Outside Consultants

- (a) As provided by M.G.L. Ch. 44, § 53G, the Conservation Commission may impose reasonable fees for the employment of outside consultants, engaged by the Commission, for specific expert services deemed necessary by the Commission to come to a final decision on an application submitted to the Commission pursuant to the requirements of the Massachusetts Wetlands Protection Act (M.G.L. Ch. 131, § 40), the Hingham non-zoning wetlands bylaw (Town of Hingham Wetlands Protection Bylaw Article 22), Conservation Commission Act (M.G.L. Ch. 40, §8C), or any other state or municipal statute, bylaw or regulation, as they may be amended or enacted from time to time.
- (b) Funds received by the Conservation Commission pursuant to these rules shall be deposited with the Town Treasurer who shall establish a special segregated account (Account) for this purpose. Expenditures from this Account may be made at the direction of the Conservation Commission without further appropriations as provided in M.G.L. Ch. 44, § 53G. Expenditures from this Account shall be made only in connection with the review of a specific project or projects for which a consultant fee has been collected from the applicant.
- (c) Specific consultant services may include but are not limited to Resource Area survey and delineation, analysis of Resource Area values, hydrogeologic and drainage analysis, impacts on municipal conservation lands, inspections during construction, any reports necessary for a Certificate of Compliance, and environmental or land use law. The consultant shall be chosen by, and report only to, the Conservation Commission and/or its agent.

- (d) The Conservation Commission shall give written notice to the applicant of the selection of an outside consultant, which notice shall state the identity of the consultant, the amount of the fee to be charged to the applicant, and a request for payment of said fee in its entirety. Such notice shall be deemed to have been given on the date it is mailed or delivered. No such costs or expenses shall be incurred by the applicant if the application or request is withdrawn in writing within five days of the date such notice is given.
- (e) The fee must be received in its entirety prior to the initiation of consulting services. Failure by the applicant to pay the consultant fee specified by the Commission within 10 (ten) business days of the request for payment shall be cause for the Commission to deny the application based on lack of sufficient information to evaluate whether the project meets applicable performance standards in 310 CMR 10.00 and the Hingham Wetland Regulations. An appeal stops the clock on the above deadline; the countdown resumes on the first business day after the appeal is either denied or upheld. A denial for lack of information may be based solely on the lack of the third party consultant review identified as necessary by the Commission. The Commission shall specify in its denial the nature of the information lacking which its chosen consultant would provide, e.g. the questions it needs answered.
- (f) The applicant may appeal the selection of the outside consultant to the Hingham Select Board, who may disqualify the outside consultant selected only on the grounds that the consultant has a conflict of interest or does not possess the minimum required qualifications. The minimum qualifications shall consist of either an educational degree or three or more years of practice in the field at issue or related field. Such an appeal must be in writing and received by the Select Board and a copy received by the Conservation Commission, so as to be received within ten (10) days of the date consultant fees were requested by the Conservation Commission. The required time limits for action upon the application shall be extended by the duration of the administrative appeal.
- (g) When the Commission's review of a project is completed and an OOC has been issued, any balance in the special account attributable to that project shall be returned within 30 days. The excess amount, including interest, shall be repaid to the applicant or the applicant's successor in interest. For the purpose of this regulation, any person or entity claiming to be an applicant's successor in interest shall provide the Commission with appropriate documentation. A final report of said account shall be made available to the applicant or applicant's successor in interest.

14.0 APPEALS

- (a) Any person with standing to challenge a decision may appeal a decision of the Conservation Commission pursuant to M.G.L. c.249, § 4 to the Superior Court of Plymouth County within 60 days following the date of the issuance of the decision.
- (b) Appeals of administrative decisions shall be made to the Conservation Commission by filing an application for a Request for Determination of Applicability.

15.0 SEVERABILITY

Should any term, condition, definition, language, section or provision of these Regulations be found invalid by competent legal authority, the validity of any other term, condition, definition, language,

section or provision thereof shall not be affected, nor shall it invalidate any permit, approval, enforcement order or determination which previously has been issued.

16.0 RELATION TO OTHER FEDERAL, STATE AND LOCAL STATUTES

- (a) Relation to the Wetlands Protection Act and Other Federal, State and Local Statutes. These implementing regulations under the Town of Hingham Wetlands Protection Bylaw (Article 22) are adopted under the Home Rule Amendments of the Massachusetts Constitution and the Home Rule statutes, independent of the Wetlands Protection Act, M.G.L. Ch. 131 § 40, and implementing regulations, and other federal, state and local environmental statutes. Activities that may not require review or permitting under the Massachusetts Wetlands Protection Act, the Rivers Protection Act, the federal or state Clean Water Act or other federal, state or local statutes are not assumed to be exempt from these implementing regulations.
- (b) Coordination of Permitting. In order to ensure that various permit granting authorities review the impacts upon resources protected by these implementing regulations in a coordinated manner, and where the provisions of these implementing regulations are applicable, applicants for permits under federal, state or local statute or regulation shall comply with the requirements for filing under these regulations within 45 days of said application made under federal, state or local statute or regulation.
- (c) All development in the floodplain, including structural and non-structural activities, whether permitted by right or by special permit must be in compliance with Chapter 131, Section 40 of the Massachusetts General Laws and with the following:
 - (1) Sections of the Massachusetts State Building Code (780 CMR) which address floodplain and coastal high hazard areas;
 - (2) Wetlands Protection Regulations, Department of Environmental Protection (DEP) (currently 310 CMR 10.00);
 - (3) Inland Wetlands Restriction, DEP (currently 310 CMR 13.00);
 - (4) Coastal Wetlands Restriction, DEP (currently 310 CMR 12.00); and
 - (5) Minimum Requirements for the Subsurface Disposal of Sanitary Sewage, DEP (currently 310 CMR 15.000, Title 5).

PART II. PERFORMANCE STANDARDS FOR RESOURCE AREAS

Resource Area definitions and performance standards for work proposed in Resource Areas protected under the Town of Hingham Wetland Bylaw (Bylaw) are described in this section of the Hingham Wetland Regulations (HWR).

17.0 COASTAL RESOURCE AREAS

17.1. Land Under the Ocean

- (a) Preamble. Land under the ocean provides feeding areas, spawning and nursery grounds and shelter for many coastal organisms related to marine fisheries and wildlife. Eelgrass (*Zostura maritima*) is important for the prevention of pollution, protection of water quality, as well as fisheries and fish/shellfish habitat. Nearshore areas, and in some cases offshore areas of land under the ocean help reduce storm damage, erosion, and flooding by diminishing and buffering the high-energy effects of storms. Submerged sand bars dissipate wave energy. Such areas provide a source of sediment for seasonal rebuilding of coastal beaches and dunes. The bottom topography and sediment type of nearshore areas of land under the ocean are critical to erosion control, prevention of storm damage, and flood control. Water circulation and flushing rates, distribution of sediment grain size, water quality (including but not limited to turbidity, temperature, nutrients, pollutants, salinity, and dissolved oxygen), and the habitat of wildlife, finfish, and shellfish, including rare species when they occur, are all factors critical to the protection of wildlife and marine finfish and shellfish fisheries, and marine vegetation.

Land under the ocean in an unobstructed state is important for the protection of recreational swimming, fishing, shellfishing, boating and sailing, commercial fishing and shellfishing, and aesthetics. Land under the ocean is important for aquaculture. Land within 100 feet of land under the ocean is significant to the protection and maintenance of land under the ocean and therefore to the wetland values which this land serves to protect.

- (b) Wetland Values and Presumption of Significance. Whenever a proposed project involves removing, filling, dredging, altering or building upon land under the ocean, the Commission shall presume that such land is significant to the protection of the following wetland values: flood control, erosion and sedimentation control; storm damage prevention, including coastal storm flowage; prevention and abatement of water pollution; protection of fisheries; protection of shellfish; protection of wildlife and wildlife habitat; protection of rare species habitat, including rare plant and animal species; protection of recreation and open space; protection of aquaculture; and protection of aesthetics. These presumptions may be overcome only upon a clear showing that the land under the ocean does not play a role in protecting one or more of the wetland values given above.
- (c) Definitions – same as 310 CMR 10.25(2).
- (d) Performance Standards. When Land Under the Ocean, or land within a minimum distance of 100 feet of Land Under the Ocean is determined to be significant to a protected value, the following regulations shall apply:

- (1) Proposed work shall not have any significant adverse effect or cumulative adverse effect on the wetland values of Land Under the Ocean.
- (2) Proposed work shall not destroy any portion of eelgrass beds and shall not have any adverse effect or cumulative adverse effect on eelgrass beds.
- (3) Notwithstanding the above provisions, no project may be permitted which will have any adverse effect on shell fish or migrating, spawning fish, or specified habitat of rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.37.
- (4) Performance standards for proposed work or activities within the Buffer Zone to Land Under the Ocean are specified in HWR Section 19.0.
- (5) The Commission may impose such additional requirements as are necessary to protect the wetland values protected under the Bylaw.

17.2. Coastal Beaches, Rocky Intertidal Shores, and Tidal Flats

- (a) Preamble. Coastal beaches dissipate wave energy by their gentle slope, their permeability, and their granular nature which permit changes in beach form in response to changes in wave conditions. Coastal beaches serve as a sediment source for dunes and subtidal areas. Steep storm waves cause beach sediment to move offshore, resulting in a gentler beach slope and greater energy dissipation. Less steep waves cause an onshore return of beach sediment, where it will be available to provide protection against future storm waves. A coastal beach at any point serves as a sediment source for coastal areas downdrift from that point. The oblique approach of waves moves beach sediment along shore in the general direction of wave action. Thus, a coastal beach is a body of sediment which is moving along the shore. As sea levels continue to rise, it is important to provide source material to allow these inter-tidal and sub-tidal areas to vertically accrete and continue to reduce storm damage, increase flood control, protect land containing shellfish, and protect wildlife habitat.

Coastal beaches aid in storm damage prevention, erosion and flood control, and coastal resilience by dissipating wave energy, reducing the height of storm waves, and providing sediment to supply other coastal features, including coastal dunes, land under the ocean, and other coastal beaches. These functions buffer inland areas from the impacts of climate change, including but not limited to sea level rise and increased storm intensity and wave energy. Interruptions of these natural processes by human-made structures reduce the ability of the coastal beach to perform these functions.

Coastal beaches and rocky intertidal shores are important for wildlife, shellfish and fisheries habitat and provide habitat for rare species of plants and animals where these occur. Coastal beaches are extremely important in recycling of nutrients derived from storm drift and tidal action. Vegetative debris along the drift line is vital for resident and migratory shorebirds, which feed largely on invertebrates which eat the vegetation. Below the drift line in the lower intertidal zone are infauna (invertebrates such as mollusks and crustacea) which are also eaten by shore birds. A number of birds also nest in the coastal berm between the toe of a coastal dune and the high tide line. In addition, isolated coastal beaches are important as haul out and resting areas for seals.

Rockweeds inhabit intertidal zones with rocky substrates. Rockweeds are primary producers converting inorganic nutrients such as phosphate and nitrate into organic matter for marine grazers. They play an essential role in removing inorganic nutrients and trace metals and converting them into useable products for both commercial and ecological uses. By removing nutrients and metals such as arsenic, copper, and zinc from the water column they help maintain water quality in bays, estuaries, and rocky shores. Like eel grass and kelp, portions of the algae break apart and are transported by tides and currents to nearshore areas forming deposits of organic detritus. This detritus forms one of the bases of estuarine and marine food webs. The detritus formed from the dead algal matter is consumed by microscopic organisms, small marine invertebrates, and insects which in turn are a food source for fish, birds, and mammals. Algal fragments also are carried offshore and enter the oceanic food chain. Rockweed beds add structural complexity and surface area to rocky habitats. During low tides when intertidal areas are exposed to air and direct sunlight, rockweeds provide protection to intertidal organisms from temperature fluctuations and desiccation. They provide shelter from predation and wave action, attachment sites for epiphytes and larvae, food sources for invertebrates and fish, and feeding and nursery grounds for both vertebrate and invertebrate species. Rockweeds are commercially harvested and sold as health food, nutritional supplements, fertilizer, and stabilizers in food and cosmetic products.

Coastal beaches, rocky intertidal shores, and tidal flats are used as recreation areas in the town and provide opportunities for recreation, fishing, fowling, hunting and navigation. They are important for recreational and commercial shellfishing, fishing, and aquaculture. Coastal beaches are aesthetically important when they are in a natural condition and do not contain imposing structures. They are part of the classic New England landscape. Tidal flats are significant to fisheries and wildlife habitat because they provide habitats for marine organisms such as polychaete worms and mollusks, which in turn are food sources for fisheries and migratory and wintering birds. Tidal flats are also sites where organic and inorganic materials may become entrapped and then returned to the photosynthetic zone of the water column to support algae and other primary producers of the marine food web.

Coastal beaches, rocky intertidal shores, and tidal flats serve as important habitats for a wide variety of wildlife. The degree of isolation from human-caused disturbances is a feature of a coastal beach, which is critical for the protection of wildlife. Coastal beaches, rocky intertidal shores, and tidal flats are used by coastal birds for feeding areas, nesting sites, and resting sites. The natural erosional and depositional cycles, sediment grain size, water quality (including but not limited to turbidity, temperature, nutrients, pollutants, salinity, and dissolved oxygen) and circulation, and elevation of the land surface are all features of wildlife habitat which are critical elements for the protection of wildlife.

Characteristics of coastal beaches and tidal flats which are critical to the protection of fisheries, shellfish, and aquaculture include: distribution of sediment grain size, movement of sediment, water quality (including the characteristics given above), and water circulation, and beach relief topography, slope and elevation. Characteristics of coastal beaches and tidal flats which are critical to prevention of storm damage, erosion control, or flood control include sediment volume and form, their ability to respond dynamically to wave action, natural erosional and depositional cycles, and wave intensities.

Characteristics of coastal beaches and tidal flats which are critical to recreation are topography, sediment grain size, water quality (including the characteristics given above), water circulation rates

and patterns, unobstructed access along shore, natural erosional and depositional cycles, and wave intensity. Characteristics of coastal beaches which are critical to aesthetics are natural erosion and deposition cycles, relief topography, slope and elevation, sense of openness and solitude. Land within 100 feet of a coastal beach or tidal flat is considered to be important to the protection and maintenance of coastal beaches and tidal flats, and therefore to the protection of the wetland values. The degree of isolation from human-caused disturbances is a desirable feature of a coastal beach, which is a critical element for the protection of wildlife.

- (b) Wetland Values and Presumption of Significance. Whenever a proposed project involves removing, filling, dredging, altering, building upon or degrading a coastal beach or flat or within a minimum distance of 100 feet of a coastal beach or flat, the Commission shall presume that the beach or flat is significant to the protection of the following wetland values: flood control; erosion and sedimentation control; storm damage prevention, including coastal storm flowage; prevention and abatement of water pollution; protection of fisheries; protection of shellfish; protection of wildlife and wildlife habitat; protection of rare species habitat, including rare plant and animal species; protection of recreation and open space; protection of aquaculture; and protection of aesthetics. These presumptions may be overcome only upon a clear showing that the coastal beach or tidal flat does not play a role in protecting one or more of the wetland values given above.
- (c) Definitions – Same as 310 CMR 10.27 (2) for Coastal Beach and Tidal Flat. Same as 310 CMR 10.31 (2) for Rocky Intertidal Shore.
- (d) Performance Standards. When a Coastal Beach, Rocky Intertidal Shore, or Tidal Flat or land within a minimum distance of 100 feet of a Coastal Beach, Rocky Intertidal Shore, or Tidal Flat is determined to be significant to a wetland value, the following regulations shall apply:
 - (1) Any project on a coastal beach shall not cause an adverse effect or cumulative adverse effect by increasing erosion, decreasing the volume or changing the form of any such coastal beach or rocky intertidal shore, or an adjacent or downdrift coastal beach or rocky intertidal shore.
 - (2) Notwithstanding the above, beach nourishment with clean sediment of a grain size compatible with that on the existing beach may be permitted provided there is no permanent adverse effect upon the wetland values or upon submerged aquatic vegetation, intertidal vegetation such as but not limited to salt marshes, or shellfish habitat.
 - (3) When tidal flats are significant to protection of shellfish, shellfish habitat, fish or fisheries, the performance standards for Land Containing Shellfish (HWR Section 17.8) shall apply. All Coastal Beaches and Tidal Flats within the Town of Hingham have been designated by the Commonwealth of Massachusetts as Designated Shellfish Growing Areas. A Designated Shellfish Growing Area is considered to be significant to the growth and health of shellfish whether or not shellfish are present. Thus the performance standards for Land Containing Shellfish (HWR Section 17.8) shall apply to all Coastal Beaches and Tidal Flats in the Town of Hingham.
 - (4) In addition to complying with the requirements of HWR Section 17.8, a project on a tidal flat shall have no adverse effect or cumulative adverse effect, on fisheries and/or wildlife habitat caused by alterations in water circulation, alterations in the distribution of sediment grain size,

and changes in water quality, including, but not limited to, other than natural fluctuations in the levels of dissolved oxygen, temperature or turbidity, or the addition of pollutants.

- (5) Notwithstanding the above provisions, no project may be permitted which will have any adverse effect or cumulative adverse effect on specified habitat of rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.37.
- (6) Compatible fill shall be used for beach nourishment projects. Compatible fill means clean sediment of a grain size that is approximately the same as the area being nourished (e.g., if the area being nourished consists of gravel, sand, silt or clay, then the fill brought in for nourishment should be gravel, sand, silt or clay). Clean means the sediment does not contain contaminants and is free of debris.
- (7) Performance standards for activities or work proposed in the Buffer Zone to a Coastal Beach, Rocky Intertidal Shore, or Tidal Flat are specified in HWR Section 19.0.
- (8) The Commission may impose such additional requirements as are necessary to protect the wetland values protected under the Bylaw.

17.3. Coastal Dunes

- (a) Preamble. Coastal dunes aid in storm damage prevention, erosion control, and flood control by supplying sand to coastal beaches. Coastal dunes protect inland coastal areas from storm damage and flooding by storm waves and elevated sea levels because such dunes are higher than the coastal beaches which they border. This is increasingly important as sea levels rise and severe storms become more frequent and stronger. Vegetated cover contributes to the growth and stability of coastal dunes by providing conditions favorable to sand deposition. On retreating shorelines, the ability of coastal dunes bordering a coastal beach to move landward at the rate of shoreline retreat allows these dunes to maintain their form and volume. Characteristics of coastal dunes which are critical for storm damage prevention, flood control, and erosion control include: ability of dune to erode and change in response to coastal beach conditions; dune volume, sediment grain size, and slope; dune form which can change with wind and natural water flow; amount, continuity, and density of vegetative cover; and ability of the dune to move landward or laterally.

Coastal dunes are important habitats for a wide variety of wildlife, particularly birds and rare species of plants and animals where these occur, for feeding and nesting areas. Amount of vegetation, dune height and slope, sediment grain size, and degree of isolation from human-caused disturbances are all features of dunes which are critical characteristics for the protection of wildlife. The pervious nature of coastal dunes allows for the infiltration of surface waters and therefore recharges groundwater and public and private water supplies, and also filters out pollutants.

Characteristics of coastal dunes which are critical to protection of aesthetic values and wetland scenic views are dune form, slope, elevation, size of dune field, degree of isolation, proportion and scale of dunes in relationship to other land forms. Land within 100 feet of a coastal dune is considered to be significant to the protection and maintenance of coastal dunes, and therefore to the protection of the wetland values which these areas contain. The degree of isolation from human-caused disturbances is a desirable feature of a coastal dune, which is a critical element for the protection of wildlife.

- (b) **Wetland Values and Presumption of Significance.** Whenever a proposed project involves removing, filling, dredging, altering or building upon a coastal dune or within 100 feet of a coastal dune, the Commission shall presume that the dune is significant to the protection of the following wetland values: protection of public or private water supply; protection of groundwater; flood control; erosion and sedimentation control; storm damage prevention, including coastal storm flowage; prevention of and abatement of water pollution; protection of fisheries; protection of shellfish; protection of wildlife and wildlife habitat; protection of rare species habitat, including rare plant and animal species; protection of recreation and open space; protection of aquaculture; and protection of aesthetics. These presumptions may be overcome only upon a clear showing that the dune does not play a role in protecting one or more of the wetland values given above.
- (c) **Definition** – Same as 310 CMR 10.28 (2).
- (d) **Performance Standards.** When a Coastal Dune or land within a minimum distance of 100 feet of a Coastal Dune is determined to be significant to a wetland value, the following regulations shall apply:
- (1) A proposed project shall not cause any adverse effect or cumulative adverse effect on the ability of a Coastal Dune to migrate or undergo other change in shape, volume of sediment or location due to natural processes.
 - (2) With the exception of engineered coastal dunes, no new coastal revetments or coastal engineering structures of any type shall be constructed on a Coastal Dune.
 - (3) Pedestrian walkways must be designed as determined by the Commission so as to minimize disturbance of vegetative cover.
 - (4) Notwithstanding the above provisions, no project may be permitted which will have any adverse effect on specified habitat of rare vertebrate or invertebrate, as identified by procedures established under 310 CMR 10.37.
 - (5) Compatible fill shall be used for dune nourishment projects. Compatible fill means clean sediment of a grain size and composition that is approximately the same as the area being nourished. Clean means the sediment does not contain contaminants and is free of debris.
 - (6) Alteration of sand dunes is prohibited when the alteration would increase potential flood damage.
 - (7) Performance standards for activities or work proposed in the Buffer Zone to a Coastal Dune are specified in HWR Section 19.0.
 - (8) The Commission may impose such additional requirements as are necessary to protect the wetland values protected under the Bylaw.

17.4. Barrier Beaches

- (a) **Preamble.** Barrier Beaches protect landward areas from flooding and erosion because they provide a buffer to storm waves and to sea levels elevated by storms. This is increasingly important as sea levels rise and severe storms become more frequent and stronger. Barrier Beaches provide protection from wave action for such highly productive areas as salt marshes, estuaries, tidal flats, lagoons, salt

ponds, and freshwater marshes and ponds, which are in turn important to fisheries, shellfish, wildlife, and rare species where they occur. Barrier beaches are maintained by the alongshore movement of beach sediment caused by wave action. The Coastal Dunes, Coastal Beaches, and Tidal Flats of a barrier beach system are made up of sediment supplied by wind action, storm wave overwash, and tidal inlet deposition. Barrier Beaches undergo a landward or along-shore migration caused by the landward and along-shore movement of sediment by wind, waves, and currents. The continuation of these processes maintains the volume of the landform which is necessary to carry out its storm and flood buffer functions. The ability of barrier beaches to respond to wave action, including storm overwash sediment transport, is critical to the protection of wetlands values of barrier beaches.

- (b) Wetland Values and Presumption of Significance. Whenever a proposed project involves removing, filling, dredging, altering, or building upon a Barrier Beach or within 100 feet of a Barrier Beach, the Commission shall presume that the Barrier Beach is significant to the protection of the following wetland values: flood control; erosion and sedimentation control; storm damage prevention, including coastal storm flowage; protection of fisheries; protection of shellfish; protection of wildlife and wildlife habitat; protection of rare species habitat, including rare plant and animal species; protection of recreation and open space; protection of aquaculture; and protection of aesthetics. These presumptions may be overcome only upon a clear showing that the Barrier Beach does not play a role in protecting one or more of the wetland values given above.
- (c) Definition – Same as 310 CMR 10.29 (2).
- (d) Performance Standards. When a Barrier Beach or land within 100 feet of a Barrier Beach is determined to be significant to a wetland value, the regulations set forth in HWR Sections 17.2(d) and 17.3(d) and 310 CMR 10.29(3) and (4) shall apply.

17.5. Coastal Banks

- (a) Preamble. Coastal banks composed of unconsolidated sediment and exposed to wave action serve as a major source of sediment for other coastal landforms, including beaches, dunes, and barrier beaches. The supply of sediment is removed from such *sediment source* banks by wave action. It is a naturally occurring process necessary to the continued existence of coastal beaches, coastal dunes, and barrier beaches. These areas protect public safety because they dissipate storm wave energy, thus protecting structures and coastal wetlands landward of them from storm damage, erosion, and flooding.

Coastal banks, because of their height and stability, may act as a *vertical buffer* or natural wall, which protects upland areas from storm damage, erosion, and flooding. While erosion caused by wave action is an integral part of shoreline processes and furnishes important sediment to downdrift landforms, erosion of a coastal bank by wind and rain runoff, which plays only a minor role in beach nourishment, should not be increased unnecessarily. Disturbance to a coastal bank which reduces its natural resistance to wind and rain erosion causes cuts and gullies in the bank, and decreases its value as a vertical buffer. Vegetation tends to stabilize a coastal bank and reduce the rate of erosion due to wind and rain runoff. Undisturbed vegetated areas along banks are critical to reducing wind and rain erosion from at the top of the bank. Large trees either growing directly in a Coastal Bank or within the Buffer Zone to a Coastal Bank provide bank stability through their extensive root systems. Their

canopy areas serve to dissipate storm energy and partially limit the amount of rainfall reaching the ground. They also serve as valuable habitat for many birds, mammals, and other species.

A particular coastal bank may serve as a *sediment source* and a *vertical buffer* or it may serve only one role. Coastal banks of either type provide habitat for wildlife, particularly nesting birds and provide habitat for rare plant and animal species where these occur. Characteristics of coastal banks which are critical to wildlife are bank steepness (i.e. slope), height, stability, soil grain size and compaction or consolidation, and vegetation cover and type. Coastal banks provide scenic views of the coast and in a natural condition are scenic in themselves, thus providing opportunities for birdwatching and nature study, hiking, photography, and other recreation. Land within 100 feet of the top of any coastal bank is significant to the protection and maintenance of a bank and therefore the wetland values.

- (b) Wetland Values and Presumption of Significance. Whenever a proposed project involves removing, filling, dredging, altering or building upon a coastal bank or land within a minimum of 100 feet from the top of a coastal bank, the Commission shall presume that the bank is significant to the protection of the following wetland values: flood control; erosion and sedimentation control; storm damage prevention, including coastal storm flowage; protection of wildlife and wildlife habitat; protection of rare species habitat, including rare plant and animal species; protection of recreation and open space; and protection of aesthetics. These presumptions may be overcome only upon a clear showing that the coastal bank does not play a role in protecting one or more of the wetland values given above.
- (c) Definition – Same as 310 CMR 10.30 (2). In addition, a Sediment Source (i.e. eroding) Coastal Bank is a coastal bank which is or could be, as determined by the Conservation Commission, undergoing erosion or landward retreat and which is supplying sediment to a nearby Coastal Beach (including Tidal Flat), or Coastal Dune. A non-eroding, Vertical Buffer Coastal Bank is a coastal bank which is stable and is not undergoing and never will be, as determined by the Conservation Commission, erosion or landward retreat and which is not supplying sediment to a nearby Coastal Beach, or Coastal Dune.
- (d) Performance Standards.
 - (1) When a Coastal Bank is determined to be a Sediment Source (i.e., eroding coastal bank), the following regulations shall apply:
 - i. Proposed work shall not cause any adverse effect or cumulative adverse effect on the wetland values of the Coastal Bank.
 - ii. All projects shall be restricted to activities as determined by the Commission to have no adverse effect and no cumulative adverse effect on the ability of the eroding coastal bank to serve as a sediment source to coastal Resource Areas, bank height, bank stability, bank vegetation and wildlife habitat.
 - iii. All projects must provide a buffer strip to the top of the Coastal Bank that is sufficient to protect the values and functions of this type of Coastal Bank and to allow such Coastal Banks to continue to serve as a sediment source to coastal Resource Areas.

- iv. Notwithstanding the above, minimal elevated walkways designed not to affect bank vegetation and sediment transport may be permitted to allow for pedestrian passage over a bank, provided that the ability of the bank to serve as a sediment source and its stability are not adversely affected. Public access must not be limited or impaired in any way.
 - v. The Commission may impose such additional requirements as are necessary to protect the wetland values protected under the Bylaw.
- (2) When a Coastal Bank is determined to serve solely as a Vertical Buffer Coastal Bank, the following regulations shall apply:
- i. Proposed work shall not cause any adverse effect or cumulative adverse effect on the wetland values of the Coastal Bank.
 - ii. All projects shall be restricted to activities as determined by the Commission to have no adverse effect on bank height, bank stability, bank vegetation and wildlife habitat.
 - iii. The Commission may allow projects to approach the top of such a Vertical Buffer Coastal Bank, which meet all other performance standards for the Coastal Bank, or condition such projects so that they meet all performance standards.
 - iv. Notwithstanding the above, elevated walkways designed not to affect bank vegetation and bank stability may be permitted to allow for pedestrian passage over a bank, provided that the stability of the bank and wildlife habitat are not adversely affected. Public access must not be limited or impaired in any way.
 - v. The Commission may impose such additional requirements as are necessary to protect the wetland values protected under the Bylaw.
- (3) When a Coastal Bank is determined to serve as both a Sediment Source and a Vertical Buffer Coastal Bank, the performance standards specified for Sediment Source Coastal Banks shall take precedence over the performance standards specified for Vertical Buffer Coastal Banks.
- (4) Notwithstanding the above provisions, no project may be permitted which will have any adverse effect on specified habitat of rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.37.

17.6. Salt Marshes

- (a) Preamble. A salt marsh is a highly productive type of coastal wetland that produces large amounts of organic matter and provides valuable habitat. A significant portion of this material is exported as detritus and dissolved organics to estuarine and coastal waters, where it provides the basis for a large food web that supports many marine organisms, including fish and shellfish. Salt marshes also provide spawning and nursery habitat for several important estuarine forage fish. Salt marsh plants and substrate remove pollutants from surrounding waters. The network of salt marsh vegetation roots and rhizomes bind sediments together. The sediments absorb chlorinated hydrocarbons and heavy metals such as lead, copper and iron. The marsh also helps retain nitrogen and phosphorus compounds which can cause algal blooms and changes in ocean plankton and plant communities,

particularly eelgrass. The marsh and its underlying peat play a significant role in carbon sequestration. The underlying peat serves as a barrier between fresh groundwater landward of the marsh and the ocean, thus helping to maintain the level of the groundwater and protecting public and private water supplies by preventing saltwater intrusion.

Salt marsh vegetation, cord grass, and underlying peat and soils are resistant to erosion and dissipate wave energy, thereby providing a buffer that reduces wave damage and coastal erosion. Salt marshes are important feeding areas for many types of fish, shellfish, invertebrates, and aquatic and terrestrial wildlife. The marsh, including its creeks and open water, also provides important shelter for many aquatic and migratory birds. The degree of isolation from human-caused disturbances is critical for the protection of wildlife. Where rare species of plants and animals occur, salt marsh provides important rare species habitat.

Marshes help absorb pollutants, but there is a careful balance of nutrient and pollutant input. Because the marsh is the basis for such a large food web, bioaccumulation of pollutants and toxins can mean that relatively low levels of pollutants may be detrimental. Some of the characteristics of salt marshes which are critical to their health and ability to protect wetland values include: the growth, composition, and distribution of salt marsh vegetation; the amount of flow and level of both tidal and fresh water; the water quality (including but not limited to turbidity, temperature, nutrients, pollutants, salinity, and dissolved oxygen) of both tidal and fresh water; the presence and depth of peat; rate of marsh productivity; and the diversity of the animals and plants making up the marsh community. Salt marshes provide excellent areas for recreational activities such as bird watching, boating, hunting, fishing and shellfishing. Salt marshes in a natural condition are aesthetically valuable. Land within 100 feet of a salt marsh is considered to be significant to the protection and maintenance of salt marshes, and therefore to the protection of the wetland values.

- (b) Wetland Values and Presumption of Significance. Whenever a proposed project involves removing, filling, dredging, altering or building upon a salt marsh or within a minimum distance of 100 feet of a salt marsh, the Commission shall presume that the salt marsh is significant to the protection of the following protected values: protection of public or private water supply; protection of groundwater; flood control; erosion and sedimentation control; storm damage prevention, including coastal storm flowage; prevention and abatement of water pollution; protection of fisheries; protection of shellfish; protection of wildlife and wildlife habitat; protection of rare species habitat, including rare plant and animal species; protection of recreation and open space; protection of aquaculture; and protection of aesthetics. These presumptions may be overcome only upon a clear showing that the salt marsh does not play a role in protecting one or more of the wetland values given above.
- (c) Definition – A vegetated area characterized by but not limited to the presence of *Spartina patens*, *Spartina alterniflora*, or High Tide Bush or any area that meets the criteria of Salt Marshes (310 CMR 10.32).
- (d) Performance Standards. When a Salt Marsh or land within a minimum distance of 100 feet of a Salt Marsh is determined to be significant to a wetland value, the following regulations shall apply:
 - (1) A proposed project in a Salt Marsh, on lands within 100 feet of a Salt Marsh, or in a body of water adjacent to a Salt Marsh shall not destroy any portion of the Salt Marsh or its substratum and shall not have an adverse effect or cumulative adverse effect upon the productivity and

wetland values of the Salt Marsh. Alterations in growth, distribution and composition of Salt Marsh vegetation shall be considered in evaluating adverse effects on productivity. The landward approach to a structure sited on or near a salt marsh should minimize any adverse impact on the vegetation in the Salt Marsh. This section shall not be construed to prohibit the harvesting of salt hay.

- (2) Notwithstanding the provisions of HWR Section 17.6(d)(1), a small project within a Salt Marsh, such as an elevated walkway or other structure which has no adverse effects other than limited blocking of sunlight from the underlying vegetation for a portion of each day, may be permitted if such a project complies with all other applicable requirements of these regulations and in accordance with HWR Section 20.0(c).
- (3) Notwithstanding the provisions of HWR Sections 17.6(d)(1) and (2), a project which will restore or rehabilitate a Salt Marsh may be permitted; provided, however, that this provision shall not be construed to allow the alteration of one salt marsh on a given site by or contingent upon the creation or restoration of a salt marsh on another.
- (4) Filling
 - i. No filling or excavation or other alteration of Salt Marsh shall be permitted, except as permitted for docks and piers or other water-dependent projects in accordance with HWR Section 20.0(c).
 - ii. The Commission is authorized to deny any filling of any Resource Area in order to protect the wetland values of the Resource Area.
- (5) Performance standards for activities or work proposed in the Buffer Zone to a Salt Marsh are specified in HWR Section 19.0. No activity, other than the maintenance of an already existing structure, which will result in the building within or upon, removing, filling, or altering of a Salt Marsh or of any adjacent upland within 100 feet of any Salt Marsh shall be permitted, except for activity which is allowed under HWR Section 19.0(d) or other activity as permitted under a waiver from the regulations pursuant to HWR Section 7.15.
- (6) The Commission may impose such additional requirements as are necessary to protect the wetland values protected under the Bylaw.
- (7) Notwithstanding the above provisions, no project may be permitted which will have any adverse effect on specified habitat of rare vertebrate or invertebrate, as identified by procedures established under 310 CMR 10.37.

17.7. Land Under Salt Ponds

- (a) Preamble. Salt Ponds provide excellent habitat for marine fisheries and shellfish. The high productivity of plants and phytoplankton in salt ponds provides food for shellfish, crustaceans and other invertebrates, and juvenile fish. Bottom sediments and shallow water are excellent areas for many bivalves. The ponds also serve as spawning and nursery areas for both vertebrate and invertebrate species. The productivity of salt ponds and the food web they support provide ideal habitat for many types of wildlife, particularly ducks and shore birds, and for rare species of plants

and animals where they occur. Salt ponds may provide suitable habitat for aquaculture. The enclosed nature of the ponds also provides shelter for wildlife. Salt ponds and the area around them are important aesthetically and provide the public with many recreational opportunities including: shellfishing, fishing, boating and sailing, swimming, hunting, and wildlife observation. Because of their semi-enclosed nature, salt ponds are sensitive to pollution or nutrient inputs. These inputs can change the plant and animal species composition of the pond, and thus can be detrimental to fish, shellfish, and wildlife. Bioaccumulation through food webs can also create dangerous levels of pollutants or toxins for wildlife and humans.

Characteristics of salt ponds which are critical to various wetland values include, but are not limited to, water circulation, distribution of sediment grain size, amount of freshwater and saltwater inflow, productivity of plants, and water quality (including but not limited to amounts of dissolved oxygen, nutrients, temperature, turbidity, pollutants, pH, and/or salinity). Land within 100 feet of a salt pond is considered to be significant to the protection and maintenance of a salt pond and the land beneath it and therefore to the protection of the wetland values of the salt pond.

- (b) Wetland Values and Presumption of Significance. Whenever a proposed project involves removing, filling, dredging, altering or building upon a Salt Pond or land within a minimum distance of 100 feet from a salt pond, the Commission shall presume that the salt pond is significant to the protection of the following wetland values: protection of public or private water supply; protection of groundwater; flood control; erosion and sedimentation control; storm damage prevention, including coastal storm flowage; prevention and abatement of water pollution; protection of fisheries; protection of shellfish; protection of wildlife and wildlife habitat; protection of rare species habitat, including rare plant and animal species; protection of recreation and open space; protection of aquaculture; and protection of aesthetics. These presumptions may be overcome only upon a clear showing that the salt pond does not play a role in protecting one or more of the wetland values stated above.
- (c) Definition – Same as 310 CMR 10.33(2).
- (d) Performance Standards. When a Salt Pond or land within a minimum distance of 100 feet of a Salt Pond is determined to be significant to a wetland value, the following regulations shall apply:
 - (1) Proposed work shall have no significant adverse effect or cumulative adverse effect upon the wetland values of a Salt Pond.
 - (2) Notwithstanding the above provisions, no project may be permitted which will have any adverse effect on specified habitat of rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.37.
 - (3) Performance standards for proposed work or activities within the Buffer Zone to a Salt Pond are specified in HWR Section 19.0.
 - (4) The Commission may impose such additional requirements as are necessary to protect the wetland values protected under the Bylaw.

17.8. Land Containing Shellfish

- (a) Preamble. Shellfish are one of the wetland values protected by the Bylaw. Land containing shellfish is found within many of the Resource Areas protected by the Bylaw. In addition to the regulations for those Resource Areas as given above in these regulations, this section discusses additional protection for shellfish and shellfish habitat. Land containing shellfish is important to the protection of marine fisheries in addition to the protection of shellfish. Shellfish in the Town of Hingham are a very important recreational and commercial resource and an important economic commodity for fishermen and the Town. Shellfish used as a human food resource need very clean, uncontaminated water, since they have the ability to concentrate very low levels of pollutants. Shellfish are a valuable renewable resource. The maintenance of productive shellfish beds not only assures the continuance of shellfish themselves but also plays a direct role in supporting fish stocks by providing a major food source. Because shellfish are filter feeders, they play a significant role in removal of bacteria and other microorganisms from the water.

Characteristics of land containing shellfish which are critical to the protection of shellfish include, but are not limited to: water circulation patterns, rates of water flow, and amounts of water; the relief, elevation, distribution, grain size, and pollutant load of the sediments; water quality (including turbidity, temperature, pollutants, nutrients, salinity, and dissolved oxygen); and public access to the site for the purpose of shellfishing, fishing, hunting, or navigating. Opportunities for recreational shellfishing and shellfish aquaculture help maintain the coastal aesthetics values and enhance the coastal experience of the Town.

A determination of shellfish habitat can be based on the results of a site analysis and/or on current or historic shellfish productivity, or municipal shellfish population development programs. Absence of shellfish shall not be solely determinative of the quality of shellfish habitat due to the cyclic nature of shellfish population. All coastal waters in Hingham have been identified as Designated Shellfish Growing Areas by the Commonwealth of Massachusetts.

- (b) Wetland Values and Presumption of Significance. Whenever a proposed project involves removing, filling, dredging, altering or building upon land containing shellfish or the water over land containing shellfish or within a minimum distance of 100 feet of such land, the Commission shall presume that the land containing shellfish is significant to the protection of the following wetland values: prevention and abatement of water pollution; protection of fisheries; protection of shellfish; protection of recreation and open space; protection of aquaculture; and protection of aesthetics. These presumptions may be overcome only upon a clear showing that land containing shellfish does not play a role in protecting one or more of the values given above. The Commission may require information on historical abundance or harvests of shellfish, a shellfish survey, or other information concerning historical or existing shellfish habitat at the site.
- (c) Definition – Same as 310 CMR 10.34 (2).
- (d) Performance Standards. When a Land Containing Shellfish or land within a minimum distance of 100 feet of Land Containing Shellfish is determined to be significant to a wetland value, the following regulations shall apply:

- (1) A proposed project shall not cause any adverse effect or cumulative adverse effect on Land Containing Shellfish.
- (2) A proposed project shall not change water quality (including but not limited to changes in turbidity, temperature, salinity, dissolved oxygen, nutrients and pollutants), water circulation, or natural drainage from adjacent land.
- (3) A proposed project shall not obstruct or limit the ability of the public to gather shellfish recreationally or the ability of commercial fishermen to harvest shellfish or obstruct or limit an existing aquaculture project.
- (4) Notwithstanding the above provisions, no project may be permitted which will have any adverse effect on specified habitat of rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.37.
- (5) Performance standards for activities or work proposed in the Buffer Zone to Land Containing Shellfish are specified in HWR Section 19.0.
- (6) The Commission may impose such additional requirements as are necessary to protect the wetland values protected under the Bylaw.

17.9. Anadromous/Catadromous Fish Runs, Banks along Fish Runs, and Lands Under Fish Runs

- (a) Preamble. Fisheries are one of the wetland values under the Bylaw. Anadromous and catadromous fish are renewable natural resources that provide recreational and commercial benefits. In addition, throughout their life cycle such fish are important components of freshwater, estuarine, and marine environments and are food sources for other organisms. Fish runs provide habitats for other fish, shellfish and wildlife. Characteristics of fish runs which are critical to the protection of anadromous/catadromous fish include: ease of fish passage upstream and downstream, accessibility of spawning and nursery grounds to fish, volume and rate of water flow in both migratory and spawning areas, and water quality (including turbidity, temperature, pollutants, nutrients, salinity, pH, and dissolved oxygen). Fish runs are important for recreational and commercial fisheries, and provide aesthetically valuable areas for such activities.
- (b) Wetland Values and Presumption of Significance. Whenever a proposed project involves removing, filling, dredging, altering, or building upon a fish run or within a minimum distance of 100 feet of a fish run, the Commission shall presume that the fish run is significant to the protection of the following wetland values: prevention of water pollution; protection of fisheries; protection of shellfish; protection of wildlife and wildlife habitat; protection of rare species habitat, including rare plant and animal species; protection of recreation; and protection of aesthetics. These presumptions may be overcome only upon a clear showing that the fish run and the land under a fish run does not play a role in protecting one or more of the wetland values given above.
- (c) Definition – Same as 310 CMR 10.35(2).
- (d) Performance Standards. When a Fish Run or land within a minimum distance of 100 feet of a Fish Run is determined to be significant to a wetland value, the following regulations shall apply:

- (1) A proposed project shall not cause any adverse effect or cumulative adverse effect upon the wetland values of a Fish Run.
- (2) Proposed projects shall not be permitted to fill a fish run, impede the upstream or downstream migration of fish, or change the volume, rate or quality of water flow or water quality in a fish run.
- (3) Notwithstanding the above provisions, no project may be permitted which will have any adverse effect on specified habitat of rare vertebrate or invertebrate and rare plant species, as identified by procedures established under 310 CMR 10.37 for Coastal Resource Areas or 310 CMR 10.59 for Inland Resource Areas.
- (4) Performance standards for work or activities proposed in the Buffer Zone to a Fish Run are specified in HWR Section 19.0.
- (5) The Commission may impose such additional requirements as are necessary to protect the wetland values protected under the Bylaw.

17.10. Land Subject to Coastal Storm Flowage (LSCSF)

- (a) Preamble. Land Subject to Coastal Storm Flowage (LSCSF) is significant to storm damage prevention and flood control. LSCSF is also likely to be significant to the protection of wildlife habitat and the prevention of water pollution.

Velocity zones (VE-zones) and Moderate Wave Action (MoWA) Areas of LSCSF are areas which are subject to hazardous flooding, wave impact, and, in some cases, significant rates of erosion as a result of storm wave impact and scour. VE-zones and MoWA Areas in coastal areas are generally subject to repeated storm damage which can result in loss of life and property, increasing public expenditures for storm recovery activities, historic taxpayer subsidies for flood insurance and disaster relief, and increased risks for personnel involved in emergency relief programs. A number of complex and inter-related factors determine the wave height and the landward extent of wave run-up in VE-zones and MoWA Areas, including shoreline orientation, nearshore/offshore bathymetry, onshore topography, wave fetch, storm frequency and magnitude, and the presence of coastal engineering structures. The topography, soil characteristics (e.g., composition, density, and shape of soil material), vegetation, and erodibility and permeability of the land surface within VE zones and MoWA Areas are critical characteristics which determine how effective an area is in dissipating wave energy and in protecting areas within and landward of these zones from storm damage and flooding.

The more gentle and permeable a seaward-sloping land surface is, the more effective that land surface is at reducing the height and velocity of incoming storm waves. Wave energy may be expended by eroding and transporting materials comprising the land surface within the VE-zones and MoWA Areas, as well as by percolation or the downward movement of the stormwater runoff through more permeable land surfaces, thereby lessening the effects of backrush, scour, and erosion. Development in VE-zones and MoWA Areas poses environmental problems since construction and development activities can impair or destroy those characteristics cited above which are critical to the stated values.

Dredging or removal of materials within VE-zones and MoWA Areas acts to increase the landward velocity and height of storm waves, thereby allowing storm waves to break further inland and to impact upland and wetland Resource Areas which might not otherwise be impacted. Filling and the placement of solid fill structures within VE-zones and MoWA Areas may cause the refraction, diffraction and/or reflection of waves, thereby forcing wave energy onto adjacent properties, natural resources, and public or private ways potentially resulting in otherwise avoidable storm damage. When struck with storm waves, solid structures within VE-zones and MoWA Areas also may increase localized rates of erosion and scour (Shore Protection Manual, U.S. Army Corps of Engineers, 1984, V.1, pp.5-3 and 5-5).

LSCSF (the coastal floodplain) buffers and protects upland areas from severe storm conditions. Since the floodplain contains areas where the water table is close to the surface (as well as other wetland Resource Areas), pollutants in a floodplain, including contents of septic systems and fuel tanks, may affect public or private water supplies, groundwater quality, wildlife, fisheries, and shellfish during a storm. Direct and collateral damage to man-made structures in the floodplain is caused by wave impacts and inundation by floodwaters and storm-driven debris. Protecting lives and property in floodplains during a storm can be expensive to the Town of Hingham and unsafe for its police, fire, and medical personnel involved in such efforts. Hardened surfaces deflect wave energy; they do not dissipate it. Soft structures and surfaces dissipate wave energy and protect property. Desires of property owners to protect themselves from the effects of storms can lead to pressure on the Town and its regulatory bodies to erect engineering structures in wetlands which can have detrimental effects on wetland values. Certain portions of LSCSF are significant to the protection of wildlife habitat; these significant wildlife habitat areas include all areas within the 100-year floodplain that are within 100 feet of any other coastal or freshwater Resource Area, except for those portions which have been so extensively altered by human activity that their important wildlife habitat functions have been effectively eliminated.

Coastal floodplain areas are often low-lying areas that are ecologically transitional areas between marine/estuarine ecosystems and upland areas. Resource Areas within the 100-year floodplain are important habitats for a large variety of wildlife species, including a number of rare species. Salt marshes provide habitat for many crustaceans, mollusks, and other invertebrates and serve as critical nursery areas for numerous finfish species which in turn provide food for species higher in the food chain, including birds, mammals, and others. These Resource Areas provide important over-wintering and stopover areas for many species. Areas of coastal floodplains adjacent to other wetland Resource Areas provide important wildlife functions, such as nesting and roosting habitat, rare species habitat, and wildlife corridors connecting coastal resources with freshwater wetland resources. The coastal floodplain serves as a transitional zone which is needed to protect the habitat values of coastal wetland resources.

Certain portions of LSCSF are significant to the prevention of pollution. These significant pollution prevention areas include all areas within the 100-year floodplain that are within 100 feet of any other coastal or freshwater Resource Area. These pollution prevention areas can mitigate adverse effects associated with human disturbance and pollutants. Natural or relatively undisturbed coastal floodplains can reduce erosion and sedimentation, and in a vegetated state can prevent pollutants contained in surface runoff from directly entering waterways and other wetland areas during flood

events. While erosion of stream banks and shorelines is an important natural process, the design and management of activities in the floodplain should aim to avoid excessive erosion (and thus possible pollutant-laden runoff) due to human activities.

Areas of coastal floodplains which are immediately landward of Salt Marshes, coastal beaches, Barrier Beaches, Coastal Dunes or Coastal Banks are likely to be in a state of transition as the entire complex of coastal wetland resources gradually moves landward as a result of climate change and sea level rise. For thousands of years, relative sea level has been rising in Massachusetts, and it is still rising resulting in gradual inundation of landward area.

As sea level rises, the shoreline may retreat, and areas of the coastal floodplain will successively be inundated more frequently by storm and tidal activity. Activities carried out within these transitional areas of coastal floodplains may interfere with the natural landward migration of the adjacent coastal Resource Areas. Maintaining these transitional areas in their natural state is significant to the protection of the interests of other wetland resources.

- (b) **Wetland Values and Presumption of Significance.** Whenever a proposed project involves removing, filling, dredging, altering, or building upon on LSCSF, the Commission shall presume that the land is significant to the protection of the following wetland values: protection of public or private water supply; protection of groundwater; flood control; erosion and sedimentation control; storm damage prevention, including coastal storm flowage; prevention and abatement of water pollution; protection of fisheries; protection of shellfish; protection of wildlife and wildlife habitat; protection of rare species habitat, including rare plant and animal species; protection of recreation and open space; and protection of aesthetics. These presumptions may be overcome only upon a clear showing that LSCSF does not play a role in protecting one or more of the wetland values cited above.
- (c) **Definitions.**

LSCSF means land subject to any inundation caused by coastal storms up to and including those that result in a 100-year flood as designated by the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM), surge of record, or flood of record, whichever is greater. A 100-year flood (or base flood as it is also referred to) means the flood having a one percent (1 %) chance of being equaled or exceeded in any given year. The seaward limit is mean low water.

Areas subject to protection under these Regulations include all special flood hazard areas within the Town of Hingham designated as Zone A, AE, or VE on the Plymouth County Flood Insurance Rate Map (FIRM) issued by the Federal Emergency Management Agency (FEMA) for the administration of the National Flood Insurance Program (NFIP). The map panels of the Plymouth County FIRM that are wholly or partially within the Town of Hingham are panel numbers 25023C0016J, 25023C0017J, 25023C0018J, and 25023C0019J, dated July-17, 2012; 25023C0104K, dated July 6, 2021; and 25023C0038K, 25023C0081K, 25023C0082K, 25023C0083K, 25023C0084K, 25023C0091L, 25023C0092L, 25023C0101L, 25023C0102K, 25023C0103L, and 25023C0111L, dated July 3, 2024. The special flood hazard areas may be defined by the 100-year base flood elevations shown on the FIRM and further defined by the Plymouth County Flood Insurance Study (FIS) report dated July 3, 2024. The FIRM and FIS report are incorporated herein by reference and are on file with the Town Clerk, Building Department, and Conservation Commission. Letters of Map Revision (LOMRs) are also on file with the Conservation Commission.

Velocity Zones (Zone VE or VE-zones) are those portions of LSCSF which are coastal high hazard areas or areas of special flood hazard extending from the mean low water line to the inland limit within the 100-year floodplain subject to high velocity water. The base flood elevations (BFEs) of VE-zones reflect the combined influence of stillwater flood elevations, primary frontal dunes, and wave effects of three feet or greater.

AE-zones (Zone AE) are those portions of LSCSF which are subject to inundation by types of 100-year flooding where stillwater flooding occurs with moderate and minor waves. AE-zones generally extend from the landward limit of VE-zones to the limit of the 100-year flood from coastal sources, or until they reach the confluence with riverine flood sources. The base flood elevations (BFEs) of AE-zones reflect the combined influence of stillwater flood elevations and wave effects of less than three feet.

Limit of Moderate Wave Action (LIMWA) is the inland limit of the Moderate Wave Action (MoWA) Area. It is presented on the FEMA FIRM as a solid black line with arrows along the line pointing in the direction of the MoWA area.

Moderate Wave Action (MoWA) Areas are those portions of the AE Zone where the flood elevation includes wave action of equal to or greater than 1.5 (one and one half) feet and less than 3 feet. The landward limit of the MoWA Area is the LIMWA and the seaward limit is the VE Zone.

Overwash is that portion of storm wave uprush that carries over the crest of a berm, dune, or man-made structure, often times depositing sediment or other storm laden material.

- (d) Performance Standards. When a LSCSF is determined to be significant to a wetland value, the following regulations shall apply:
- (1) A proposed project shall not cause any adverse effect or cumulative adverse effect upon the wetland values of LSCSF.
 - (2) When LSCSF is significant to protection of wildlife habitat, a proposed activity shall not impair the capacity of LSCSF to provide important wildlife habitat functions.
 - (3) When LSCSF is significant to pollution prevention, a proposed activity shall not cause ground, surface, or salt water pollution triggered by coastal storm flowage or flooding. For those areas within at least 100 feet of another Resource Area, activities shall minimize adverse effects in order to maintain the capability to remove suspended solids and other contaminants from runoff before it enters other Resource Areas.
 - (4) For activities proposed in LSCSF, Applicants shall evaluate and incorporate into their projects, to the extent practicable, measures to protect Resource Area values from the impacts of sea level rise. The NOI Project Plans shall show the boundary of the 2070 projected 1% annual chance flood, as modeled by the Massachusetts Coast Flood Risk Model (MC-FRM). The NOI shall describe measures incorporated into the project site planning and design that enhance ecological climate resilience to the impacts of sea level rise. Such measures may include, without limitation, locating proposed structures outside the projected flood zone; protecting and restoring Resource Areas and adjacent upland areas; and providing adequate freeboard to protect Resource Areas from flood debris and hazardous materials released from flood damaged

properties. Those measures considered but not incorporated into the project design due to lot constraints or other site factors shall also be described.

- (5) All subdivision and development proposals must be designed and reviewed to assure that:
 - i. Such proposals minimize flood damage;
 - ii. All public utilities and facilities are located and constructed to minimize or eliminate flood damage; and
 - iii. Adequate drainage is provided to reduce exposure to flood hazards.
- (6) The following activities proposed within VE-zones and/or MoWA Areas are likely to have an adverse effect on the protected values and are therefore prohibited:
 - i. New construction or placement of new structures, including buildings, sheds, garages, and retaining walls. The Commission may allow, at its discretion, replacement and/or expansion of an existing building provided that the building will, at a minimum, improve upon the protection of wetland values over existing conditions, be located as far landward on the lot as practicable, and be elevated on open piles to allow flood water to flow completely unobstructed under the building during the 1% annual chance flood. Open piles shall not be considered an obstruction.
 - ii. Impermeable surfaces for new roads, driveways, and parking lots, and the conversion of existing permeable roads, driveways and parking lots into impermeable surfaces.
 - iii. New or proposed expansions (height and footprint) of coastal engineering structures unless such structures are soft engineering solutions, such as, but not limited to, living shorelines, vegetated terraces, or other natural vegetated designs, or hybrid shoreline infrastructure, or the applicant has provided an alternatives analysis demonstrating that a soft engineering solution or hybrid shoreline infrastructure is not feasible or practicable and that the preferred alternative is proven to provide climate change resiliency improvements and will not create or exacerbate storm damage and flooding impacts on adjacent or nearby properties. The Commission will evaluate the following elements of all proposals for new or proposed expansions of coastal engineering structures, and may request additional information as follows.
 1. Coastal engineering structures shall not cause or create the likelihood of the following: reduction in the ability of the land to absorb and contain waters; reduction in the ability of the land to buffer more inland areas from flooding and wave damage; displacement or diversion of floodwaters to other areas; damage to other structures or properties; increase in the elevation or velocity of floodwaters; increase in water pollution; reduction in the protection of the habitat and wetland values of other adjacent Resource Areas; and/or prevention of the migration of Resource Areas, such as salt marshes, due to sea level rise.
 2. A loose, sloped-stone design shall be prioritized over other hard engineering solutions, either as part of hybrid shoreline infrastructure proposal or as a standalone

proposal accompanied by an alternatives analysis. If another hard engineering solution is proposed, the Commission may require an additional alternatives analysis demonstrating that a loose, sloped-stone design is not feasible or practicable.

3. The Commission will consider whether the proposed coastal engineering structure is an overall benefit to the coastal community and the wellbeing of the marine environment and/or whether there is an overriding public interest.
 4. The Commission may require a scientifically validated study of the proposal with appropriate methodology, especially where wave and wind action may be a substantial cause of seeking the installation or modification of a coastal engineering structure; or where impacts to marine life are anticipated; or where the proposed work may impact abutting properties not owned by the applicant, a study of changes in flowage and sediment transport.
 5. The Commission may require a statement from a qualified professional on the effectiveness of the proposed work, based on issues such as climate change, and whether such work will have a reasonable, long-term, beneficial impact, as desired by the applicant, as sea levels continue to rise.
- iv. New or expanded septic systems. Replacement or repair of an existing septic system shall be allowed only if no alternative location is available on the lot or other parcel under the ownership or control of the owner of the system proposed and, where applicable, provided that variance of property line and/or street layout setbacks have been applied for from the Town of Hingham Board of Health.
- (7) Notwithstanding the above, the Commission may permit the following activities in VE- and AE-zones provided that the applicant demonstrates to the satisfaction of the Commission that best available measures are utilized to avoid or minimize adverse effects on all wetland values of all Resource Areas:
- i. Fences that do not impede the passage of flood waters.
 - ii. Beach, dune, and bank nourishment and restoration projects that incorporate natural vegetative cover and do not otherwise impede the landward migration of these landforms over time.
 - iii. Elevated pedestrian walkways that are minimal. Walkways must meet the performance standards for docks and piers specified in HWR Section 20.0..
 - iv. Docks and piers provided they meet the performance standards specified in HWR Section 20.0.
 - v. Projects to restore salt marsh, freshwater wetland, shellfish habitat, or fisheries.
 - vi. Improvements necessary to maintain the structural integrity or stability of existing coastal engineering structures.

- vii. Improvements that contribute to climate change resiliency and do not create or exacerbate storm damage and flooding impacts on adjacent or nearby properties.
 - viii. Projects designed to protect critical public infrastructure from storm surge and sea level rise.
 - ix. Projects and activities associated with water-dependent uses such as boat yards and yacht clubs.
 - x. Maintenance dredging and channel maintenance dredging.
- (8) Notwithstanding the above provisions, no project may be permitted which will have any adverse effect on specified habitat of rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.37.
- (9) When proposing subdivisions or other developments greater than 50 lots or 5 acres, whichever is less, the proponent must provide technical data to determine base flood elevations for each developable parcel shown on the design plans.
- (10) The Commission may impose such additional requirements as are necessary to protect the wetland values protected under the Bylaw.



18.0 INLAND RESOURCE AREAS

18.1. Inland Banks and Beaches

- (a) Preamble. Banks are areas where ground water discharges to the surface and where, under some circumstances, surface water recharges the ground water. Where banks are partially or totally vegetated, the vegetation serves to maintain the Bank's stability, which in turn protects water quality by reducing erosion and siltation. Banks act to confine floodwaters during most storms, preventing the spread of water to adjacent land. Bank alterations which allow water to frequently and consistently spread over a larger and shallower area result in an increase in the amount of land routinely flooded and elevated water temperatures.

Banks may provide shade that moderates water temperatures as well as providing breeding habitat, escape cover and feeding areas, all of which are important for the protection of fish and wildlife, including any rare species which may occur. Banks may also help channel water and thus maintain a water depth which helps keep the water temperatures cool in warm weather, thus providing habitat necessary for both fish and the food sources for fish. Inland banks may act as a sediment source for inland beaches. By confining floodwaters, banks decrease the erosion of topsoil from adjacent land surfaces and help prevent flood and storm damage to buildings and roads. Confining floodwaters also decreases water pollution and helps to protect public or private water supplies by preventing floodwaters from mixing with many contaminants found on roads, near and in dwellings, from fertilized soil, from domestic animals and from septic tanks. Banks may provide nesting habitat for some species of birds. Banks and particularly beaches provide wildlife and human access to water bodies for recreation and for aesthetic enjoyment of the scenery. Land within 100 feet of inland banks and beaches is significant to the protection and maintenance of inland banks and beaches and therefore to the wetland values of these Resource Areas. Land within a minimum distance of 100 feet

of a bank is likely to be significant to the protection and maintenance of the bank, and therefore to the protection of the wetland values of these Resource Areas.

- (b) **Wetland Values and Presumption of Significance.** Whenever a proposed project involves removing, filling, dredging, altering or building upon an inland bank or beach or within a minimum distance of 100 feet of an inland bank or beach, the Commission shall presume that the bank or beach is significant to the protection of the following wetland values: protection of public or private water supply; protection of groundwater; flood control; erosion and sedimentation control; storm damage prevention, including coastal storm flowage; prevention and abatement of water pollution; protection of fisheries, protection of wildlife and wildlife habitat; protection of rare species habitat, including rare plant and animal species; protection of recreation and open space; and protection of aesthetics. These presumptions may be overcome only upon a clear showing that the inland bank or beach does not play a role in protecting one or more of the wetland values given above.
- (c) **Definition** – Same as 310 CMR 10.54 (2) (a), (b) and (c).
- (d) **Performance Standards.** When an Inland Bank or Beach or land within a minimum distance of 100 feet of an Inland Bank and Beach is determined to be significant to a wetland value, the following regulations shall apply:
 - (1) A proposed project shall not cause any adverse effect or cumulative adverse effect upon the wetland values of Inland Bank or Inland Beach.
 - (2) A proposed project shall be permitted only if there is no adverse effect on bank stability, bank height, ground water and surface water quality, the water carrying capacity of an existing channel within a bank, and the capacity of the bank to provide habitat for fisheries and/or wildlife.
 - (3) Notwithstanding the above provisions, no project may be permitted which will have any adverse effect on specified habitat of rare vertebrate or invertebrate and rare plant species, as identified by procedures established under 310 CMR 10.59.
 - (4) Performance standards for activities or work proposed in the Buffer Zone to an Inland Bank or Inland Beach are specified in HWR Section 19.0.
 - (5) The Commission may impose such additional requirements as are necessary to protect the wetland values protected under the Bylaw.
 - (6) In a riverine situation, the Conservation Officer shall notify the following of any alteration or relocation of a watercourse:
 - i. Adjacent Communities, especially upstream and downstream
 - ii. Bordering States, if affected
 - iii. NFIP State Coordinator, Massachusetts Department of Conservation and Recreation
 - iv. NFIP Program Specialist, Federal Emergency Management Agency, Region I

18.2. Bordering and Isolated Vegetated Wetlands (Wet Meadows, Marshes, Swamps and Bogs)

- (a) **Preamble.** Bordering and Isolated Vegetated Wetlands are areas where ground water discharges to the surface and where, in some circumstances, surface water discharges to the ground water. The profusion of vegetation and the low, flat topography of vegetated wetlands slow down and reduce the passage of stormwater runoff and flood waters during periods of peak flows by providing temporary flood water storage, and by facilitating water removal through evaporation and transpiration. This reduces downstream flood crests, erosion, sedimentation, and resulting damage to private and public property. During dry periods the water retained in vegetated wetlands is essential to the maintenance of base flow levels in streams or into the groundwater which in turn is important to the protection of water quality, public and private water supplies, fisheries and wildlife.

Wetlands are important for the prevention of pollution. The plant communities, soils, and associated low, flat topography of vegetated wetlands remove or detain sediments, nutrients (such as nitrogen and phosphorus), bacteria and other microorganisms, and toxic substances such as heavy metal compounds) that occur in run-off and flood waters. Some nutrients and toxic substances are retained for years in plant root systems or in soils. Bordering vegetated wetlands in coastal areas act to filter out pollutants in flood waters and stormwater runoff, thereby protecting water quality and protecting shellfish beds in adjacent coastal Resource Areas. Bordering and isolated vegetated wetlands and their underlying peat provide a significant role in carbon sequestration. Disturbance of these wetlands can lead to significant carbon release to the atmosphere.

Wetlands provide critical fish and wildlife habitat. Isolated vegetated wetlands can provide critical vernal pool habitat and rare species habitat, just as Isolated Land Subject to Flooding (see HWR Section 18.5). Wetland vegetation provides shade that moderates water temperatures important to fish life. Vegetated wetlands that are always wet or that are flooded by adjacent water bodies and waterways provide food, breeding habitat and cover for fish. Fish populations in the larval stage are particularly dependent upon food provided by these wetlands since they provide large quantities of microscopic plant and animal food material. Wetland vegetation provides habitat for a wide variety of insects, reptiles, amphibians, mammals and birds. The degree of isolation from human-caused disturbances is a desirable and aesthetically pleasing feature of a vegetated wetland, which is a critical characteristic for the protection of wildlife. Many of these, particularly insects, are food sources for fish.

Vegetated wetlands, together with land within 100 feet of a vegetated wetland, serve to moderate and alleviate thermal shock and pollution resulting from runoff from impervious surfaces which may be detrimental to wildlife, fisheries, and shellfish downstream of the vegetated wetland. The maintenance of base flows by vegetated wetlands is significant to the maintenance of a proper salinity ratio in estuarine areas downstream of the vegetated wetland. A proper salinity ratio, in turn, is essential to the ability of shellfish to spawn successfully and for the continuing success of shellfisheries. A proper salinity ratio is also important for many species of fish.

Vegetated wetlands are excellent places for bird watching, and hunting, fishing, and other recreational activities and provide aesthetically pleasing areas for such activities. Some vegetated wetlands, particularly bogs, provide habitat for rare plants and animals. Vegetated wetlands along pond edges can prevent erosion by wind driven waves. Land within 100 feet of a vegetated wetland is considered

to be significant to the protection and maintenance of vegetated wetlands, and therefore to the protection of the wetland values of these Resource Areas.

- (b) Wetland Values and Presumption of Significance. Whenever a proposed project involves removing, filling, dredging, altering or building upon a vegetated wetland or within a minimum distance of 100 feet of a vegetated wetland, the Commission shall presume that the vegetated wetland is significant to the protection of the following wetland values: protection of public or private water supply; protection of groundwater; flood control; erosion and sedimentation control; storm damage prevention, including coastal storm flowage; prevention and abatement of water pollution; protection of fisheries; protection of shellfish; protection of wildlife and wildlife habitat; protection of rare species habitat, including rare plant and animal species; protection of recreation and open space; and protection of aesthetics. These presumptions may be overcome only upon a clear showing that the vegetated wetland does not play a role in protecting one or more of the wetland values given above.
- (c) Definition. Vegetated Wetlands are freshwater wetlands, including both bordering vegetated wetlands (i.e., bordering on freshwater bodies such as on creeks, rivers, streams, ponds and lakes, and bordering on coastal Resource Areas such as salt marshes and estuaries) and isolated vegetated wetlands which do not border on any permanent water body. The types of freshwater wetlands are wet meadows, marshes, swamps, bogs and vernal pools. Vegetated Wetlands are areas where soils are saturated and/or inundated such that they support a predominance of wetland indicator plants. The ground water and surface water hydrological regime, soils and the vegetational community which occur in each type of freshwater wetlands, including both bordering and isolated vegetated wetlands, are defined under the Bylaw based on M.G.L. c. 131 s. 40, and the Massachusetts Department of Environmental Protection Guidance for Delineating Bordering Vegetated Wetlands (1995).

The boundary of Vegetated Wetland, whether Bordering or Isolated, is the line within which 50% or more of the vegetational community consists of wetland indicator plants and saturated or inundated conditions exist. Wetland indicator plants shall include but not necessarily be limited to those plant species identified in the Act. Wetland indicator plants are also those classified in the indicator categories of Facultative, Facultative+, Facultative Wetland-, Facultative Wetland, Facultative Wetland+, or Obligate Wetland in the National List of Plant Species That Occur in Wetlands: Massachusetts Fish & Wildlife Service, U.S. Department of the Interior, 1988 or plants exhibiting physiological or morphological adaptations to life in saturated or inundated conditions.

The boundary shall be defined or delineated by the following:

- (1) Areas containing a predominance of wetland indicator plants are presumed to indicate the presence of saturated or inundated conditions. Therefore, the boundary as determined by 50% or more wetland indicator plants shall be presumed accurate when:
 - i. all dominant species have an indicator status or of obligate, facultative wetland+, facultative wetland, or facultative wetland- and the slope is distinct or abrupt between the upland plant community and the wetland plant community; or
 - ii. the Conservation Commission determines that sole reliance on wetland indicator plants will yield an accurate delineation.

- (2) When the boundary is not presumed accurate as described in HWR Section 18.2(1)(a-b) or to overcome the presumption, credible evidence shall be submitted by a competent source demonstrating that the boundary of Vegetated Wetlands is the line within which 50% or more of the vegetational community consists of wetland indicator plants and saturated or inundated conditions exist. The issuing authority must evaluate vegetation and indicators of saturated or inundated conditions if submitted by a credible source, or may require credible evidence of saturated or inundated conditions sufficient to support wetland indicator plants, which shall include one or more of the following: (a) groundwater, including the capillary fringe, within a major portion of the root zone; (b) observation of prolonged or frequent flowing or standing surface water; (c) characteristics of hydric soils.
 - (3) Where an area has been disturbed (e.g., by cutting, filling, or cultivation), the boundary is the line within which there are indicators of saturated or inundated conditions sufficient to support a predominance of wetland indicator plants, a predominance of wetland indicator plants, or credible evidence from a competent source that the area supported, or would support under undisturbed conditions, a predominance of wetland indicator plants prior to the disturbance or characteristic of hydric soils.
- (d) Performance Standards. When a Vegetated Wetland, whether Bordering or Isolated, or land within a minimum distance of 100 feet of a Vegetated Wetland is determined to be significant to a wetland value, the following regulations shall apply:
- (1) A proposed project shall not cause any adverse effect or cumulative adverse effect upon the wetland values of a Vegetated Wetland.
 - (2) Where an Isolated Vegetated Wetland meets the criteria for a vernal pool, whether or not it has been certified, as described in HWR Section 18.6. Except as authorized by the Commission, no activity or alteration shall be permitted within 100 feet of a vernal pool, whether it be certified or uncertified but accompanied by credible evidence of its viability as a vernal pool. The 100 feet around the defined vernal pool boundaries shall be known as “Vernal Pool Protection Zone”. A proposed project shall not cause any adverse effect or cumulate adverse effect upon the wetland values of vernal pool habitat.
 - (3) Notwithstanding the above provisions, no project may be permitted which will have any adverse effect on specified habitat of rare vertebrate or invertebrate and rare plant species, as identified by procedures established under 310 CMR 10.59.
 - (4) Filling
 - i. The Commission at its discretion may allow the filling of up to 2,500 square feet of Vegetated Wetland for a limited project (see HWR Section 5.4), if satisfied that mitigation required in the Order of Conditions is sufficient to protect the Resource Area. If filling is allowed, the Commission shall require replication of the wetland at a ratio of at least 2:1, in an area that is hydrologically suitable for supporting wetland functions, similar in type or function to the wetland being altered, hydrologically connected to the altered wetland, and must be accomplished by using wetland soils and by using native wetland plant species removed from the area to be filled. The replicated wetland must be established prior to

commencing the upland activity. The replicated wetland must be monitored for at least two growing seasons and must be maintained as a functional wetland with wetland values at least equaling those of the filled wetland for at least five years following the completion of the main project.

- ii. If filling is allowed, compatible fill shall be used. Compatible fill means clean sediment of a grain size that is approximately the same as the area being nourished (e.g., if the area being nourished consists of gravel, sand, silt or clay, then the fill brought in for nourishment should be gravel, sand, silt or clay). Clean means the sediment does not contain contaminants and is free of debris.
 - iii. The Commission is authorized to deny any filling of any Resource Area in order to protect the wetland values of the Resource Area.
- (5) Performance standards for activities or work proposed in the Buffer Zone to a Vegetated Wetland are specified in HWR Section 19.0.
 - (6) The Commission may impose such additional requirements as are necessary to protect the wetland values protected under the Bylaw.

18.3. Land Under Inland Water Bodies and Waterways - Rivers, Creeks, Streams, Ponds, Lakes, Ditches or Flats

- (a) Preamble. Where land under water bodies is composed of pervious material, such land represents a point of exchange between surface and groundwater. Depending upon the hydrological conditions and water levels at a given time, these areas may serve as recharge or discharge points, or both, with groundwater. An area may serve as recharge area at one season and a discharge point at another time. This allows pollutants and nutrients easy access into private wells or the general groundwater supply. The physical nature of land under water bodies is highly variable, ranging from deep organic and fine sedimentary deposits to gravel and large rocks. The organic soils and sediments play an important role in the process of detaining and removing dissolved and particulate nutrients from the surface water above. These also serve as traps for toxic substances (such as but not limited to heavy metal compounds).

Land under water bodies in conjunction with banks serves to confine floodwater within a definite channel during the most frequent storms. Filling within such a channel blocks flows which in turn causes backwater and overbank flooding during such storms. An alteration of land under water bodies that causes water to frequently spread out over a larger area at lower depth increases flooding. Additionally, it results in an elevation of water temperatures and decrease in habitat in the main channel, both of which are detrimental to fisheries and shellfish, particularly during periods of warm weather and low flows. It may also flood waterfowl nesting sites which otherwise would not be disturbed. Land under ponds and lakes is vital to a large assortment of warm water fish during spawning periods. Species such as large-mouth bass (*Micropterus salomoides*), small-mouth bass (*Micropterus dolomieu*), blue gills (*Lepomis macrochirus*), pumpkinseeds (*Lepomis gibbosus*), black crappie (*Pomoxis nigromaculatus*), and rock bass (*Ambloplites rupestris*) build nests on the lake and bottom substrates within which they shed and fertilize their eggs. Land within 100 feet of any bank

abutting land under a water body is significant to the protection of the values which these water bodies serve to protect.

Characteristics of water bodies which are critical to protection of wildlife and fisheries include water circulation and flushing rates, distribution of sediment grain size, water quality (including concentrations of dissolved oxygen, turbidity, nutrients, temperature, and pollutants). Leaving ponds and the land bordering ponds in an unobstructed state may be important to recreational swimming, fishing, and boating. Water bodies and the area around them also provide other recreational opportunities such as hunting and wildlife observation. Vegetated borders of large ponds are important in reducing shoreline erosion and storm damage by dissipating the high energy of storm waves and by anchoring the sediments. Water bodies provide important feeding and/or drinking areas for many types of aquatic and terrestrial wildlife including but not limited to reptiles, amphibians, birds and mammals. Ponds and other water bodies provide habitat for many species of invertebrates including but not limited to insects and crustaceans that serve as food for several species of birds and bats. Ducks, geese, swans, herons, and other water fowl all use water bodies and surrounding borders for feeding, shelter, and/or nesting areas. Many other birds, reptiles and amphibians use land under water bodies, water bodies, and the borders of water bodies for parts of their life cycles. Such areas may be suitable for aquaculture of fresh or brackish aquatic plants or animals. Changes in sediments, water quality, water level, or species composition of food sources or ground cover may be detrimental to any of the above wildlife and to any rare species of plants or animals which occur in water bodies.

Ponds and the land surrounding them often provide important aesthetic wetland scenic views, particularly when they are in a natural condition. Ponds provide recreational swimming, boating, fishing, shellfishing, and sightseeing opportunities. The enclosed area and limited size of most fresh water bodies in the Town of Hingham make them particularly sensitive to pollution or nutrient inputs. These inputs can change the plant and animal species composition of the water body and thus can be detrimental to fish and wildlife. Bioaccumulation of pollutants through food webs can also create dangerous levels of pollutants or toxins for wildlife and humans. Groundwater may also be adversely affected. Surrounding vegetation, especially native species, serves to protect ponds from overland runoff of pollutants. Bordering trees and vegetation provide shade that helps maintain cool water temperatures in ponds.

- (b) Wetland Values and Presumption of Significance. Whenever a proposed project involves removing, filling, dredging, altering or building upon water bodies or the land beneath them or land within a minimum distance of 100 feet from such land, the Commission shall presume that the water bodies and the land beneath them are significant to the protection of the following wetland values: protection of public or private water supply; protection of groundwater; flood control; erosion and sedimentation control; storm damage prevention, including coastal storm flowage; prevention and abatement of water pollution; protection of fisheries; protection of shellfish; protection of wildlife and wildlife habitat; protection of rare species habitat, including rare plant and animal species; protection of recreation and open space; protection of aquaculture; and protection of aesthetics. These presumptions may be overcome only upon a clear showing that the water body or the land beneath it does not play a role in protecting one or more of the wetland values given above.
- (c) Definition – Same as 310 CMR 10.56(2) with the following addition: The term “pond” shall include any open body of fresh water with a surface area observed or recorded within the last ten years of at

least 5,000 square feet. Ponds shall contain standing water except for periods of extended drought as determined by the standards of the Massachusetts Department of Environmental Protection.

- (d) Performance Standards. When Land Under an Inland Water Body or land within a minimum distance of 100 feet of Land Under an Inland Water Body is determined to be significant to a wetland value, the following regulations shall apply:
- (1) Proposed work shall not cause a significant adverse effect or cumulative adverse effect upon the wetland values of Land Under an Inland Water Body.
 - (2) Notwithstanding the above provisions, no project may be permitted which will have any adverse effect on specified habitat of rare vertebrate or invertebrate species or rare plant species, as identified by procedures established under 310 CMR 10.59.
 - (3) Performance standards for proposed work or activities within the Buffer Zone to Land Under an Inland Water Body are specified in HWR Section 19.0.
 - (4) In a riverine situation, the Conservation Officer shall notify the following of any alteration or relocation of a watercourse:
 - i. Adjacent Communities, especially upstream and downstream
 - ii. Bordering States, if affected
 - iii. NFIP State Coordinator, Massachusetts Department of Conservation and Recreation
 - iv. NFIP Program Specialist, Federal Emergency Management Agency, Region I
 - (5) The Commission may impose such additional requirements as are necessary to protect the wetland values protected under the Bylaw.

18.4. Bordering Land Subject to Flooding

- (a) Preamble. Bordering land subject to flooding provides a temporary storage area for floodwater, which has overtopped the bank of the main channel of a creek, river, or stream or the basin of a pond or lake. During periods of peak stormwater run-off, flood waters are both retained (i.e., slowly released through evaporation and percolation) and detained (slowly released through surface discharge). Over time, incremental filling of these areas causes displacement of flooding effects and increases the extent and level of flooding by eliminating flood storage volume or by restricting flows, thereby causing increases in damage to public and private properties due to flooding and erosion. Pollutants or contaminants located on bordering land subject to flooding may be washed into surface waters and subsequently into ground water, or percolate directly into ground water. Sources of pollutants within these areas will have widespread effect on wetland values.

Bordering land subject to flooding provides an important source of microscopic plant and animal material which enriches the nearby water body and serves as the basis for a food web which supports fish and wildlife. Bordering land subject to flooding provides important wildlife habitat and wildlife access to surface water resources. Bordering land subject to flooding is often low and level and thus

helps prevent erosion of soil into water bodies due to surface water run-off. The topography and location of bordering land subject to flooding is critical for protection of flood control capabilities.

The degree of isolation from human-caused disturbances is a desirable feature of Bordering Land Subject to Flooding, which is a critical element for the protection of wildlife, rare plant and animal species. Bordering Land Subject to Flooding is aesthetically attractive in a natural condition and provides opportunities for passive recreational activities such as hiking, wildlife-viewing, or bird watching. Wetland Values and Presumption of Significance. Whenever a proposed project involves removing, filling, dredging, altering or building upon Bordering Land Subject to Flooding, the Commission shall presume that the land is significant to the protection of the following wetland values: protection of public or private water supply; protection of groundwater; flood control; erosion and sedimentation control; storm damage prevention, including coastal storm flowage; prevention and abatement of water pollution; protection of fisheries; protection of wildlife and wildlife habitat; protection of rare species habitat, including rare plant and animal species; protection of recreation and open space, protection of agriculture; and protection of aesthetics. These presumptions may be overcome only upon a clear showing that Bordering Land Subject to Flooding does not play a role in protecting one or more of the wetland values given above.

(b) Definitions – Same as 310 CMR 10.57 (2).

(c) Performance Standards. When a Bordering Land Subject to Flooding is determined to be significant to a wetland value, the following regulations shall apply:

- (1) A proposed project shall not cause any adverse effect or cumulative adverse effect on the wetland values of Bordering Land Subject to Flooding.
- (2) Projects on Bordering Land Subject to Flooding shall be permitted only in connection with such procedures determined by the Commission as not having the effect of reducing the ability of the land to absorb and contain floodwaters.
- (3) The Commission may require compensatory, or greater, flood storage capacity in the same watershed if it permits any filling of Bordering Land Subject to Flooding, and all filling of areas subject to flooding shall be strictly minimized. Except as stated in the preceding sentence, no proposed projects shall be permitted to displace or direct floodwaters, through fill or other means, to other areas.
- (4) Notwithstanding the above provisions, no project may be permitted which will have any adverse effect on specified habitat of rare vertebrate or invertebrate and rare plant species, as identified by procedures established under 310 CMR 10.59.
- (5) In Zones A, A1-30, and AE, along watercourses that have not had a regulatory floodway designated, the best available Federal, State, local, or other floodway data shall be used to prohibit encroachments in floodways which would result in any increase in flood levels within the community during the occurrence of the base flood discharge.
- (6) In Zones A1-30 and AE, along watercourses that have a regulatory floodway designated on the Town's/City's FIRM or Flood Boundary & Floodway Map (choose map which delineates floodways for your community) encroachments are prohibited, including fill, new construction,

substantial improvements, and other development within the adopted regulatory floodway unless it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed encroachment would not result in any increase in flood levels within the community during the occurrence of the base flood discharge.

- (7) All subdivision and development proposals must be designed and reviewed to assure that:
 - i. Such proposals minimize flood damage;
 - ii. All public utilities and facilities are located and constructed to minimize or eliminate flood damage; and
 - iii. Adequate drainage is provided to reduce exposure to flood hazards.
- (8) When proposing subdivisions or other developments greater than 50 lots or 5 acres, whichever is less, the proponent must provide technical data to determine base flood elevations for each developable parcel shown on the design plans.
- (9) The Commission may impose such additional requirements as are necessary to protect the wetland values protected under the Bylaw.

18.5. Isolated Land Subject to Flooding

- (a) Preamble. Isolated land subject to flooding provides a temporary storage area where run-off and high ground water collects and slowly evaporates or percolates into the ground. These areas, often small, are usually numerous and thus very important in preventing more serious flooding somewhere else. Filling causes lateral displacement of ponded water or increased run-off onto contiguous properties, which may result in damage to those properties or other properties which were not significantly affected. The additive nature of the flood protection provided by Isolated Land Subject to Flooding and the fact that filling one may redirect water so as to radically change watershed sizes means that small changes in one area may have a direct impact on another area. Isolated Land Subject to Flooding helps prevent erosion by breaking up watersheds so that run-off does not become so great as to have enough force to erode soil.

Areas where the Isolated Land Subject to Flooding is pervious are likely to serve as significant recharge points to the ground water. Contamination in these areas may easily migrate into ground water and neighboring wells. Isolated Land Subject to Flooding which is covered by a mat of organic peat or muck may help remove contaminants before the flood water enters the ground water.

Isolated Land Subject to Flooding may provide important habitat for amphibians, particularly during their breeding period, and some rare species. It may also provide important habitat for wildlife and in particular waterfowl. The degree of isolation from human-caused disturbances is a desirable feature of Land Subject to Flooding, which is a critical element for the protection of wildlife, rare plant and animal species. Isolated Land Subject to Flooding is aesthetically attractive in a natural condition and provides opportunities for passive recreational activities such as hiking, wildlife-viewing, or bird watching. Land within 100 feet of Isolated Land Subject to Flooding is significant to the protection

and maintenance of Isolated Land Subject to Flooding and therefore to the wetland values of this land.

- (b) Wetland Values and Presumption of Significance. Whenever a proposed project involves removing, filling, dredging, altering or building upon Isolated Land Subject to Flooding or within a minimum distance of 100 feet of such land, the Commission shall presume that the land is significant to the protection of the following wetland values: protection of public or private water supply; protection of groundwater; flood control; erosion and sedimentation control; storm damage prevention, including coastal storm flowage; prevention and abatement of water pollution; protection of fisheries; protection of wildlife and wildlife habitat; protection of rare species habitat, including rare plant and animal species; protection of recreation and open space, protection of agriculture; and protection of aesthetics. These presumptions may be overcome only upon a clear showing that Isolated Land Subject to Flooding does not play a role in protecting one or more of the wetland values given above. Isolated Land Subject to Flooding is protected under the Hingham Wetlands Protection Bylaw.
- (c) Definitions – Same as 310 CMR 10.57 (2) with the following addition: The term “Isolated Land Subject to Flooding” shall be included and shall be defined as an area, depression, or basin that holds at minimum one-sixteenth acre-foot of water and at least six inches of standing water once a year. The Buffer Zone for Isolated Land Subject to Flooding shall extend 100 feet from the highest extent of flooding.
- (d) Performance Standards. When an Isolated Land Subject to Flooding, or land within a minimum distance of 100 feet of Isolated Land Subject to Flooding is determined to be significant to a wetland value, the following regulations shall apply:
 - (1) A proposed project shall not cause any adverse effect or cumulative adverse effect on the wetland values of Isolated Land Subject to Flooding.
 - (2) Projects on Isolated Land Subject to Flooding shall be permitted only in connection with such procedures determined by the Commission as not having the effect of reducing the ability of the land to absorb and contain floodwaters.
 - (3) The Commission may require compensating or greater flood storage capacity in the same watershed if it permits any filling of Isolated Land Subject to Flooding, and all filling of areas subject to flooding shall be strictly minimized. Except as stated in the preceding sentence, no proposed projects shall be permitted to displace or direct floodwaters, through fill or other means, to other areas.
 - (4) Notwithstanding the above provisions, no project may be permitted which will have any adverse effect on specified habitat of rare vertebrate or invertebrate and rare plant species, as identified by procedures established under 310 CMR 10.59.
 - (5) Performance standards for activities or work proposed in the Buffer Zone to Isolated Land Subject to Flooding are specified in HWR Section 19.0.
 - (6) The Commission may impose such additional requirements as are necessary to protect the wetland values protected under the Bylaw.

18.6. Vernal Pools

- (a) Preamble. Vernal Pools and land within 100 feet of Vernal Pools are likely to be significant to the protection of wildlife habitat and rare plant and animal habitat. Vernal Pools constitute a unique and increasingly rare type of wetland that is inhabited by many species of wildlife, some of which are completely dependent on Vernal Pools and their associated habitat for their survival. Areas in the immediate vicinity of the Vernal Pool (i.e., 100-foot Buffer Zone) provide these species with important non-breeding habitat functions, such as migratory pathways, feeding, shelter, and over-wintering sites. Many other species utilize Vernal Pools and their associated Buffer Zone for breeding and non-breeding functions, although such species are not limited to this type of wetland. The protection of Vernal Pools and their associated Buffer Zone are essential for the survival of wildlife species that depend on these unique and threatened Resource Areas. Vernal Pools need not be state certified to be protected under the Bylaw or these Regulations.

The extreme edges of Vernal Pool habitat represent one of the most ecologically valuable portions of these habitats. Shallow water at the edges of a pool generally is the first to thaw in the spring. This provides early access to the pool for the earliest breeding species. The shallow water zones also tend to be significantly warmer than the deeper portions of a vernal pool throughout the spring. Egg masses of early breeding amphibians benefit from the warmer water temperatures at the pool edges that promote rapid egg development.

- (b) Wetland Values and Presumption of Significance. Whenever a proposed project involves removing, filling, dredging, altering or building upon Vernal Pool or within a minimum distance of 100 feet of such land, the Commission shall presume that the land is significant to the protection of the following wetland values: protection of wildlife and wildlife habitat; and protection of rare species habitat, including rare plant and animal species. These presumptions may be overcome only upon a clear showing that the Vernal Pool does not play a role in protecting one or more of the wetland values given above.
- (c) Definitions – Same as 310 CMR 10.57 (2) with the following addition: The term “Vernal Pool” shall be included and shall be defined as any confined basin or depression not occurring in existing lawns, gardens, landscaped areas, or driveways which, at least in most years, holds water for a minimum of two continuous months during the spring and/or summer, is free of adult fish populations, and provides essential breeding and rearing habitat functions for amphibian, reptile, or vernal pool community species, regardless of whether the wetland site has been certified as a Vernal Pool by the Massachusetts Division of Fisheries and Wildlife and Fisheries. The Buffer Zone for Vernal Pools shall extend 100 feet from the mean annual high-water line defining the depression. The 100-foot zone around the defined Vernal Pool boundary shall be known as “Vernal Pool Protection Zone.”
- (d) Performance Standards. When a Vernal Pool, or land within a distance of 100 feet of a Vernal Pool is determined to be significant to a wetland value, the following regulations shall apply:
- (1) A proposed project shall not cause any adverse effect or cumulative adverse effect on the wetland values of a Vernal Pool.

- (2) Except as authorized by the Commission, no activity or alteration shall be permitted within the Vernal Pool Protection Zone, whether it be certified or uncertified but accompanied by credible evidence of its viability as a Vernal Pool.
- (3) Projects shall not have any adverse effect on Vernal Pools, whether certified or uncertified, provided such wetlands meet the physical and biological requirements for certification as described in the Massachusetts Division of Fisheries and Wildlife 1988 Guidelines for Certification of Vernal Pools. The Commission may require more than the minimum protective undisturbed buffer strip.
- (4) Notwithstanding the above provisions, no project may be permitted which will have any adverse effect on specified habitat of rare vertebrate or invertebrate and rare plant species, as identified by procedures established under 310 CMR 10.59.
- (5) Performance standards for activities or work proposed in the Buffer Zone to Vernal Pool are specified in HWR Section 19.0.
- (6) The Commission may impose such additional requirements as are necessary to protect the wetland values protected under the Bylaw.

18.7. Riverfront Area

- (a) Preamble. Riverfront Areas are likely to protect private or public water supply, protect groundwater, provide flood control, provide erosion and sedimentation control, provide storm damage prevention, prevent pollution, protect land containing shellfish, provide wildlife and wildlife habitat, protect fisheries, provide rare species habitat where rare species occur, and provide recreational and aesthetic values. Land adjacent to rivers and streams can protect the natural integrity of these water bodies. The presence of natural vegetation within Riverfront Areas is critical to sustaining rivers as ecosystems and providing these public values. The Riverfront Area can prevent degradation of water quality by filtering sediments, toxic substances (such as heavy metals), and nutrients (such as phosphorus and nitrogen) from stormwater, nonpoint pollution sources, and the river itself. Sediments are trapped by vegetation before reaching the river. Nutrients and toxic substances may be detained in plant root systems or broken down by soil bacteria.

Riverfront Areas can trap and remove disease-causing bacteria that otherwise would reach rivers and coastal estuaries where they can contaminate shellfish beds and prohibit safe human consumption. Natural vegetation within the riverfront area also maintains water quality for fish and wildlife. Where rivers serve as water supplies or provide induced recharge to wells; the riverfront area can be important to the maintenance of drinking water quality and quantity. Land along rivers in its natural state with a high infiltration capacity increases the yield of a water supply well. When Riverfront Areas lack the capacity to filter pollutants, contaminants can reach human populations served by wells near rivers or by direct river intakes. The capacity of Riverfront Areas to filter pollutants is equally critical to surface water supplies, reducing or eliminating the need for additional treatment. In the watershed, mature vegetation within Riverfront Areas provides shade to moderate water temperatures and slow algal growth, which can produce odors and taste problems in drinking water.

Within Riverfront Areas, surface water interaction with groundwater significantly influences the stream ecosystem. The dynamic relationship between surface and groundwater within the “hyporheic zone” sustains communities of aquatic organisms which regulate the flux of nutrients, biomass and the productivity of organisms including fish within the stream itself. The hyporheic zone extends to greater distances horizontally from the channel in large, higher order streams with alluvial floodplains, but the interaction within this zone is important in smaller streams as well.

By providing recharge and retaining natural flood storage, as well as by slowing surface water runoff, Riverfront Areas can mitigate flooding and damage from storms. The root systems of riverfront vegetation keep soil porous, increasing infiltration capacity and preventing erosion. Vegetation also removes excess water through evaporation and transpiration. This removal of water from the soil allows for more infiltration when flooding occurs. Increases in storage of floodwaters can decrease peak discharges and reduce storm damage. Vegetated riverfronts also dissipate the energy of storm flows, reducing damage to public and private property.

Riverfront Areas are critical to maintaining thriving fisheries. Maintaining vegetation along rivers provides shading, promotes fish cover, increases food and oxygen availability, decreases sedimentation, and provides spawning habitat. Maintenance of water temperatures and depths is critical to many important fish species. When groundwater recharges surface water flows, loss of recharge as a result of impervious surfaces within the riverfront area may aggravate low flow conditions and increase water temperatures. In some cases, summer stream flows are maintained almost exclusively from groundwater recharge. Small streams are most readily impacted by removal of trees and other vegetation along the shore.

Riverfront Areas are important wildlife habitat, providing food, shelter, breeding, nesting, migratory, and overwintering areas for wildlife and for rare species where they occur. Even some predominantly upland species use and may be seasonally dependent on Riverfront Areas. Riverfront Areas promote biological diversity by providing habitats for an unusually wide variety of upland and wetland species, including several species of egrets and herons, Bald Eagles, Osprey, and Belted Kingfishers. Large dead trees provide nesting sites for bird species that typically use the same nest from year to year. Sandy areas along rivers may serve as nesting sites for turtles and water snakes. Riverfront Areas provide food for species such as wood turtles which feed and nest in uplands but use rivers as resting and overwintering areas. Riverfront Areas provide corridors for the migration of wildlife for feeding or breeding. Loss of this connective function, from activities that create barriers to wildlife movement within Riverfront Areas, results in habitat fragmentation and causes declines in wildlife populations. Wildlife must also be able to move across Riverfront Areas, between uplands and the river.

Vernal pools are frequently found within depressions in Riverfront Areas. These pools are essential breeding sites for certain amphibians and obligate and facultative vernal pool species of plants and animals which require isolated, seasonally wet areas without predator fish. Some vernal pool species, particularly amphibians, require areas of undisturbed woodlands as upland habitat during the non-breeding seasons. Some species require continuous woody vegetation between woodland habitat and the breeding pools. Depending on the species, during non-breeding seasons these amphibians may remain near the pools or travel one-fourth mile or more from the pools. Reptiles, especially turtles,

often require areas along rivers to lay their eggs. Since amphibians and reptiles are less mobile than mammals and birds, maintaining integrity of their habitat is critical.

Riverfront Areas in a natural condition are aesthetically valuable and offer opportunities for recreational fishing, hunting, canoeing and kayaking, camping, swimming and other recreational activities. In those portions so extensively altered by human activity that their important wildlife habitat functions have been effectively eliminated, Riverfront Areas are not significant to the protection of important wildlife habitat and vernal pool habitat.

- (b) **Wetland Values and Presumption of Significance.** Whenever a proposed project involves removing, filling, dredging, altering or building upon a Riverfront Area, the Commission shall presume that the land is significant to the protection of the following wetland values: protection of public or private water supply; protection of groundwater; flood control; erosion and sedimentation control; storm damage prevention, including coastal storm flowage; prevention of water pollution; protection of fisheries; protection of shellfish; protection of wildlife and wildlife habitat; protection of rare species habitat, including rare plant and animal species; protection of recreation; and protection of aesthetics. These presumptions may be overcome only upon a clear showing that the Riverfront Area does not play a role in protecting one or more of the wetland values given above.
- (c) **Definition – Same as 310 CMR 10.58(2).**
 - (1) The Inner Riparian Zone is the area from 0 – 100 feet from the river’s mean annual high-water line; and the Outer Riparian Zone is the area from 100 – 200 feet from the river’s mean annual high-water line.
 - (2) A river is any natural flowing body of water that empties to any ocean, lake, pond, other river, stream or wetland and which flows throughout the year. Perennial rivers, streams and creeks are rivers; intermittent streams are not. Notwithstanding 310 CMR 10.58, the burden of proof shall be on any applicant to show that a river, stream or creek is not perennial (i.e., is intermittent).
 - (3) For any river or stream that is tidally influenced, the Commission shall use the DEP mouth of the river designation line.
 - (4) The mean annual high-water line from which the Riverfront Area is drawn shall be as defined in the WPA regulations at 310 CMR 10.58(2)(a)2.
- (d) **Performance Standards.** When a Riverfront Area is determined to be significant to a protected value, the following regulations shall apply:
 - (1) Except as stated below, the Commission hereby incorporates 310 CMR 10.58(4) and 10.58(5) in its regulations for all matters related to Bylaw jurisdiction in lands within 200 feet of rivers and perennial streams.
 - (2) Notwithstanding the provisions in 310 CMR 10.58(6), the Commission shall require prior review under an RDA or Administrative Review for all activities within Riverfront Area that otherwise exempted under the WPA.

- (3) Notwithstanding the above provisions, no project may be permitted which will have any adverse effect on specified habitat of rare vertebrate or invertebrate and rare plant species, as identified by procedures established under 310 CMR 10.59.
- (4) The Commission may impose such additional requirements as are necessary to protect the wetland values protected under the Bylaw.

19.0 BUFFER ZONE

- (a) Preamble. The 100-foot Buffer Zone to Resource Areas specified in the Bylaw and in HWR Section 2.0(a)(5) provides critical protection for Resource Areas. Most human activities likely to come under the review of the Commission take place in the Buffer Zone. Adverse effects to Resource Area buffers are likely to have an adverse effect and cumulative adverse effect on the wetland values. A Buffer Zone in a naturally vegetated condition can act like wetlands in removing nitrogen and phosphorus from entering receiving waters by serving as sinks, filters and transformers of suspended and dissolved nutrients. A buffer can remove 50-100% of sediments via filtration through natural organic litter. Absorption of ground water via mature trees can take up 14 times more water than an equivalent area of grass. Bank and stream channel stability is dependent on the anchoring ability of root systems and slowing of runoff velocity and flow diffusion provided by the buffer. Vegetation in the buffer can act to moderate water column temperatures and levels of dissolved oxygen. The higher the water temperature is, the more deleterious the effects of release of nutrients (such as, but not limited to, phosphorus and nitrogen) from sediments are. As nutrient concentrations in water increase, the likelihood of algal blooms and eutrophication increases, resulting in lower oxygen levels. The buffer provides corridors and connector and dispersal routes for wildlife, as well as habitat for breeding, nesting, development, feeding, basking, cover, hibernation, aestivation, and migratory activities.

Buffers reduce the adverse effects of adjacent land uses on wetlands. Buffers reduce wetland impacts by moderating impacts of stormwater runoff including stabilizing soil to prevent erosion; filtering suspended solids, nutrients, and harmful or toxic substances; and moderating water level fluctuations. Buffers help to prevent water pollution and protect public or private water supplies. They reduce the adverse impacts of human disturbance on wetland habitat including blocking noise and glare; reducing sedimentation and nutrient input; reducing direct human disturbance from dumped debris, cut vegetation, and trampling; increasing ecological climate resilience; and providing visual separation. They also provide essential habitat for wetland-associated species for use in feeding; roosting; breeding and rearing of young; and cover for safety, mobility and thermal protection. Wetlands with important functions and values or wetlands which are sensitive to disturbance will require greater buffers to reduce the risk of disturbance. Wetland functions, values, and sensitivity are attributes that will influence the necessary level of protection for wetlands. Where wetland systems are rare or irreplaceable (e.g., high quality estuarine wetlands, mature swamps, and bogs) larger buffer widths will ensure a lower risk of disturbance.

Uplands immediately adjacent to wetlands vary in their ability to reduce adverse effects of development, most importantly in relationship to slope and vegetative cover. Buffers with dense vegetative cover on slopes less than 15% are most effective for protection of water quality. Dense shrub or forested vegetation with steep slopes provides the greatest protection from direct human

disturbance. Appropriate vegetation for wildlife habitat depends on wildlife species present in the wetland and buffer. Effectiveness is also influenced by ownership of the buffer.

Land uses associated with significant construction and post-construction impacts need greater buffers. Construction impacts include erosion and sedimentation, debris disposal, vegetation removal and noise. Post-construction impacts are variable depending on the land use, but residential land use, in particular, can have significant impacts. Residential land use is associated with yard maintenance debris, domestic animal predation, removal of vegetation and trampling, nitrogen and phosphorus loading, and excessive herbicide and pesticide application. Buffers in a natural condition are aesthetically and economically valuable. Buffers provide recreational opportunities for hunting, fishing, walking, photography and other recreational activities. Buffer effectiveness increases as buffer width increases. As buffer width increases, the effectiveness of removing sediments, nutrients, bacteria, and other pollutants from surface water runoff increases. However, for incrementally greater sediment removal efficiency (e.g., from 90 to 95%), disproportionately larger buffer width increases are required. As buffer width increases, direct human impacts, such as dumped debris, cut or burned vegetation, fill areas, and trampled vegetation, will decrease. As buffer width increases, the numbers and types of wetland-dependent and wetland-related wildlife that can depend on the wetland and buffer for essential life needs increases. Appropriate buffer widths vary according to the desired buffer function(s). Temperature moderation, for example, will require smaller buffer widths than some wildlife habitat or water quality functions. Buffer widths for wildlife may be generalized, but specific habitat needs of wildlife species depend on individual habitat requirements. Buffers of less than 100 feet in width are generally ineffective in protecting wetlands and water bodies. A buffer is necessary to protect a wetland from direct human disturbance in the form of human encroachment (including, but not limited to, foot traffic, trampling, debris, noise). The appropriate width to prevent direct human disturbance depends on the type of vegetation, the slope, and the adjacent land use. Some wetlands are more sensitive to direct disturbance than others. In some cases, buffers greater than 100 feet may be necessary to protect wetland values.

To retain wetland-dependent wildlife in important wildlife areas, buffers need to retain plant structure for the maximum distance allowed by the Bylaw. This is especially true where open water exists or where the wetland is used extensively by migratory or overwintering species including birds or rare species. The buffer width needed would depend upon disturbance from adjacent land use and resources involved. Priority species may need even larger buffers to prevent their loss due to disturbance or isolation of subpopulations.

Notwithstanding the critical importance of the Buffer Zone for protection of Resource Area values, there may be some minor or temporary work or activities which may have no adverse effect or cumulative adverse effect upon the wetland values. Such work or activities may be allowable within the outer portion of the Buffer Zone, provided the Commission finds that there is no adverse effect or cumulative adverse effect upon the wetland values.

- (b) Wetland Values and Presumptions of Significance. The Buffer Zone is significant to the wetland values of the Resource Area which it borders. In addition, where rare species or Vernal Pools occur in the Buffer Zone, the Buffer Zone itself is significant for protection of rare species, rare species habitat, vernal pool organisms, and vernal pool habitat, respectively. Where a project involves removing, building upon, degrading, or otherwise altering a Resource Area buffer adjacent to a

Resource Area specified in HWR Section 2.0(a)(1-4), the Commission shall presume that such area is significant to, or will have a cumulative effect upon, the following wetland values: protection of public or private water supply; protection of groundwater; flood control; erosion and sedimentation control; storm damage prevention, including coastal storm flowage; prevention of water pollution; protection of fisheries, protection of wildlife and wildlife habitat; protection of rare species habitat, including rare plant and animal species; protection of recreation; and protection of aesthetics. This presumption may be overcome upon a clear showing that said land does not play a role in protecting one or more wetland values given above.

If the Resource Area buffer is not present (i.e., has already been altered and/or encroached upon), the Commission shall presume that there already exists a significant adverse effect or cumulative adverse effect upon the wetland values of the Resource Area. This presumption may be overcome upon a clear showing that there is no significant or cumulative effect to the protection of said wetland values.

- (c) Definition. The Buffer Zone is the area within a horizontal distance of 100 horizontal feet from the boundary of any area specified in HWR Section 2.0(a)(1-4). There is no Buffer Zone for Land Subject to Coastal Storm Flowage, Bordering Land Subject to Flooding, or Riverfront Area.. The buffer width shall be measured horizontally in a landward direction from the Resource Area boundary as surveyed in the field.
- (d) Performance Standards.

Prior to permitting activities in the Buffer Zone, the Commission shall consider the magnitude of the alteration, the significance of the project site to the values identified in HWR Section 19.0(b), the extent to which impacts have been avoided or minimized, and the extent to which mitigation measures, including Buffer Zone restoration, are provided to contribute to the protection of the values identified in HWR Section 19.0(b). No work shall be permitted unless the applicant has demonstrated to the Commission that there are no feasible alternatives with less impact to the Buffer Zone and adjacent Resource Areas. When the Buffer Zone is determined to be significant to a wetland value, the following regulations shall apply:

- (1) All structures and activities proposed within the Buffer Zone shall be located as far away as possible from the Resource Area boundary, in order to protect the wetland values of Resource Area.
- (2) Except as otherwise specified, the Buffer Zone shall be retained and maintained in a naturally vegetated condition. Where buffer disturbance has occurred during construction, revegetation with native vegetation may be required.
- (3) 50-foot No-Disturbance Area
 - i. Except as authorized by the Commission, no activity or alteration shall be permitted within the first (50) feet of the Buffer Zone, measured horizontally from the boundary of a Resource Area specified in HWR Section 2.0(a)(1-4). Prohibited activities shall include, but are not limited to, the following: (1) new construction of any buildings, decks, in-ground and above-ground swimming pools, sheds and/or driveways of any nature or type (except water dependent structures expressly approved by the Commission); (2) expansion

of existing buildings, sheds and/or driveways of any nature or type; and (3) activities which involve or result in the removal, filling or altering of land within the Buffer Zone, including vegetation removal and grading.

- ii. Where the No-Disturbance Area has been previously disturbed or developed, the Commission may allow, at its discretion, replacement of existing lawfully located structures within the same footprint. The Commission shall consider the extent of the existing development in its review of subsequent proposed work and may require restoration of the area to protect the interests of the Bylaw. Restoration may include planting native vegetation, grading, correcting site drainage, removing debris, or other measures which will improve, restore, and protect the wetland values of the Resource Area (see mitigation guidelines at HWR Section 19.0(e)(5).

(4) 100-foot No-Disturbance Area for Vernal Pools

Except as authorized by the Commission, no activity or alteration shall be permitted within 100 feet of a Vernal Pool, whether the Vernal Pool is certified or uncertified but accompanied by credible evidence of its viability as a Vernal Pool.

(5) 50 to 100-foot Limited-Disturbance Area

The Commission may allow, at its discretion, limited disturbance within 50 to 100 feet measured horizontally from the boundary of a Resource Area specified in HWR Section 2.0(a)(1-4), provided the proposed work does not fall within an area mapped as rare or significant habitat; does not border on an outstanding resource area; provides erosion and sediment controls; meets the setback requirements specified in HWR Section 19.0(d)(7); and improves Resource Area values by restoring the Buffer Zone as specified in HWR Section 19.0(e).

(6) Additional Restrictions and Setbacks

The following table summarizes the minimum setback distances, measured horizontally from the boundary of a Resource Area specified in HWR Section 2.0(a)(1-4), that shall apply between the activity or structure listed and the boundary of any area specified in HWR Section 2.0(a)(1-4):

Structure or Activity	Minimum setback distance from the boundary of any area specified in Section 2.0(a)(1-4)
Residential buildings and accessory structures, including but not limited to buildings, garages, sheds, breezeways, porches, and decks	50 ft.
Swimming pools and hot tubs (both below and above ground)	50 ft.
Sports courts, including but not limited to tennis, basketball, and pickleball courts	50 ft.
Driveways, roads, parking areas, any paved or gravel area to be used for storage, transport, or repair of motor vehicles	50 ft.
Clear cutting or grading and/or filling	50 ft.
New lawns	50 ft.

Structure or Activity	Minimum setback distance from the boundary of any area specified in Section 2.0(a)(1-4)
Underground storage tanks for gasoline, oil, or other fuels or hazardous materials	50 ft.
Commercial and industrial buildings and accessory structures	75 ft.
New construction of underground storage tanks for gasoline, oil, or other fuels or hazardous materials	100 ft.
All components of a new or enlarged septic system	100 ft.

- (7) Notwithstanding the above provisions, no project may be permitted which will have any adverse effect on specified habitat of rare vertebrate or invertebrate and rare plant species, as identified by procedures established under 310 CMR 10.37 for Coastal Resource Areas or 310 CMR 10.59 for Inland Resource Areas.
- (8) The Commission may impose such additional requirements as are necessary to protect the wetland values protected under the Bylaw.

(e) Mitigation

- (1) The Commission requires mitigation or restoration for activities resulting in new alterations in the Buffer Zone. Mitigation is required when the existing area to be altered is a pervious surface, such as lawn, landscape beds, areas with naturally occurring rocks or vegetation, etc., as defined in HWR Section 6.0. Mitigation is not required when the existing area to be altered is an impervious surface, as defined in HWR Section 6.0. Mitigation is not generally required for fences.
- (2) No mitigation is sufficient to allow a pool or sports court less than 50 feet to a Resource Area, as defined in HWR Section 2.0(a)(1-4).
- (3) Applicants shall provide summary calculations of the existing and proposed conditions by surface type, within the 0-50 foot and 50-100 foot areas of the Buffer Zone.
- (4) Mitigation shall be required as follows:

Work Location in Buffer Zone	Proposed Alteration	Mitigation Required (to Altered Area)
Within 0-50 feet Buffer Zone	Pervious surface	1:1 mitigation
	Impervious surface	2:1 mitigation
Within 50-100 feet Buffer Zone	Pervious surface	No mitigation required
	Impervious surface	1:1 mitigation
Within 0-100 feet Buffer Zone of Vernal Pool	Impervious or pervious surface	2:1 mitigation

(5) Mitigation Guidelines

- i. Locations closest to the Resource Area shall be prioritized for Buffer Zone mitigation, as feasible based on the lot conditions. Mitigation may include new planting areas or restoration of previously disturbed Buffer Zone by grading, correcting site drainage,

removing debris, removing impervious surfaces, removing non-native or invasive plants, planting with native vegetation, or other measures which will improve, restore and protect the wetland values of the Buffer Zone and adjacent Resource Area.

- ii. Mitigation planting plans shall be submitted in advance for review and approval by the Commission and shall include: the required square footage of mitigation area based on ratios in table above, with a mix of trees, shrubs, and herbaceous species appropriate to the project site; species common and Latin names; plant quantities and sizes; and seed mix or ground cover specification. All mitigation plantings shall be native species; no cultivars, non-native species, or invasive species shall be allowed. For a list of acceptable seed mixes and ground cover please refer to the Commission's website at <https://www.hingham-ma.gov/294/By-Laws-Regulations-Permitting>
 - iii. Mitigation areas shall be prepared for planting by removing any existing debris, lawn, and non-native or invasive vegetation, as applicable, followed by minor grading or raking and coverage by topsoil if necessary. After planting woody and herbaceous species, the remaining area shall be seeded with native plant seeds (either a mix or individual species) or planted with native ground cover, as specified on approved planting plan. Mulching in mitigation areas shall be minimized to encourage growth of the natural buffer and is generally only allowed around individual plants that are still establishing roots, as necessary. If proposing mulch due to existing lot constraints and/or other Resource Area considerations (e.g. distance to or type of Resource Area), denser perennial plant cover shall be proposed. The Commission may require mitigation or restoration activities to be overseen by a wetland scientist or other qualified professional.
 - iv. For projects subject to an Order of Conditions, mitigation area plantings shall survive at least two full growing seasons (spring, summer, and fall) with a minimum of 75% survival rate. If a 75% survival rate is not achieved, replacement plantings of the same species, unless otherwise approved by Conservation staff, shall be made by the applicant. The Commission may require a report following installation and/or monitoring reports at the end of each growing season. Mitigation areas are intended to revegetate with native species following planting and remain as a naturally vegetated buffer in perpetuity, and shall not be disturbed, mowed or maintained as a landscaped area, unless otherwise permitted by the Commission. Landscape islands or landscape beds within established lawns shall not count toward Buffer Zone mitigation unless granted a waiver from this policy by the Commission.
- (6) Exemptions. The Commission, in its discretion, may grant a partial or full exemption from HWR Section 19.0(e) based on lot constraints (e.g., insufficient area to install mitigation plantings as required by this policy) or scope of work. The Commission may also consider alternative mitigation such as off-site mitigation or mitigation outside of the Buffer Zone. In order to be granted an exemption from these requirements, the applicant shall submit a waiver request in accordance with HWR Section 17.5 containing sufficient supporting justification for the Commission to consider.

20.0 SPECIAL PROVISIONS FOR DOCKS AND PIERS

The purpose of these regulations is to establish performance standards for docks located at private residences. The intent of the Commission is to avoid or minimize adverse effects and cumulative adverse effects upon the wetland values. The Commission will consider the impact of both existing docks and docks with pending applications in determining the cumulative effects upon the protected Resource Areas. These regulations notwithstanding, the Conservation Commission will consider any and all pier proposals on a site-specific basis. Applicants are encouraged to review the Mass. DEP's "Small Dock and Piers" publication and also the Chapter 91 introduction and filing requirements information listed on the DEP's website.

- (a) Preamble. Docks and piers are one of few activities regulated by the Commission which occur entirely in Resource Areas. The construction, use, and maintenance of docks and piers are likely to have a significant or cumulative adverse effect on the Resource Area values of erosion and sediment control; storm damage prevention; protection of shellfish; protection of fisheries; protection of wildlife and wildlife habitat, protection of rare species habitat, including rare plant and animal species; protection of recreation and open space, and protection of aesthetics. Construction, maintenance and use of docks can have adverse effects on Resource Areas and navigation for recreational purposes. Further, docks destroyed by storm pose a threat to nearby properties by increasing water-borne debris.

Turbulence and prop dredging generated by boat traffic significantly increase turbidity levels. High turbidity levels attenuate the sunlight necessary for photosynthetic processes responsible for the primary productivity and oxygen regeneration of the water. The suspended sediments settle on shellfish beds, smothering existing shellfish and altering the quality of the sand bottom essential for spat (mollusk larvae) settlement. Resuspension of bottom sediments causes redistribution of sediments, alteration in sediment grain size distribution and causes changes in bottom topography relief, elevation and grade, including creation of depressions in the bottom. Resuspension of sediments into depressions creates deep pockets of sediment which may not be able to physically support shellfish or which can become anoxic and therefore not support shellfish. Resuspension of sediments during the period of shellfish larval settlement hinders or prevents the effective settlement of shellfish larvae. Boat traffic generated from docks will add to this disruption and will cause erosion of banks and marshes.

Construction of docks and subsequent boat activity causes resuspension of nutrient laden sediment particles which may cause a release of sediment-bound nutrients to the water column resulting in a "bloom" of vegetation, release of nutrients to the water column leads to eutrophication and anoxic bottom conditions. Anoxic sediments and anoxic bottom conditions create adverse impacts on benthic resources, including shellfish and fisheries.

While docks are typically the least environmentally destructive method of crossing a marsh, they may adversely affect the physical characteristics and functional value of a marsh. Marsh plants provide the major energy flow (detritus food chain) between the autotrophic and heterotrophic levels in a marsh-estuarine system. Many species of sport and commercial fish and shellfish are dependent upon this system. Plants adapted to high ambient light intensity, such as marsh grasses, are ill-adapted to the shaded conditions created by a dock. Shading may result in the loss of vegetative biomass (decreased

plant height, population density, and leaf thickness) or alteration of species composition. Reductions in plant density result in the loss of sediment normally trapped by roots and culms. Tidal washout of sediment could result in localized depressions which, through evaporation of trapped water, concentrate salt. High sediment salt levels effectively preclude recolonization by original vegetation. Localized tidal washout may lead to further vegetative regression, extension, and disruption of natural communities in the area.

Propeller turbulence near or in areas of submerged aquatic vegetation, such as eel grass or salt marsh, damages vegetation, thereby increasing the rate at which organic detritus is produced. If this organic detritus does not completely decompose aerobically, then anoxic bottom conditions will ensue, which adversely impact shellfish and fisheries. Cumulative impacts of the construction, maintenance and use of docks threaten to decrease the overall productivity of the marsh ecosystem, to reduce its ability to absorb storm wave energy, and to reduce its contribution to groundwater and surface water quality. Docks and piers when placed in land containing shellfish have an adverse impact on the Resource Area value of aquaculture. The placement length and size of the dock and the floats can interfere with the harvesting of shellfish.

Docks, depending on their length, can have an adverse impact on recreation by interfering with recreational boating activities. If not properly designed, docks can interfere with intertidal lateral access for recreational fishing and fowling. Any proposal that affects navigation is likely to have a significant or cumulative adverse effect on recreation. Depending on their height, length compatibility with surrounding environs and overall visibility docks can create an adverse impact to the aesthetics of the area. Excessive lighting on docks can interfere with recreational activities, cause temporary “night blindness” in recreational boaters, and have an adverse impact to the aesthetics of the night sky.

Higher piers allow for better light penetration to underlying vegetation and assist in preventing storm damage. Shorter piers produce less adverse shading effects on vegetation than longer piers. Narrower piers provide less adverse shading effects on plant productivity than wider piers. A north-south orientation of a pier is least likely to adversely affect vegetation through shading.

The regulations below are intended to minimize impacts on the Resource Area values.

(b) Definitions

- (1) Docks and Piers — The terms “dock” and “pier” shall be used interchangeably for the purpose of these Regulations and shall mean any structure extending out from the shore to inland/freshwater or coastal water, used to access boats and for other recreational purposes, including fixed or floating structures, both permanent and seasonal, and all parts thereof.

Docks and Piers may be comprised of many parts, including but not limited to the following:

- i.  Platform: Part of the permanent structure of the dock, supported by piling.
- ii. Gangway: Part of the dock used to access the float at the end of the dock.
- iii. Float: An impermanent part of the dock that adjusts with the water level.

The term Docks and Piers does not include: boat lifts, davits, or boat elevators (which are prohibited under these regulations). Swimming floats or working floats kept at a mooring and not connected to the shore are not considered “floats” for the purposes of these regulations.

- (2) Mean high water (MHW) — The present arithmetic mean of water heights observed at high tide over a specific 19-year metonic cycle determined by using hydrographic survey data of the National Ocean Survey and the U.S. Department of Commerce.
 - (3) Mean low water (MLW) — The arithmetic mean of water heights observed at low tide over a specific 19-year metonic cycle determined by using hydrographic survey data of the National Ocean Survey and the U.S. Department of Commerce.
 - (4) Mean lower low water (MLLW) — The average of the lower low water heights of each tidal day as established by the arithmetic mean of water heights observed at low tide over a specific 19-year metonic cycle determined by using hydrographic survey data of the National Ocean Survey and the U.S. Department of Commerce.
 - (5) Boat lift, davit, or boat elevator – A mechanical or electrically driven device and structure used for raising and lowering a vessel vertically, in and out of the water. Boat lifts, davits, and boat elevators are prohibited under these regulations.
 - (6) Seasonal use — The use of any dock, ramp, floats and supporting materials between April 1 and October 31. Seasonal use means that docks, ramps, floats, and supporting materials are not placed in any wetland Resource Area prior to April 1 of each year and are removed prior to November 1 of each year.
 - (7) Shellfish habitat — Areas below MHW that exhibit, or can be demonstrated to have exhibited within a reasonable historical period, characteristics generally recognized as supportive of shell fish life including but not limited to sediment type, grain size, circulation patterns, hydrologic regime, water chemistry, plant and algal communities, food supply, and normal predation patterns necessary to support shellfish species populations or any area that meets the criteria of Land Containing Shellfish (310 CMR10.34) or HWR Section 17.8. A determination of shellfish habitat can be based on the results of a site analysis and/or on current or historic shellfish productivity, or municipal shellfish population development programs. Absence of shellfish shall not be solely determinative of the quality of shellfish habitat due to the cyclic nature of shellfish population. All coastal waters in Hingham have been identified as Designated Shellfish Growing Areas by the Commonwealth of Massachusetts.
- (c) Performance Standards: When a dock, pier, or walkway is located at private residences, the Commission may allow a pier (dock or walkway) at its discretion, if satisfied that mitigation required in the Order of Conditions is sufficient to protect the Resource Area. The dock must meet the following conditions:
- (1) Access
 - i. Docks will be permitted only on land contiguous to the dwelling being served, except where unusual circumstances of longstanding may apply, such as where the dwelling is separated from the shore by a road. The dwelling must have a valid occupancy permit.

Docks shared by two or more residential properties with contiguous beach frontage may be considered by the Commission.

- ii. All piers and walkways shall be provided with access stairs at or proximate to MHW or other means provided for along shore public traverse. All structures shall be provided with suitable signage notifying the public of its right to free access as provided by the Commonwealth, or equivalent.
- iii. Piers shall be constructed so as to not interfere with any established public recreational use of the waterway, e.g., an area used by sailboats tacking through a narrow waterway, an area used by boaters or others because of unique wind or current conditions, a structure that would interfere with public access to or from a way to water or public, swimming area, waterskiing area, or interfere with use of paddled or oared boats.
- iv. The DEP permit number shall be permanently and conspicuously placed on the dock so as to be visible from seaward. The DEP permit number shall be placed permanently and conspicuously on all floats.
- v. No more than one pier (dock or walkway) shall be permitted to be constructed located on any residential property or parcel of land at any time.

(2) Docks

- i. Docks may be no greater than 4 feet wide at any point.
- ii. Docks may be no longer than 150 feet. The total length of the dock is measured from the platform on the landward side of the pier to the seaward end of the attached float.
- iii. A platform may be no greater than 6 feet by 8 feet including the walkway.
- iv. The decking shall be constructed at least five (5) feet above MHW, unless stated otherwise in HWR Section 20.0(d).
- v. The base of the pier shall be as close as possible to the center line of the lot, and it shall project outwards at an angle as nearly perpendicular to the shoreline as possible. An exception may be made in order to attain greater light penetration when a dock crosses a salt marsh.
- vi. Plank spacing shall be a minimum of 3/4 inch. Alternate spacing may be used if the deck material used provides a similar or greater degree of light penetration.
- vii. Lighting, if installed, shall not exceed 375 lumens, set a minimum of 12 feet apart and a maximum of two feet high from the walking surface. These lights must be baffled or shaded to direct light downward only. The lights cannot utilize timers and should be switched at the beginning and end of dock. No lighting shall interfere with safe navigation, as determined by the Harbormaster.

(3) Pilings

- i. Pilings must be spaced no closer than twenty times the diameter of the piling.

- ii. Cross or transverse bracing must be placed above the elevation of the high-water mark.

(4) Floats

- i. Docks may include only one float no greater than 10 feet by 20 feet located at the end of the pier in deeper water.
- ii. The bottom of a float must be at least 18 inches above the substrate measured from MLW, unless otherwise specified in HWR Section 20.0(d). If the required clearance cannot be maintained, float stops shall be installed to ensure the float remains at least 18 inches above the substrate at MLW.
- iii. Storage of floats, other seasonal pier material, and boats must be stored in an area outside of any wetland Resource Area and transported thereto without causing damage to any Resource Area. A storage plan for seasonal pier material must be included in the application.

(5) Construction Best Management Practices

- i. Only non-chromated copper arsenate (CCA) material may be used in the construction of the dock. Lead caps are not permitted. No creosote treated materials may be used. Wood preservative, if used, must be dry before the treated wood is used in construction.
- ii. Piles shall be installed using vibratory pile driving and soft starts to minimize impacts from sedimentation/turbidity and noise from the proposed work to marine fisheries.
- iii. Silt curtains must be used around installation of piles in fine-grained sediment.
- iv. All staging and storage of construction equipment and material shall be located on the upland side of the project site.
- v. Construction of the dock shall be accomplished by maximizing access from the water and upon completed portions of the dock. No heavy construction equipment, vehicles or barges are permitted on Salt Marsh or tidal flats during construction.
- vi. Water based support equipment (construction barge or any other associated equipment) shall not be allowed to ground out at any time to avoid impacts to coastal Resource Areas and marine fisheries.

(d) Notwithstanding any other provisions contained herein, the following restrictions shall apply in specific Resource Areas:

- (1) Area of Critical Environmental Concern (ACEC): No new construction or expansion of an existing dock shall be permitted within an ACEC.
- (2) Eelgrass: No new construction or expansion of an existing dock shall be permitted where eelgrass beds are found.
- (3) Salt Marsh: Salt marsh shall be avoided wherever possible. If it cannot be avoided, the application must demonstrate that either:

- i. The dock used will allow a minimum of 65% light penetration where any portion of the dock crosses a salt marsh, OR
 - ii. Dock height must be at least 1.5:1 height: width ratio where constructed over salt marsh.
- (4) If any Salt Marsh is eliminated, a replication with a ratio of 3:1 must take place in an area suitable for salt marsh growth approved by the Commission in consultation with the Shellfish Constable. Shellfish Habitat: If the project location is within a Shellfish Suitability Area, as designated by the MA Division of Marine Fisheries, a shellfish study conducted by a certified professional is required. The study must be submitted with the NOI, and shellfish habitat is determined by the study. Shellfish habitat is to be avoided wherever practicable. If dock or pier construction occurs within shellfish habitat, the following requirements apply:
 - i. Based on the findings of the shellfish survey, mitigation may be required before any construction begins in an area under and around the dock and float. All soft-shelled clams must be harvested to as near depletion as possible. This will be done in cooperation with the Hingham Shellfish Constable. This shellfish harvesting shall occur around any rainfall closures. Any undersized clams must be quickly transported to an area approved by the Shellfish Constable or the MA Division of Marine Fisheries. The Hingham Conservation Commission must be notified before the harvesting begins.
 - ii. The first full season following the completion of the work, the reseeding of shellfish shall occur under the supervision of the Division of Marine Fisheries. Reseeding shall be at a 3:1 ratio of the amount of racks and undersized shellfish taken out. Seed stock clams must be at a minimum size of ¼ inch.
 - iii. Other shellfish must be relocated to an area that will not be harmed by construction as approved by the Shellfish Constable.
 - iv. The bottom of a float located over shellfish habitat must be at least 30 inches above the substrate measured at MLW. If the required clearance cannot be maintained, float stops shall be installed to ensure the float remains at least 30 inches above the sediment at low tide.
- (e) Maintenance/Repairs. Notwithstanding the above, no license or permit is required for:
 - (1) Maintenance, repair, or minor modifications (under 10% change in height or ground coverage) of docks and piers with a current and valid license.
 - (2) Continuation of any existing, unauthorized use or structure located on private shorelands lawfully filled in accordance with a license or grant, provided that no unauthorized structural alteration or change in use has occurred on such shorelands subsequent to March 3, 2010, or in violation of an express condition of said license or grant.
- (f) Docks existing prior to March 3, 2010
 - (1) A new NOI is required for new docks or substantial expansion or extension of docks existing prior to March 3, 2010. Substantial expansion or extension is a change of greater than 10% of

 its height or footprint/ground coverage prior to March 3, 2010. If there is a substantial expansion, the Commission may require compliance with all or part of the regulations.

