

Chapter 196A

WETLANDS REGULATIONS

[HISTORY: Adopted by the Conservation Commission of the Town of Orleans 8-8-1995, as amended through 4-19-2009. Subsequent amendments noted where applicable.]

GENERAL REFERENCES

Shellfish — See Chs. 142 and 176.

Wetlands — See Ch. 160.

Zoning — See Ch. 164.

Board of Health regulations — See Ch. 185.

ARTICLE I General Provisions

§ 196A-1. Introduction and purpose.

A. Introduction. These regulations are promulgated by the Town of Orleans Conservation Commission pursuant to the authority granted to it under § 160-11 of the Orleans Code, known as the Orleans Wetlands Protection Bylaw (hereinafter referred to as the Bylaw). These regulations (hereinafter referred to as OWR) shall complement the Orleans Wetlands Protection Bylaw, and shall have the force of law upon their effective date.

B. Purpose.

(1) The Bylaw sets forth a public review and decision-making process by which activities affecting areas subject to protection under the Bylaw are to be regulated by controlling activities deemed by the Commission likely to have a significant or cumulative effect upon wetland values including, but not limited to the following interests:

- (a) Public and private water supply and quality.
- (b) Groundwater supply and quality.
- (c) Storm damage prevention.
- (d) Flood control.
- (e) Fisheries.
- (f) Prevention of pollution.
- (g) Shellfish habitat.

- (h) Wildlife habitat.
- (i) Aesthetics.
- (j) Erosion and sedimentation control.
- (k) Recreation.
- (l) Agriculture.
- (m) Aquaculture.

(2) The purpose of these regulations is to define and clarify that process by establishing standard definitions and uniform procedures by which the Orleans Conservation Commission may carry out its responsibilities under the Bylaw.

§ 196A-2. Statement of jurisdiction (§ 160-2).

Except as permitted by the Conservation Commission or as provided in this chapter, no person shall remove, fill, dredge, alter or build upon or within one hundred (100) feet of any bank, beach, dune or flat; upon or within one hundred (100) feet of any freshwater wetland, coastal wetland, marsh, wet meadow, bog, or swamp; upon or within one hundred (100) feet of any lake, pond, creek, river, stream, estuary or the ocean; upon any land under said waters; or upon or within one hundred (100) feet of any land subject to flooding or inundation by groundwater, surface water or tidal action; or upon land subject to coastal storm flowage; or upon an Area of Critical Environmental Concern (ACEC) as defined in § 160-4 herein. Any activity proposed or undertaken outside any area specified above shall not be subject to regulation under this chapter unless, in the judgment of the Conservation Commission, said activity will result or has resulted in the removing, filling, altering or building upon any area specified.

A. Areas subject to protection under the Bylaw: Except as permitted by the Conservation Commission or as provided in this chapter, no person shall remove, fill, dredge, alter, or build upon any of the following resource areas:

- (1) Bank, beach, dune, flat, freshwater wetland, marsh, bog, coastal wetland, swamp, wet meadow.
- (2) Lake, pond, creek, river, stream, estuary, the ocean.
- (3) Upon any land subject to flooding or inundation by tidal action, groundwater or surface water.
- (4) Within one hundred (100) feet of any resource area in Subsection A(1), (2) or (3) above.
- (5) Upon land subject to coastal storm flowage.
- (6) Upon an Area of Critical Environmental Concern (ACEC).

B. Activities subject to regulation under the Bylaw.

(1) Activities within the resource areas: Any activity proposed or undertaken within an area specified in OWR § 196A-2A which, in the judgment of the Commission, will constitute removing, filling, dredging or otherwise altering or building upon any resource area subject to protection under the Bylaw as set forth in § 196A-2A is subject to regulation under the Bylaw and requires notification to the Commission of the intent of such activity, the appropriate filing of documentation and permission from the Conservation Commission to proceed.

(2) Activities within the buffer zone: Any activity proposed or undertaken within one hundred (100) feet of an area specified in OWR § 196A-2A(1), (2) or (3) (hereinafter called the buffer zone) which, in the judgment of the Commission, will alter an area subject to protection under the Bylaw is subject to regulation under the Bylaw and requires the appropriate filing of documentation and permission from the Conservation Commission to proceed.

(3) Activities outside resource area or buffer zones: Any activity proposed or undertaken outside the areas specified in § 196A-2A above shall not be subject to regulation under the Bylaw and these regulations unless, in the judgment of the Conservation Commission, said activity will result or has resulted in the removing, filling, altering or building upon an area or adversely affecting either the resource area or buffer zone specified in § 196A-2A above.

§ 196A-3. General provisions.

A. Burden of proof: The applicant shall have the burden of proving by a preponderance of credible evidence:

(1) That the work proposed by the applicant is not significant to the protection of the interests identified in § 196A-1A above, or

(2) That the proposed work will contribute to the protection of the interests identified in § 196A-1A above by complying with the performance standards established for that particular resource area.

(3) That the activity proposed will not have a significant adverse impact either immediate or cumulative upon the wetland values protected by the Bylaw.

B. Burden of going forward: The applicant shall have the burden of going forward with credible evidence from a competent source in support of all matters asserted by the applicant in accordance with his/her burden of proof pursuant to § 196A-3A above.

C. Title 5; State Sanitary Code.

(1) In all cases of Title 5 issues, all state and Town regulations will be followed except that both bordering and nonbordering wetlands are protected.

(2) If a septic system is proposed on a lot that cannot meet the local Board of Health regulations without a variance, the applicant is not entitled to the presumption that all wetland interests are protected under 310 CMR 10.3 (3) Presumption Concerning 310 CMR 15.00 Subsurface Disposal of Sanitary Sewage (Title 5). Even with the issuance of a variance, the applicant is not entitled to the

presumption. The Commission notes that the presumption, were the applicant entitled, only applies to the impacts of 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 or other impacts from the construction of that system. Applicants must demonstrate that all wetland interests are protected and have an approved current order of conditions before any work can proceed on these projects.

D. Water Resource Protection Districts.

(1) Section 164-17 of the Orleans Zoning Bylaw provides that in certain water resource related districts, namely zones one and two, thirty percent (30%) of a lot where development is proposed must remain in its natural state and up to sixty percent (60%) must remain pervious. The main purpose of this section is to maintain water recharge capability. The section provides that the Building Commissioner must approve a plan showing delineation of such areas before any construction can proceed.

(2) The Conservation Commission will require proof of compliance with the above requirements before issuing an order of conditions for any project within its jurisdiction that is also within the regulated districts.

E. Continuing liability for compliance with MGL 131 s. 40 and the Bylaws. MGL 131 s. 40 provides as follows: "Any person who purchases, inherits or otherwise acquires real estate upon which work has been done in violation of the provisions of this section or in violation of any order issued under this section shall forthwith comply with any such order or restore such real estate to its condition prior to such violation; provided, however, that no action, civil or criminal, shall be brought against such person unless such action is commenced within three years following the recording of the deed or the date of the death by which such real estate was acquired by such person.. ." No further work will be approved on a property with an outstanding violation, such as unapproved structures or clearing, until the violation has been remediated.

F. Incorporation.

(1) General provisions: The procedures, requirements and definitions set forth in the Act (MGL 131 s. 40) and 310 CMR 10.00 et seq. are hereby incorporated and made a part of these regulations subject to the following:

(a) Where they differ from or depart from these regulations or the Orleans Bylaw, the Orleans Bylaw or regulations shall apply.

(b) Where the language of the Orleans Bylaw or these regulations is more definitive or protective, the language of the Bylaw or these regulations shall prevail.

(c) Where the Act or state regulations are determined to apply, all references contained therein to the Act and said regulations shall be deemed to include a reference to the Orleans Bylaw and regulations.

(d) Unless otherwise defined in the Orleans Bylaw or these regulations, those definitions found in the Act or regulations promulgated

thereunder, in effect at the time of the adoption of these regulations shall be incorporated.

(2) Wetlands, bordering and nonbordering.

(a) Jurisdiction:

[1] MGL 131 s. 40 states as follows: “No person shall remove, fill, dredge or alter any bank, freshwater wetland, coastal wetland, beach, dune, flat, marsh, meadow, or swamp bordering on the ocean or on any estuary, creek, river, stream, pond or lake or any land under said waters.” This requirement that any bank, freshwater wetland, etc., border on the ocean is reiterated in 310 CMR 10.02 “Statement of Jurisdiction.”

[2] The Orleans Wetlands Protection Bylaw, § 160-2, eliminates the requirement that in order to be subject to the Commission’s jurisdiction, the wetland resource areas must be “bordering.” It did so in order to provide broader protection to these resources than that found in the Act or state regulations as permitted by 310 CMR 10.01(2) which states, “Nothing contained herein should be construed as preempting or precluding more stringent protection of wetlands or other natural resources by local by-law, ordinance or regulation.” Thus under the Orleans bylaw and regulations, these resource areas are subject to the Commission’s jurisdiction and regulation whether or not they are “bordering.”

[3] Therefore, if the inclusion of the word “bordering” anywhere in the Act or 310 CMR 10.00 should result in removing that resource from the Orleans Conservation Commission’s jurisdiction, it shall be deemed for the purpose of the Orleans Regulations that the word “bordering” in that instance, has not been incorporated in these regulations.

(b) Freshwater wetlands:

[1] The definition of “bordering vegetated wetlands” (wet meadows, marshes, swamps and bogs) found in 310 CMR 10.55(2) is specifically not incorporated herein and the following definition is adopted instead:

“Vegetated wetlands are freshwater wetlands which may or may not border on creeks, rivers, streams, ponds, and lakes. The types of freshwater wetlands are wet meadows, marshes, swamps and bogs. They are areas where the topography is low and flat and where the soils are annually saturated. The ground and surface water regime and the vegetational community which occur in each type of freshwater wetland are specified in MGL 131 s. 40 and in these regulations.”

[2] All other references to “bordering vegetated wetlands” in 310 CMR 10.55 and elsewhere throughout 310 CMR 10.00 et seq. shall be deemed to refer to both bordering and nonbordering vegetated wetlands.

[3] Wetland replication: The Orleans Wetlands Bylaw § 160-3 “Wetlands replication” prohibits wetlands replication as a form of mitigation. In accordance with this prohibition, these regulations do not incorporate any part of

the performance standard found at 10.55(4)(b) permitting loss of up to 5,000 square feet of wetlands if replicated and (c) permitting loss of up to 500 square feet under other limited circumstances. Nor do these regulations incorporate any other section of the Act or 310 CMR 10.00 et seq. which permits loss of wetland when mitigating by replication. Nothing in this section prohibits construction of new wetlands as long as such new wetland is not replacement of an existing wetlands.

G. Savings. Should any portion of these regulations be declared invalid by a decision of court, the legislature or other body having jurisdiction, the remainder of these regulations shall remain in full force and effect.

H. Reservation. These regulations should not be construed to limit the authority under the Orleans Wetlands Protection Bylaw. The Commission reserves the right to act in a manner consistent with the Bylaw upon any matter within its jurisdiction.

I. Amendments. Amendments to these regulations shall be made in the same manner set forth in § 160-11 of the Orleans Wetlands Protection Bylaw.

J. Exceptions:

(1) MGL 131 s. 40 provides the following exceptions to the application of its provisions: maintenance and repair of lawfully located structures used to provide specific services to the public; certain emergency projects; mosquito control works, some maintenance dredging; normal maintenance and improvement of land in agriculture and aquaculture use; and those exceptions provided by any special act prior to January 1, 1973. The Orleans Wetlands Bylaw, § 160-5A and B however, provides exceptions only for maintenance and repair of lawfully located structures used to provide certain services to the public and for limited emergency projects. Both exceptions are subject to notice and performance standard requirements. Section 160-5C provides that “Other than stated in this section, the exceptions provided in the Wetlands Protection Act shall not apply.”

(2) The Orleans Conservation Commission has not in the past exercised its jurisdiction over the additional activities excepted by the state but not by the Orleans Bylaw. However, the Commission reserves its right to exercise such jurisdiction in the future.

K. Variances:

(1) The Conservation Commission may, in its discretion, grant variances from the specific stipulations of one or more of these regulations pursuant to this section. Such variances may be granted in specific instances where relief for the property owner may be warranted and said relief will not adversely affect the wetlands interests. Variances shall be granted only in accordance with the provisions of this section, and shall, in no way, set a precedent.

(2) A variance may be granted for the following reasons and upon the following conditions:

(a) The Conservation Commission may, in its discretion, grant a variance from these regulations upon a clear and convincing showing by the applicant that the proposed work, or its natural and consequential impacts and effects, will not adversely affect the interests protected in the Bylaw. In exercising

its discretion the Commission shall take cognizance of other reasonable alternatives which would permit the proposed work to be undertaken without deviating from the provisions of these regulations. It shall be the responsibility of the applicant to provide the Conservation Commission with any or all information which the Commission may request, in writing. The failure of the applicant to furnish any information which has been so requested may result in the denial of a request for a variance pursuant to this section.

(b) The Conservation Commission may grant a variance from these regulations when it is necessary to avoid so restricting the use of the property as to constitute an unconstitutional taking without compensation. If an application for a variance pursuant to this section is received by the Conservation Commission, the Commission may request an opinion from Town Counsel as to whether the application of these regulations to a particular case will result in such a taking without compensation.

L. Amended orders of conditions: Where an applicant seeks permission to expand or change a use previously prohibited or limited by past orders, either by an amended order of conditions or a new order of conditions, the applicant must make a clear showing of changed circumstances and must present proof that such changed circumstances have rendered the past prohibition or limitation which the applicant seeks to change, unnecessary to the preservation and protection of the wetlands interests of the Act and this Bylaw.

M. Effective date. The effective date of these regulations shall be August 8, 1995. These regulations apply to all applications made on or after the effective date.

N. Site specificity and precedence. Because each parcel of land and proposed project thereon has its own unique characteristics and impacts, every project brought before the Commission for approval will be considered on a site specific basis. And, because of this site specificity each project will stand alone and shall not set a precedent in the decisions to be made on subsequent projects.

§ 196A-4. Definitions.

As used in this chapter, the following terms shall have the meanings indicated:

ABUTTER: 310 CMR 10.04 — Owner of land sharing a common boundary or corner with the site of the proposed activity in any direction.

ABUTTER NOTIFICATION: MGL 131 s. 40 — Any person filing a notice of intent with a Conservation Commission shall at the same time give written notification thereof, by delivery, in hand or certified mail, return receipt requested, to all abutters and owners of property within one hundred (100) feet of the property line of the land where the activity is proposed at the mailing addresses shown on the most recent applicable tax list of the Assessors. If any work is to occur on a property with shoreline on a pond of less than 10 acres, abutter notification shall be extended to all pond shore owners. Said notification shall be at the applicant's expense, and shall state where copies of the notice of intent may be examined and obtained and where information regarding the date, time and place of the public hearing may be obtained. Proof of such notification, with a copy of the notice mailed or delivered, shall be filed with the Conservation Commission.

ACEC: 310 CMR 10.23 — An Area of Critical Environmental Concern (ACEC) is established [MGL ch 21A s. 2(7)] in special areas that meet designation criteria. The performance standard of “no adverse effect” on any of the interests protected by these regulations must be met for activities in this special area [310 CMR 10.24(5)]. (See Areas of Critical Environmental Concern, MCZM 1982.)

ACT: 310 CMR 10.04 — The Massachusetts Wetlands Protection Act, Chapter 130, section 131, hereinafter referred to as “the Act.”

ACTIVITY — Any form of draining, dumping, dredging, damming, discharging, excavating, filling or grading; the erection, reconstruction, or expansion of any building or structure; 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 systems; the discharging of pollutants; the destruction of plant life including cutting or pruning, the application of fertilizer, pesticides or insecticides; and any other changing of the physical characteristics of land, or of the physical or chemical characteristics of water. Structures shall include, but not be limited to, dwellings, garages, patios, tennis courts, playgrounds, mobile homes, swimming pools, pavement, signs, fences, retaining walls, antennae, utilities, conduits, fuel storage tanks, air-conditioning units, subsurface sewage disposal systems, or other temporary or permanent construction or facility.

ADMINISTRATIVE REVIEW — A review by the Commission or its agent pursuant to a written request to the Conservation Commission to determine whether or not additional filing will be necessary to perform work of a minor nature in an area subject to protection under § 196A-2A or, if not, whether to approve such work.

ADVERSE EFFECT: MGL 131 s. 40 — A greater than negligible change in the resource area or one of its characteristics or factors that diminishes the value of the resource area to one or more of the interests of the Act or this Bylaw, as determined by the issuing authority. “Negligible” means small enough to be disregarded.

AESTHETICS: Orleans Chapter 160 — The performance standard for aesthetics in wetlands, related water resources and adjoining land areas specifies that placement of buildings, structures or parking facilities shall not detract from the site’s scenic qualities and shall blend with the natural landscape. Also, in those areas, building sites should be kept away from the crest of hills, and foundations should be constructed to reflect the natural terrain.

AGRICULTURE: (See state regs. 310 CMR 10.04) — Reserved.

ALTER: Orleans Chapter 160 — Includes, without limitation, the following activities when undertaken to, upon, within or affecting resource areas protected by this chapter:

A. Removal, excavation or dredging of soil, sand, gravel or aggregate materials of any kind.

B. Changing preexisting drainage characteristics, flushing characteristics, sanitary distribution, sedimentation patterns, flow patterns or flood retention characteristics.

- C. Drainage or other disturbance of the water level or water table.
- D. Dumping, discharging, or filling with any material which may degrade water quality.
- E. Placing of fill or removal of materials, which would alter elevation.
- F. Driving of piles or erection or repair of buildings or structures of any kind.
- G. Placing of obstructions or objects in water.
- H. Destruction of plant life, including cutting or pruning of trees and shrubs especially those species that are endangered, threatened, or of special concern.
- I. Changing water temperature, biochemical oxygen demand or other physical or chemical characteristics of water.
- J. Any activities, changes or work which may cause or tend to contribute to pollution of any body of water or groundwater.

APPLICANT: Orleans Conservation Commission — Any person who files a notice of intent, request for determination of applicability or administrative review, or on whose behalf such notice is filed either under MGL c. 131 s. 40, or the Orleans Wetlands Protection Bylaw, Chapter 160 of the Orleans Code.

AQUACULTURE — Reserved.

BANK (INLAND): 310 CMR 10.54(2) — The portion of the land surface which normally abuts and confines a water body. It occurs between a water body and a vegetated wetland and adjacent floodplain, or, in the absence of these, it occurs between a water body and an upland.

BANK COASTAL: 310 CMR 10.30(2) — The seaward face or side of any elevated landform, other than a coastal dune, which lies at the landward edge of a coastal beach, land subject to tidal action or other wetland.

BANK (COASTAL), TOP OF — See “coastal bank, (top of).”

BEACH (COASTAL): 310 CMR 10.27(2) — Any unconsolidated sediment subject to wave, tidal and coastal storm action which forms the gently sloping shore of a body of salt water and includes tidal flats. Coastal beaches extend from the mean low water line landward to the dune line, coastal bank line or the seaward edge of existing man-made structures, when these structures replace one of the above lines, whichever is closest to the ocean.

BEACH (BARRIER): 310 CMR 10.29(2) — A narrow low-lying strip of land generally consisting of coastal beaches and coastal dunes extending roughly parallel to the trend of the coast. It is separated from the mainland by a narrow body of fresh, brackish or saline water or a marsh system. A barrier beach may be joined to the mainland at one or both ends.

BEACH (INLAND): 310 CMR 10.54(2) — A naturally occurring inland beach is an unvegetated bank as defined above (bank inland).

BEDROOM: Orleans Board of Health Code — Any portion of a dwelling which is designed to furnish the minimum isolation necessary for use as a sleeping area and includes but is not limited to, bedroom, den, study, sewing room, sleeping loft or enclosed porch but does not include kitchen, bathroom, dining room, halls, living room, sunporch, an unfinished cellar or basement. The number of bedrooms in a house determines the capacity requirements of the septic system.

BEST AVAILABLE MEASURE: 310 CMR 10.04 — The most up-to-date technology or the best designs, measures or engineering practices that have been developed and that are commercially available.

BEST PRACTICAL MEASURES: 310 CMR 10.04 — Technologies, designs, measures or engineering practices that are in general use to protect similar interests.

BOG — See “vegetated wetland.”

BORDERING: (See § 196A-3 on incorporation) — The Orleans Bylaw has omitted the state requirement that any freshwater or coastal wetland, marsh, wet meadow, bog or swamp must border on any lake, pond, creek, river, stream, estuary or the ocean in order to be subject to the jurisdiction of the Orleans Conservation Commission, § 160-2. Therefore, the definition of bordering is omitted from these regulations.

BOUNDARY: Orleans Conservation Commission — The line which delineates the edge of any resource area or buffer zone subject to protection under the Act or the OWPB.

BUFFER STRIP: Orleans Conservation Commission — A strip of densely vegetated land lying between human activity and the boundary of a resource area.

BUFFER ZONE: Orleans Conservation Commission — The area of land extending one hundred (100) feet horizontally landward from the boundary of any resource area specified in § 160-2.

CERTIFICATE OF COMPLIANCE: Orleans Conservation Commission — A written determination by the Conservation Commission that work or a portion thereof has been completed in accordance with order of conditions.

COASTAL BANK (TOP OF): The top of a coastal bank shall be delineated by a slope more gradual than 4:1, or the elevation of the 100-year flood zone, whichever is further from the resource. The buffer zone for the resource area shall extend inland for 100 feet from the designated top of the bank.

COASTAL WETLANDS: MGL 131 s. 40 — Any bank, marsh, swamp, meadow, flat or other lowland subject to tidal action or coastal storm flowage.

CONDITIONS: Orleans Conservation Commission — Those requirements set forth in a written permit issued by the Conservation Commission for the purpose of permitting and regulating, or prohibiting any activity that

removes, fills, dredges, or alters or will alter an area subject to protection under the Bylaw as set forth in § 196A-2A.

CONSERVATION COMMISSION: 310 CMR 10.04 — That body comprised of members lawfully appointed pursuant to MGL c. 40 s. 8C.

CONSERVATION COMMISSION ADMINISTRATOR: Orleans Conservation Commission — The duly authorized agent of the Commission, with the authority to carry out certain of the Commission's functions. These shall include, but not be limited to, administrative reviews, site visits, review of application compliance with submission requirements, enforcement, reports to the Commission and any other duties assigned by the Commission.

CREEK: 310 CMR 10.04 — Means the same as a stream as defined hereinafter.

CUMULATIVE EFFECT: Orleans Chapter 160 — The effect of activities regulated under this Bylaw which may be individually insignificant to the interests and values under this Bylaw, but when considered in relation to other past, or present activities in a given area may be significant to said interests and values in the aggregate.

DATE OF ISSUANCE: 310 CMR 10.04 — The date a permit is mailed, as evidenced by a postmark, or the date it is hand delivered or faxed.

DATE OF RECEIPT: 310 CMR 10.04 — The date of delivery to an office, home or usual place of business by mail, hand delivery or fax.

DETERMINATION: 310 CMR 10.04 —

A. A determination of applicability is a written finding by the Conservation Commission after public hearing as to whether a site or the work proposed thereon is subject to the jurisdiction of the OWP and does or does not require the filing of a notice of intent.

B. A determination of significance is a written finding by the Conservation Commission, after a public hearing, that the area on which the proposed work is to be done, or which the proposed work will alter, is significant to one or more of the interests identified in § 160-2.

C. A notification of nonsignificance is a written finding by the Conservation Commission, after a public hearing, that the area on which the proposed work is to be done, or which the proposed work will alter, is not significant to any of the interests of the § 160-2.

DITCH — Any depression through which water flows as drainage in times of high water. (See also "stream").

DOCK — Any structure including but not limited to ramp, pier, wharf, dock and float which could be used to access boats whether or not tied.

DREDGE: 310 CMR 10.04 — To deepen, widen or excavate, either temporarily or permanently.

DUNE: 310 CMR 10.28(2) — Any natural hill, mound, or ridge of sediment landward of a coastal beach deposited by wind action or storm overwash. Dune also means sediment deposited by artificial means and serving the purpose of storm damage prevention or flood control.

EROSION AND SEDIMENTATION CONTROL: Orleans Chapter 160

A. Erosion control means the regulation of activities or processes which would threaten, by wearing away the surface soil or by undermining the interior portions of the landforms, the stability of landforms and resource areas, and the soil and/or vegetation associated with protected resources and adjoining land areas.

B. Sedimentation control means the regulation of activities, or processes that would threaten the ability of wetlands to settle out sediments and other waterborne material beyond their capacity to do so without adverse effect on other wetland functions.

ESTUARY: 310 CMR 10.04:

A. Any area where fresh and salt water mix and the tidal effects are evident; or

B. Any partially enclosed coastal body of water where the tide meets the current of any stream or river or groundwater discharge.

EXTENSION PERMIT: 310 CMR 10.04 — A written extension of time within which the authorized work shall be completed.

FEMA — Federal Emergency Management Act.

FILL: 310 CMR 10.04 — Any deposition of material that raises an elevation, either temporarily or permanently.

FINAL ORDER — 310 CMR 10.04.

FIRM — Flood Insurance Rate Map.

FISH: MGL 130 — Fish includes all species of fresh and salt water finfish and shellfish.

FLAT: 310 CMR 10.27(2)(B) — See “tidal flat.”

FLOOD ZONES — Areas designated by the Federal Emergency Management Agency (FEMA) and depicted on the FEMA Flood Insurance Rate Maps as subject to wave action or flooding during large coastal events;

A. VELOCITY ZONE — The area and elevation designated as subject to severe wave action during large coastal storm events.

B. A-ZONE — The area and elevation designated as likely to be flooded during a 100-year flood event.

C. B-ZONE — The area and elevation designated as likely to be flooded during a 500-year storm event.

D. C-ZONE – An area of minimal flooding.

FRESHWATER WETLANDS: MGL 131 — See “vegetated wetlands.”

GROUNDWATER SUPPLY: 310 CMR 10.04 — Water below the earth’s surface in the zone of saturation.

HARDSHIP: Orleans Conservation Commission —

A. The occasion when a literal enforcement of the provisions of these regulations would involve a substantial hardship, financial or otherwise, to the petitioner or appellant;

B. The hardship is owing to circumstances relating to the soil conditions, shape or topography of such land or structures and especially affecting such land or structures but not affecting generally the zoning district in which it is located; and

C. Desirable relief may be granted without either substantial detriment to the public good or nullifying or substantially derogating from the intent or purpose of the OWP.

D. Excessive economic burden placed on an applicant as a result of the wetlands regulations may be considered to be a hardship. It is presumed that any proposed private activity within the area of jurisdiction will place public resources at risk. An applicant is expected to take steps to protect these public resources. Such steps may place an economic burden on the applicant that would not be placed on a person working beyond the area of jurisdiction. Some additional economic burden is presumed to be a reasonable requirement necessary to protect the public resource. In order to demonstrate hardship, the applicant must show that the public resource can be equally protected at less cost by some other means. Hardship shall in no case be a condition unique to the applicant. The hardship must be associated with activities on the property for which the proposal is made.

ISSUING AUTHORITY: 310 CMR 10.04 — Conservation Commission, Mayor, Selectmen or the Department, whichever is applicable.

LAKE: 310 CMR 10.04 — Any open body of fresh water with a surface area of 10 acres or more and shall include great ponds.

LAND CONTAINING SHELLFISH: Orleans Conservation Commission — See “shellfish habitat.”

LAND SUBJECT TO COASTAL STORM FLOWAGE: 310 CMR 10.04 — Land subject to any inundation caused by coastal storms up to and including that caused by a 100-year storm, surge of record or storm of record, whichever is greater.

LAND SUBJECT TO FLOODING: 310 CMR 10.57(2) — An area with low, flat topography and inundated by floodwaters rising from creeks, rivers, streams, rivers, ponds, lakes, estuaries or the ocean.

A. Isolated (10.57) (2) (b) (1) (2) (3).

B. Bordering (10.57) (2)(a).

LAND SUBJECT TO TIDAL ACTION: 310 CMR 10.04 — Any land subject to periodic rise and fall of a coastal water body including spring tides.

LAND UNDER THE OCEAN OR AN ESTUARY: 310 CMR 10.04 — Land extending from the mean low water (MLW) line seaward to the boundary of the municipality's jurisdiction and includes land under estuaries.

LAND UNDER WATER BODIES AND WATERWAYS: 310 CMR 10.56(2) — The bottom of, or land under the surface of the ocean or any estuary, creek, river, stream, pond or lake. Said land may be composed of sand, gravel, rocks, bedrock, peat, fine sediments, or organic muck.

LAND UNDER SALT PONDS: 310 CMR 10.33(2) — A shallow enclosed or semi-enclosed body of saline water that may be partially or totally restricted by barrier beach formations. Salt ponds may receive fresh water from small streams emptying into their upper reaches and/or springs in the salt pond itself (or along its margin).

LIMIT OF WORK: Orleans Conservation Commission — That line past which no work or activity is permitted without further application to the Commission. (See § 196A-7H.)

MAJORITY: 310 CMR 10.04 — More than one-half of the members of the Conservation Commission then in office.

MARSH (SALT) — Coastal wetland areas that extend landward up to the highest tide line of the year, and where a significant portion of the vegetation community is adapted to saline conditions and is composed of, but not limited to nor necessarily including all of, the following plants or groups of plants: salt marsh cord grass (*Spartina alterniflora*), salt meadow cord grass (*Spartina patens*), spike grass (*Distichlis spicata*), black grass (*Juncus gerardi*), groundsel tree (*Baccharis halimifolia*), sea lavender (*limonium carolinianum*), seaside goldenrod (*Solidago sempervirens*), sea blite (*Suaeda maritima*), samphire (*Salicornia europaea*), glasswort (*Salicornia bigelovii*), saltmarsh bulrush (*Scirpus robustus*), salt bush (*Atriplex patula*), seaside plantain (*Plantago juncoides*) and aster (*Aster tenuifolius*).

MARSH (FRESHWATER): MGL 131 s. 40 — See “vegetated wetlands.”

MEADOW — (See “vegetated wetlands.”)

MIGRATORY AREAS: 310 CMR 10.04 — Those areas used by wildlife moving from one habitat to another whether seasonally or otherwise.

MHW — (See “tides.”)

MLW — (See “tides.”)

MEPA: 310 CMR 10.04 — The Massachusetts Environmental Policy Act, MGL c. 30, s. 62-62H and the regulations promulgated thereto, 301 CMR 10.00 et seq.

NAVIGATION: Orleans Chapter 160 — The ability to traverse a waterway.

NOTICE OF INTENT (NOI): 310 CMR 10.04 — The written notice filed by any person intending to remove, fill, dredge or alter an Area Subject to Protection under the Massachusetts Wetlands Protection Act (the Act), MGL 131 s. 40 or the Orleans Wetlands Protection Bylaw (the bylaw).

OCEAN: 310 CMR 10.04 — The Atlantic Ocean and all contiguous waters subject to tidal action.

ORDER: 310 CMR 10.04 — Order of conditions, superseding order, final order or enforcement order whichever is applicable.

ORDER OF CONDITIONS: Orleans Conservation Commission — The document issued by the Conservation Commission containing conditions which regulate or prohibit an activity under either the Act and/or the Orleans Wetlands Protection Bylaw.

PARTY TO ANY PROCEEDING: Orleans Conservation Commission/310 CMR 10.04 — Means the applicant, the Conservation Commission and, the Department and pursuant to Article II may include the owner of a site, any abutter, any person aggrieved, any ten residents of the Town where the land is located and any ten persons pursuant to MGL c. 30A s. 10A.

PERSON: MGL 131 s. 40 — Includes 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.

PERSON AGGRIEVED: 310 CMR 10.04/Orleans Conservation Commission — Any person who, because of an act or failure to act by the issuing authority, may suffer an injury in fact which is different either in kind or magnitude from that suffered by the general public and which is within the scope of the interests identified in the Bylaw facts to allow the Conservation Commission to determine whether or not the person is in fact aggrieved.

PIERS — See “docks.”

PLANS: 310 CMR 10.04/Orleans Conservation Commission — Such data, maps, engineered drawings, calculations, specifications, schedules and other materials, if any, deemed necessary by the issuing authority to describe the site and/or the work, to determine the applicability of the Bylaw or to determine the impact of the proposed work upon the interests identified as set forth in § 196A-1B.

POND, COASTAL: 310 CMR 10.33(2) — See “salt pond.”

POND, INLAND: Orleans Chapter 160 — Any open body of fresh water, either naturally occurring or man-made by impoundment, which is never without

standing water due to natural causes, except during periods of extended drought. For purposes of this definition, “extended period of drought” shall mean any period of four (4) or more months during which the average rainfall for each month is fifty percent (50%) or less of the ten-year average for that same month. Basins or lagoons which are part of wastewater treatment plants shall not be considered nor shall swimming pools or other impervious man-made retention basins.

PREVENTION OF POLLUTION: Orleans Conservation Commission — The prevention or reduction of contamination of surface waters, both fresh and salt, groundwater, and/or soil.

PRIVATE WATER SUPPLY: 310 CMR 10.04 — Any source or volume of surface or ground water demonstrated to be in any private use or demonstrated to have a potential for private use.

PROTECTION OF FISHERIES: 310 CMR 10.04/Orleans Conservation Commission — Protection of the capacity of an area subject to protection under the Bylaw as specified in § 196A-2A to prevent or reduce contamination or damage to fish and to serve as their habitat and nutrient source. Fish includes all species of fresh and salt water finfish and shellfish.

PROTECTION OF LAND CONTAINING SHELLFISH OR SHELLFISH HABITAT: Orleans Conservation Commission — Protection of the capacity of an area subject to protection under the Bylaw, OWPB § 160-2 to prevent or reduce contamination or damage and to shellfish, their nutrient source or their habitat.

PROTECTION OF WILDLIFE: Orleans Conservation Commission — The capacity of an area subject to protection under the Bylaw, OWPB § 160-2 to provide necessary wildlife habitat (see “wildlife habitat”); and also the ability of any resource area to provide food, breeding habitat, or escape cover for any species falling within the definition of “wildlife” set forth in these regulations.

PUBLIC WATER SUPPLY: 310 CMR 10.04 — Any source or volume of surface or ground water demonstrated to be in public use or approved for water supply pursuant to MGL c. 111 s. 160 by the Division of Water Supply of the DEP or shown to have a potential for public use.

QUORUM: 310 CMR 10.04 — A majority of members then in office.

RECONSTRUCTION — “Reconstruction” shall mean alteration and rebuilding of up to 25% of the structure, measured by square footage of the foundation, or cubic footage of the structure. Alteration and rebuilding of over 25% of the structure shall be considered new construction.

RECREATION — Orleans Chapter 160 — Any leisure activity or sport taking place in, on, or within 100 feet of a resource area which is dependent on the resource area directly or indirectly for its conduct and enjoyment. Recreational activities include, but are not limited to, the following: noncommercial fishing and shellfishing, hunting, boating, swimming, walking, painting, birdwatching and aesthetic enjoyment.

REQUEST FOR DETERMINATION OF APPLICABILITY (RD): 310 CMR 10.04 — A written request made by any person to the Conservation

Commission for a decision as to whether a site or work thereon is subject to the bylaw and if so, requires the filing of a NOI.

RESOURCE AREAS: Orleans Chapter 160:

A. The areas specified in § 196A-2A(1), (2), (3), (5), or (6) as follows:

(1) Bank, beach, dune, flat, freshwater wetland, marsh, bog, coastal wetland, swamp, wet meadow.

(2) Lake, pond, creek, river, stream, estuary, the ocean and any land under said waters.

(3) Any land subject to flooding or inundation by tidal action, groundwater or surface water.

(4) Land Subject to Coastal Storm Flowage.

(5) Area of Critical Environmental Concern (ACEC).

B. Definitions of specific resource areas are contained in other sections of these regulations and the state wetland regulations.

RIVER — A natural flowing body of water that empties to any ocean, lake, pond, other wetland, or other river, and which flows throughout the year.

ROCKY INTERTIDAL SHORES: 310 CMR 10.31(2) — Naturally occurring rocky areas such as bedrock or boulder-strewn areas between the mean high water (MHW) line and the mean low water (MLW) line.

SALT MARSH — See “marsh, salt.”

SALT POND: 310 CMR 10.33(2) — A shallow enclosed or semi-enclosed body of saline water that may be partially or totally restricted by barrier beach formation. Salt ponds may receive fresh water from small streams emptying into their upper reaches and/or springs in the salt pond itself.

SIGNIFICANT: 310 CMR 10.04 — Plays a role. A resource area is significant to an interest identified in § 196A-1B when it plays a role in the provision or protection, as appropriate, of that interest.

SHELLFISH: Orleans Chapter 160 — Mollusks and crustaceans, including but not limited to various species of the following: clams, conchs, mussels, oysters, periwinkles, quahogs, razor clams, scallops, sea clams, lobsters and crabs.

SHELLFISH HABITAT: Orleans Chapter 160 — Those areas below the mean high water line in any coastal resource area that provides or has provided the characteristics including but not limited to sediment type and grain size, circulation patterns, hydrologic regime, water chemistry, plant communities and food supply, necessary to support shellfish species.

STORM DAMAGE PREVENTION: 310 CMR 10.04 — The prevention of damage caused by water and wind from storms, including, but not limited to erosion

and sedimentation, damage to vegetation, property or buildings, or damage caused by flooding, waterborne debris or waterborne ice.

STREAM: Orleans Conservation Commission — A body of running water, including brooks and creeks, which moves in a definite channel in the ground due to a hydraulic gradient. A portion of a stream may flow through a culvert or beneath a bridge. Such a body of running water which does not flow throughout the year (i.e. which is intermittent) is also a stream.

SUPERSEDING DETERMINATION: 310 CMR 10.04 — A determination of applicability, of significance or nonsignificance, as the case may be, issued by the Department of Environmental Protection.

SUPERSEDING ORDER: 310 CMR 10.04 — A document issued by the Department of Environmental Protection containing conditions which regulate or prohibit an activity.

SWAMP — MGL 131 s. 40 pp 8.

TIDES: Orleans Conservation Commission:

A. **SPRING:**10.04 — Those tides that occur at or near the time when the gravitational forces of the sun and moon are in phase (new and full moons), and which are of the greatest amplitude during the approximately 14-day tidal cycle.

B. **NEAP** — Those tides that occur between the new and full moons and have less variation than the spring tides.

C. **EXTREME** — Those tides generally associated with storms or astronomical configurations and are perceptibly higher and lower than the spring tides.

D. **MEAN HIGH WATER:** 10.23 — The line where the arithmetic mean of the high water heights observed over a specific 19-year metonic cycle (the National Tidal Datum Epoch) meets the shore and shall be determined using hydrographic survey data of the National Ocean Survey of the U.S. Department of Commerce and local observations.

E. **MEAN LOW WATER:** 10.23 — The line where the arithmetic mean of the low water heights observed over a specific 19-year metonic cycle (the National Tidal Datum Epoch) meets the shore and shall be determined using hydrographic survey data of the National Ocean Survey of the U.S. Department of Commerce and local observations.

TIDAL FLAT: 310 CMR 10.27(2)(b) — Any nearly level part of a coastal beach which usually extends from the mean low water line landward to the more steeply sloping face of the coastal beach or which may be separated from the beach by land under the ocean.

VEGETATED FRESHWATER WETLAND (WET MEADOWS, MARSHES, SWAMPS AND BOGS): MGL 131 s. 40, 310 CMR 10.55/Orleans Conservation Commission — The term “freshwater wetlands” as used in this section shall mean wet meadows, marshes, swamps, bogs, areas where groundwater, flowing or standing surface water or ice provides a significant part of the supporting

substrate for a plant community for at least five months of the year; emergent and submergent plant communities in inland waters; that portion of any bank which touches any inland waters. Freshwater wetlands are areas where the topography is low and flat, and where the soils are annually saturated and within which 50% or more of the species of the vegetational community consists of the wetland plant species identified below:

A. BOGS: MGL 131 s. 40 — Areas where standing or slowly running water is near or at the surface during a normal growing season and where a vegetational community has a significant portion of the ground or water surface covered with sphagnum moss (*Sphagnum*) and where the vegetational community is made up of a significant portion of one or more of, but not limited to nor necessarily including all of, the following plants or groups of plants: aster (*Aster nemoralis*), azaleas (*Rhododendron canadense* and *R. viscosum*), black spruce (*Picea mariana*), bog cotton (*Eriophorum*), cranberry (*Vaccinium macrocarpon*), high bush blueberry (*Vaccinium corymbosum*), larch (*Larix laricina*), laurels (*Kalmia augustifolia* and *K. polifolia*), leatherleaf (*Chamaedaphne calyculata*), orchids (*Arethusa*, *Calopogon*, *Pogonia*), pitcher plants (*Sarracenia purpurea*), sedges (*Cyperaceae*), sundews (*Droseraceae*), sweet gale (*Myrica gale*), white cedar (*Chamaecyparis thyoides*).

B. SWAMPS, MGL 131 s. 40 — Areas where the groundwater is at or near the surface of the ground for a significant part of the growing season or where runoff water from surface drainage frequently collects above the soil surface, and where a significant part of the vegetational community is made up of, but not limited to nor necessarily including all of, the following plants or groups of plants: alders (*Alnus*), ashes (*Fraxinus*), azaleas (*Rhododendron canadense* and *R. viscosum*), black alder (*Ilex verticillata*), black spruce (*Picea mariana*), button bush (*Cephalanthus occidentalis*), American or white elm (*Ulmus americana*), white Hellebore (*Veratrum viride*), hemlock (*Tsuga canadensis*), highbush Blueberry (*Vaccinium corymbosum*), larch (*Larix laricina*), cowslip (*Caltha palustris*), poison sumac (*Toxicodendron vernix*), red maple (*Acer rubrum*), skunk cabbage (*Symplocarpus foetidus*), sphagnum mosses (*Sphagnum*), spicebush (*Lindera benzoin*), black gum tupelo (*Nyssa sylvatica*), sweet pepper bush (*Clethra alnifolia*), white cedar (*Chamaecyparis thyoides*), willow (*Salicaceae*).

C. WET MEADOW, MGL 131 s. 40 — Areas where the groundwater is at the surface for a significant part of the growing season and near the surface throughout the year and where a significant part of the vegetational community is composed of various grasses, sedges and rushes; made up of, but not limited to nor necessarily including all of, the following plants or groups of plants: blue flag (*Iris*), vervain (*Verbena*), thoroughwort (*Eupatorium*), dock (*Rumex*), false loosestrife (*Ludwigia*), hydrophile grasses (*Gramineae*), marsh fern (*Dryopteris thelypteris*), rushes (*Juncaceae*), sedges (*Cyperaceae*), sensitive fern (*Onoclea sensibilis*), smartweeds (*Polygonum*).

D. MARSHES, MGL 131 s. 40: Areas where a vegetational community exists in standing or running water during the growing season and where a significant part of the vegetational community is composed of, but not limited to nor necessarily including all of, the following plants or groups of plants: arums (*Araceae*), bladderworts (*Utricularia*), bur reeds (*Sparganiaceae*), button bush (*Cephalanthus occidentalis*), cattails (*Typha*), common reeds (*Phragmites*), duck weeds (*Lemnaceae*), eel grass (*Vallisneria*), frog bits (*Hydrocharitaceae*), horsetails (*Equisetaceae*), hydrophilic grasses (*Gramineae*), leatherleaf (*Chamaedaphne calyculata*), pickerel weeds (*Pontederiaceae*), pipeworts

(*Ericoaulon*), pond weeds, (*Potamogeton*), rushes (*Juncaceae*), sedges (*Cyperaceae*), smartweeds (*Polygonum*), sweet gale (*Myrica gale*), water milfoil (*Haloragaceae*), water lilies (*Nymphaeaceae*), water starworts (*Callitrichaceae*), water willow (*Decodon verticillatus*).

VERNAL POOLS: Orleans Conservation Commission — Those areas containing vernal pool habitat.

VERNAL POOL HABITAT: 310 CMR 10.04 — Confined basin depressions that, at least in most years, hold water for a minimum of two continuous months during the spring and/or summer, and that are free of adult fish populations, as well as the area within 100 feet of the mean annual boundaries of such depressions. These areas are essential breeding habitat, and provide other extremely important wildlife habitat functions during nonbreeding season as well, for a variety of amphibian species such as wood frog (*Rana sylvatica*) and the spotted salamander (*Ambystoma maculatum*), and are important habitat for other wildlife species.

WATER-DEPENDENT USES: 310 CMR 10.04 — Those uses and facilities that require direct access to, or location in, marine, tidal or inland waters and therefore cannot be located away from said waters, including but not limited to: marinas, public recreational uses, navigational and commercial fishing and boating facilities, water-based recreational uses, navigation aids, basins and channels, industrial uses dependent upon waterborne transportation or requiring large volumes of cooling or process water that cannot reasonably be located or operated at an upland site, crossings over or under water bodies or waterways (but limited to railroad and public roadway bridges, tunnels, culverts, as well as railroad tracks and public roadways connecting thereto which are generally perpendicular to the water body or waterway) and any other uses and facilities as may further hereafter be defined as water-dependent in 310 CMR 9.00.

WILDLIFE: Orleans Conservation Commission — Wildlife includes all nondomestic animals, including but not limited to, mammals, birds, reptiles, amphibians, fish and the habitat required by these animals for nesting, cover and food, with the exception of species of the Class *Insecta* which have been determined by the Commonwealth of Massachusetts to be a pest whose protection would be a risk to man. The definition encompasses but is not limited to all vertebrate and invertebrate species listed by state and federal agencies as endangered, threatened or of special concern.

WILDLIFE HABITAT: Orleans Chapter 160 — Those resource areas subject to Conservation Commission jurisdiction which, due to their plant community composition and structure, hydrologic regime or other characteristics, provide important food, shelter, migratory or overwintering areas or breeding areas for wildlife.

WORK: 310 CMR 10.04 — The same as activity.

ARTICLE II Procedures

[NOTE: The following types of projects, house construction, coastal structures, docks, piers, walkways, etc. will require plans to be submitted by a Massachusetts Registered Engineer.]

§ 196A-5. Fees. Town of Orleans (DEP fees are not included). (Note: Fees for all after-the-fact filings will be doubled.)

(All fees include advertising, where applicable)

Administrative Review	\$10.00
Request for Determination of Applicability	\$15.00
Notices of Intent	Variable
Certificates of Compliance	\$30.00
Amended Order of Conditions	\$25.00
Coastal Engineered Structure	\$2.00 per linear foot
Docks	\$2.00 per linear foot
Reissues of Orders of Conditions, Certificates of Compliance, Extensions of Orders of Conditions, etc.	\$20.00

§ 196A-6. Filing requirements.

As part of these regulations the Commission will require forms, submission requirements and procedures that are available in the Conservation Department as well as the websites of the Town of Orleans (www.town.orleans.ma.us) and the Department of Environmental Protection (www.state.ma.us/dep).

A. A notice of intent may be submitted to the Conservation Department by noon on Monday of the 1st and 3rd week in the month generally fifteen (15) days prior to the desired Tuesday morning hearing date. Application dates may vary due to holidays and other reasons.

B. When continuing a hearing, request to continue for a certain reason to a date when you are sure all the new information can be submitted by Thursday at noon before the hearing. Hearings cannot be continued indefinitely and those that are continued several times without additional or requested information may be denied for lack of Information.

C. A certificate of compliance request must include a report of any changes to the order and any conditions that have not been met even when asserting that the project has been satisfactorily completed or is in substantial compliance. The Conservation Commission may request an official revised site plan to reflect the as-built conditions.

ARTICLE III
Specific Resource Areas Regulated

§ 196A-7. Buffer zone and buffer strip.

A. Preamble.

(1) The Department of Environmental Protection has recognized the value of buffer zones to the protection of wetlands. 310 CMR 10.02 (2) (b) provides that any activity proposed within the buffer zone which, in the judgment of the issuing authority will alter an area protected under the Act is subject to regulation. It is generally agreed, however, that more protection is necessary for the 100-foot buffer zone than is provided for in the state regulations. Since most of the proposed activities coming before the Commission occur in the buffer zone, this new section has been added to define the Commission's concerns and to set forth measures which must be taken to prevent the detrimental impacts of activities in this area on those wetland values protected by the Orleans Wetlands Protection Bylaw.

(2) These adverse impacts can arise from both construction and from the ultimate use of the project involved. They include, but are not limited to, erosion, siltation, loss of groundwater recharge capability, contamination of water bodies by surface runoff carrying heavy metals such as lead, cadmium, copper and zinc, hydrocarbons such as gasoline and motor oil, pesticides and herbicides, bacteria, viruses, and sediments. Nutrient loading of water bodies results from overuse of lawn fertilizers as well as septic effluent. Wildlife habitat may be lost through introduction of invasive plants or otherwise and aesthetic values compromised.

(3) One method of protecting environmentally sensitive areas is to provide vegetated areas or buffer zones between structures and the resource to be protected. Such buffer zones can filter or absorb many of the pollutants, encourage water recharge, prevent erosion and sedimentation, provide wildlife habitat and help to preserve the aesthetics of our natural shoreline.

(4) Vegetation in the entire 100-foot buffer acts to prevent pollution of groundwater and surface water, functions as erosion control and wildlife habitat, and provides aesthetic improvement. Buffer zones, due to their plant community composition and structure, hydrologic regime or other characteristics that provide important food, shelter, migratory or over-wintering areas or breeding areas for wildlife are presumed to be significant to the protection of wildlife habitat. Buffers around vernal pools are especially important as the adult stages of the amphibians using the pools are generally found within 300 feet of the pool. Trees and shrubs provide important screening of buildings from public areas. Vegetation in the 100-foot buffer also reduces the velocity and the nutrient content of the run off, which protects the water body.

(5) Buffer zones are often compromised by existing structures, or roadways. The remaining buffer is especially important to protect the interests under the Act.

B. Presumption: Where a proposed activity involves the altering of a buffer zone, the Commission shall presume that such area is significant to the interests specified in the Orleans Bylaw – Chapter 160. This presumption is rebuttable upon clear and convincing evidence that the buffer zone does not play a role in the

protection of said interests. No work will be permitted in the buffer zone which has a significant adverse impact upon the interests (wetland values) protected by the Act or the Orleans Bylaw. In buffer zones adjacent to an ACEC and in the Town Cove/Nauset estuary, the no adverse impact standard will apply.

C. Guidelines for work in the buffer zone:

(1) Buffer strip: Where work results in eroded or bare ground, the area must be revegetated as soon as practicable or mulched immediately. Where there is new construction or reconstruction, a buffer strip will be required landward of the resource area. It shall consist of natural indigenous vegetation and shall be a minimum of twenty-five (25) feet in width depending on factors below. The Commission may also require that a buffer strip be created where none presently exists to mitigate past buffer alterations. No work will be permitted in the buffer strip except limited vegetation removal or reduction and work necessary to maintain the buffer strip as described under elements of buffer strip.

(2) Between twenty-five (25) and fifty (50) feet landward of the resource area, only activities that protect or enhance the wetland interests and values protected under the Act and the Orleans Bylaw will be permitted. It is the Commission's intent to maintain a fifty-foot buffer strip. In determining the feasibility of such a width, the Commission may consider the prior use of the specific area as well as other factors such as the topography, size and configuration of the lot and the impact of a setback of the applicant's ability to obtain substantially the view sought or the desired location of the proposed structure. For new construction, in no instance should the "limit of work" area extend into the fifty-foot area. Notwithstanding the previous statements, landscaping which includes selective vegetation removal and replacement, and selective pruning, and vista cutting, may be permitted at the discretion of the Commission upon clear and convincing evidence that the wetland values noted above will be protected.

(3) Between fifty (50) and one hundred (100) feet landward of the resource area, alterations, including construction, will only be permitted where such work can be conditioned by the Commission to fully satisfy the required standards of protection to the wetlands interests identified in the Act and the Orleans Bylaw.

(4) When considering guidelines for work in the buffer zone, the site specificity and precedence provision enumerated in § 196A-3K of these regulations should be noted.

(5) Installation of underground utilities (gas mains, water mains, power lines, etc.) within the buffer zone are to be considered as new construction and must be conditioned as such. Any installation within the 50-foot buffer strip of a resource area will require a variance from the regulations.

(6) When situating a new building or an addition within the 50 to 100-foot buffer zone, where feasible the structure should be set back at least 75 feet from the resource area to allow for passage between the building and the 50-foot buffer and to avoid the intrusion of lawn in the 50-foot buffer.

D. Buffer strip.

(1) Goal: The goal of the Commission is to maintain a strip of dense, vegetative cover between the development activity and the resource area to be

protected, consisting of indigenous plant materials suitable for the maintenance of wildlife, both flora and fauna.

(2) Function: A buffer strip serves to provide wildlife habitat, improve water recharge, reduce pollution and erosion and to maintain the natural appearance of our fresh and saltwater shorelines.

(3) Size of buffer strip:

(a) Such a strip shall be a minimum of twenty-five (25) feet in width running along the resource area boundary, unless such width is unreasonable in view of the lot size, placement of an existing structure or such other factors as the Commission may consider.

(4) The elements of the buffer strip should reflect the indigenous vegetation suitable to the site.

(a) Coastal banks should be protected from run off and erosion by planting adjacent areas with at minimum low growing salt tolerant shrubs such as roses (*Rosa virginiana*, *Rosa Carolina*), bayberry (*Myrica pensylvanica*) and beach plum (*Prunus maritime*), and/or a border of field grasses mowed only once a year between October and March to a minimum height of 3 inches.

(b) Approval may be granted to maintain dense plantings at the top of a coastal bank at a three-foot height where necessary for view preservation. Fast-growing shrubs such as *Rosa rugosa* may be pruned to permit regrowth from the plant's base.

(c) Freshwater wetlands should retain their bordering native pond shore shrubs such as blueberry (*Vaccinium corymbosum*), swamp azalea (*Rhododendron viscosum*), sweet pepperbush (*Clethra alnifolia*), inkberry (*Ilex glabra*) and herbaceous plants that grow on the edge of the wetland and on to the bank; for example, blue joint grass (*Calamagrostis canadensis*), rushes (*Juncus effuses*, *J. canadensis*) and thoroughworts (*Eupatorium hyssopifolium*, *E.perfoliatum*).

(d) Where new plantings are permitted in the order of conditions, slow release fertilizer may be required. The use of pesticides should be limited but if needed, I.P.M (integrated pest management) or best management practices should be utilized. Consult Barnstable County Extension Service for further details of I.P.M.

(e) Plantings which require heavy watering will not be permitted, particularly adjacent to coastal banks where such watering may result in runoff and erosion.

(f) An access path, not more than four (4) feet wide through the strip may be maintained by such mowing as is required.

(5) Permissible work in buffer strip: While it is the Commission's intent that no work shall occur in this strip, any work which is proposed must meet a higher performance standard than work proposed elsewhere in the buffer zone, and will generally be limited to habitat improvement or vista cutting. Vista cutting

is limited to pruning, lifting and clearing as defined below. Habitat improvement is described under Subsection G, Wildlife habitat.

(6) Mitigation:

(a) The Commission may require that a buffer strip be created where none presently exists to mitigate past or present construction impacts.

E. Pruning, cutting, clearing and planting.

(1) Filing requirements: All proposed cutting, pruning, clearing, planting and other vegetation alteration projects require the filing of a request for determination, a notice of intent, or an administrative review. Such filings should use the definitions below. All such proposed work shall be done in consultation with and under the supervision of the Administrator.

(2) Alterations within a resource area or buffer strip: Cutting, removal or other destruction of aboveground vegetation within a resource area as defined in § 196A-2 of these regulations or within a buffer strip as defined above will be limited to vista cutting and pruning. If a buffer strip is to be maintained in grasses or as a wildflower meadow, other appropriate vegetation removal may be approved.

(3) Identification of specific view: View clearing in the buffer zone or vista cutting and pruning in the buffer strip or resource area will not be permitted until construction is completed and a specific view identified after occupancy. Applicants are encouraged to consult with the Commission before submitting the appropriate filing and when planning projects that involve the removal or replacement of vegetation in the buffer zone, buffer strip, or resource area.

(4) Definitions: As used in this section the following terms shall have the meanings indicated:

CUTTING — The removal of vegetation.

CLEAR CUTTING — Removal, to the ground, of all woody vegetation, including mowing of understory brush down to a minimum height of two (2) inches.

SELECTIVE CUTTING — The removal of smaller, weaker, dead and less desirable tree species, leaving the more vigorous and native trees.

VISTA CUTTING — The removal of vegetation that blocks a view.

PRUNING — The removal of branches or parts of branches on shrubs and trees.

SELECTIVE PRUNING — Removal of dead, diseased, obstructing, and weak branches or parts of branches, as well as selective thinning of branches to lessen wind resistance.

LIFTING — Lifting of the canopy by removing lower limbs from the main trunk.

(5) Criteria.

(a) When selective pruning of trees is permitted, the removal of such branches shall be as described above for removal of dead, diseased, obstructing and weak branches as well as thinning of branches to lessen wind resistance. When pruning of shrubs is permitted, the shrubs shall retain their natural shape and features such as fruits and flowers by selecting the optimum height for the shrub and pruning different branches in alternate years. With prior approval, Top of coastal bank plantings such as *Rosa rugosa* may be pruned to a minimum of three feet yearly.

(b) Cutting.

[1] When cutting of live trees is proposed, the Commission will require that pruning and thinning the canopy shall be accomplished first. When cutting is the only viable option in a heavily vegetated lot the Commission may allow the removal of up to 5% of existing trees greater than or equal to (>) 6 inches diameter at breast height, or 10% of existing trees less than or equal to (<) 6 inches diameter at breast height in any 3-year period under an administrative review. All trees proposed to be removed must be clearly delineated on-site within three days of application to the Commission.

[2] For proposals involving the cutting of additional trees, the Commission may require the filing of a notice of intent. Specific specimen trees may be identified by the Commission for preservation.

(c) When removal of trees is desirable after storm damage, the Commission may allow removal of greater than (>) 5% of the trees.

(d) Dead and diseased trees may be removed if they endanger a structure or live vegetation. Flush cutting rather than uprooting will be required in some cases.

(e) When lifting is proposed, the health of the tree must be considered as well as the impact to wildlife. In no instance shall more than 1/3 of the above ground trunk height be pruned.

(f) Except for the clearing of land for the construction of buildings, clear cutting is prohibited except with special permission through a notice of intent. In those instances, all stumps are to be left in the ground and cut flush.

(g) When vista pruning/cutting is proposed, the Commission encourages that specific windows of view (containing top, sides and bottom) be opened on identified views and prohibits "property line to property line" cutting. Vista cutting can be normally accomplished through pruning and lifting, although topping of trees may be permitted in specific cases. Clear cutting for a view is prohibited.

(h) The Commission may require the replacement planting of native shrubs and trees in areas proposed for tree removal, especially if the proposal is to remove greater than 5% of existing trees.

F. Lawns:

(1) Preamble. Lawn fertilization can be a major source of excess nutrients that leach into groundwater or are washed off into roads that lead to water bodies causing eutrophication, unwanted algal blooms, oxygen depletion, fish kills and foul odors. The extent of such eutrophication will depend upon the amount of nutrients added and the flushing capacity of the receiving waters. Insecticides and herbicides used to maintain lawns also contaminate our waters.

(2) Requirements. Grasses with their fibrous root system tend to be excellent stabilizing plants especially on steep slopes. The same factors that affect trees and shrubs also influence the health of grasses.

(a) For any lawns that are to be planted within 100 feet of a resource area, a minimum of 4-6 inches of loam is required prior to planting. This will improve conditions for the lawn and also reduce chances of nutrient leaching through the soil.

(b) Only hardy species of grass that require little or no fertilizer and those that can tolerate drier conditions are allowed such as a mixture of fescues, ryegrasses, etc.

(3) Fertilization.

(a) Fertilization may be allowed only when grasses are actively growing using slow release or controlled release nitrogen source of 25% or more as a component of the total nitrogen analysis. It is further suggested that no more than one (1) pound of total nitrogen per 1,000 square feet (sq. ft.) be applied at any one time to reduce potential leaching from the site of application.

(b) A split application, (spring and fall) is also preferable as opposed to one application of the entire amount.

(c) Liming at a rate of 100 pounds per 1,000 square feet is a general recommendation rate for Cape Cod but a soil test will indicate the proper amount required.

(4) Herbicide/pesticide use.

(a) Because Cape Cod is such an environmentally fragile area, the Commission suggests limited use of herbicides and pesticides. When either is absolutely required, the Commission recommends that professional advice be sought and that licensed applicators be employed if the area to be treated is of considerable scope.

(5) Buffer strips and lawns.

(a) In conjunction with any lawn, a buffer strip must be maintained to provide a border between the resource area and the human impact area of the property.

G. Wildlife habitat. See § 160-4 OWPB.

(1) Preamble: The Commission encourages the preservation of indigenous vegetation for environmental protection and also because of its important function as wildlife habitat. Plants that are sometimes regarded as

“trash” species are often used by wildlife for important functions such as nesting, feeding and protective cover sites. For example, fox grape and other vine-like plants are used as food sources and nesting sites by both native and migratory species. Dead trees, often considered undesirable, are used as nesting and perching sites for a variety of birds and mammals, and as a food source by insect-eating birds. Dense understory in wooded areas may provide nesting sites, travel corridors and protective cover for a wide variety of fauna. In addition to its aesthetic value, wildlife also serves to maintain a natural “checks and balances system” within various ecological communities. A well known example of this balance is the predation of birds acting to control the populations of various insects.

(2) Habitat improvement: Different groups of native plants make up various habitats, such as a sand plain grassland or pond shore shrub community. These native plant communities or habitats are often overrun with non-native and/or invasive species such as bittersweet, honeysuckle, bamboo, etc. Although these species may provide some cover and food for some animals, the native wildlife is dependent on the local native plant species that these are replacing. Removing non-native plants and replacing them with native species suitable for each habitat can improve the habitat. Within the 50-foot buffer zone only native non-invasive species may be planted (with the exception of Japanese rose [*Rosa rugosa*] on coastal banks). Non-native non-invasive plants may be used outside the 50-foot buffer zone, though the Commission emphasizes the advantages of using native species well adapted to Cape soils and weather conditions.

Supporting a greater variety of wildlife is possible by increasing food sources and providing maximum protection. Both are achievable by providing a full range of plant species types for each vegetation layer: the lower level with groundcovers, grasses and wildflowers; the middle layer with shrubs and small trees; and the upper canopy with large trees. Removal of the shrub layer or lifting all the trees would eliminate food sources, reduce protection and prevent some species from nesting or denning on the site. However, the Commission encourages the removal and replacement of invasive species such as bamboo, phragmites, bush honeysuckle, autumn olive, etc. with native species if it can be shown that such removal and replacement will enhance or protect wildlife habitat.

No landscaping or vegetation plan associated with any application to the Conservation Commission should propose the use of plant species listed on the Orleans Prohibited Plant List, which is available in the Conservation Department. Planting of invasive plants anywhere within the 100-foot buffer is strictly prohibited.

(3) Presumption of significance:

(a) The Commission presumes that wildlife will be protected when sufficient open space is left in its natural state to support the indigenous populations of mammals, birds, reptiles, amphibians, and fish.

(b) The Commission maintains a list of plants recommended for landscaping.

H. Limit of work. All development activity shall be contained within a defined building envelope as determined by the Commission. The limit of work line as shown on the plan is, therefore, a strict limit, and any work outside this line (including pruning) will require an amended order of conditions or a new filing.

I. Erosion control.

(1) Methods of erosion control: Planting of appropriate grasses, shrubs and trees and the use of buffer strips, catch basins, dry wells, diversion ditches, contour terraces, stone trenches earthen dams, grassed waterways, etc. are all recognized erosion control measures and are to be utilized in appropriate places considering specific sites.

(2) A fabric silt fence is the preferred method of protecting downside areas from erosion during the construction phase. This erosion control method must be shown on the submitted plan and installed on the contour in order to prevent runoff and erosion. It must be maintained intact until the disturbed area is stabilized and revegetated. Straw or hay bales should only be used to support fabric silt fences in steep terrain or wherever else is deemed advisable to protect the buffer zone. The bales must also be maintained intact and the disturbed area must be revegetated as soon as the bales are removed.

(3) The silt fence or haybale barrier may also serve to delineate a portion of the limit of work on the site and may be required to confine the construction activity as well as to prevent erosion. These must also be placed on the contour.

(4) Revegetation/mulching requirements.

(a) Any activity that denudes or bares 50 square feet or more of ground surface within 100 feet of a resource area requires immediate seeding of a fast germinating grass such as annual rye grass. Native grass mixes or native groundcovers must be used within 50 feet from the edge of a resource area.

(b) This area must be covered with a light mulch to enhance germination and to assist in prevention of runoff.

(c) Construction sites must have some method of erosion control to prevent sedimentation into roadways as a result of the bare ground.

(d) Erosion control methods may also apply to certain areas outside the jurisdiction of the Conservation Commission. [See § 196A-2B(3).]

§ 196A-8. Estuaries and ACECs in Orleans.

A. Preamble.

(1) An Area of Critical Environmental Concern (ACEC) is established under MGL ch. 21A Section 2 (7). Pleasant Bay and Inner Cape Cod Bay have been so designated. The landward extent of the Inner Cape Cod Bay ACEC is the 10-foot contour. The landward extent of the Pleasant Bay ACEC is the 10-foot contour plus 100 feet. The additional 100 feet beyond the 10-foot contour included with the Pleasant Bay ACEC is important in reducing anthropologic effects to the water body

such as siltation from erosion caused by increased runoff from pavement and buildings or pollution from hydrocarbons or pesticides in the runoff. For the same reasons, this additional protection is also necessary for the Inner Cape Cod Bay ACEC. The natural components of both ACECs include barrier beach systems, dunes and sandy beaches, acres of salt marsh, productive shellfish habitat, large estuaries, anadromous fish runs, floodplain, and extensive areas for boating and swimming. The estuaries are habitat for upland species and waterfowl as well as a spawning and nursery ground for many marine species. The beaches, dunes and marshes protect adjacent upland from storm damage.

(2) Clean water must be maintained to protect the marine resources as well as the public health of recreational boaters, fishermen and swimmers. The biological productivity of these estuarine systems is sustained by the contiguous salt ponds and salt marshes that contribute large quantities of nutrients, carbon and energy to the coastal food chain. Minimum alteration of the natural features of the ACEC allows them to function at their natural capacity. These undeveloped expanses also contribute to the scenic beauty enjoyed by Orleans residents and visitors.

B. Performance standards.

(1) The standard of performance that must be met by proposed development activities in and adjacent to an ACEC is “no adverse effect” – 310 CMR 10.24(5). It is the responsibility of the applicant to show, using credible evidence from a competent source, that the proposed activity will have no adverse effect, either immediate or cumulative, on the ACEC resources. Additionally, there shall be a performance standard of no adverse impact within 100 feet of the 10-foot contour for the Inner Cape Cod Bay ACEC.

(2) Since the Nauset/Town Cove estuary shares all the same characteristics of both the Orleans ACECs, the Commission herein sets the same performance standard of no adverse impact for the Nauset/Town Cove estuary. The Nauset/Town Cove estuary will be defined as 100 feet from the 10-foot contour.

§ 196A-9. Land subject to flooding or inundation by groundwater or surface water.

This section 310 CMR 10.57 is incorporated subject to the changes below.

A. Preamble.

(1) State regulations at 310 CMR 10.57(3)(b)(1) read “Isolated Land Subject to Flooding is an isolated depression or a closed basin which serves as a ponding area for runoff or high groundwater which has risen above the ground surface.” Section 10.57(2)(b) reads “Isolated Land Subject to Flooding is an isolated depression or closed basin without an inlet or an outlet. It is an area which at least once a year would confine standing water to a volume of at least 1/4 acre-feet and to an average depth of at least six (6) inches.”

(2) Rationale for the change in size in these regulations (see below) is the many small flooding areas which provide filtration and recharge of runoff into the groundwater and the many kettle holes characteristic of Orleans which at times intersect the water table but which are often considerably smaller than the area protected by state regulations. Many of these kettle holes as well as our small

ponds, are, or may be, connected hydrologically. With growing concerns about the quality and quantity of our water supply and the quality of our surface waters, the Commission believes a greater degree of protection for isolated land subject to flooding is appropriate until further information proves otherwise.

(3) Greater protection will also be provided for many small but significant areas of wildlife habitat which provide seasonal wetland habitats and essential breeding sites for certain amphibians requiring isolated areas that generally flood in the spring and/or summer. Many birds, reptiles and mammals also depend upon these wetlands as a source of food, shelter and breeding habitat. Such wildlife and its habitat also contribute to our recreational and aesthetic enjoyment.

B. Definition. Isolated land subject to flooding (ILSF) is a depression or closed basin without an inlet or outlet, which serves as a ponding area for runoff of fresh water or for high groundwater which, because of an elevated water table, has risen above the ground surface. ILSF is land which at least once a year, except during periods of drought, confines standing water to a volume which would cover no less than 650 square feet at an average depth of two inches.

C. Boundary. The boundary of an area of land subject to flooding shall be determined by one or more of the following, depending upon the availability of information. Where more than one method is possible, the method leading to the largest area shall be used. That boundary shall be:

(1) The line enclosing that area having a vegetative cover of 50% or more of freshwater species as defined in § 196A-4 of these regulations or

(2) The line enclosing the largest observed or recorded area of water confined in said area, or

(3) The area calculated to be inundated by runoff from the 100-year storm. Such calculation shall be done in accordance with 310 CMR 10.57 (2)(b)(3).

D. Presumption. Where a project involves removing, filling, dredging or altering of land subject to flooding (both bordering and isolated areas) the Commission shall presume that such an area is significant to the following interests specified both in § 196A-1A of these regulations and 310 CMR 10.57(1)(a)(b): public and private water supply and quality, groundwater supply and quality, flood control, prevention of pollution, wildlife habitat and to the interests of aesthetics and recreation.

E. Performance standards. A proposed project that may result in alteration of an isolated wetland shall not result in the following:

(1) Flood damage due to filling which causes lateral displacement of water that would otherwise be confined to such area.

(2) An adverse effect on public or private water supply or groundwater supply, where such area is underlain by pervious material.

(3) An adverse effect on the capacity of said area to prevent pollution of the groundwater, where the area is underlain by pervious material which in turn is covered by a mat of organic peat, or muck or vegetation.

(4) An impairment of its capacity to provide for wildlife habitat, including seasonal wetlands (vernal pool) habitat as determined by § 196A-4 of these regulations.

§ 196A-9A. Land subject to coastal storm flowage.

A. Preamble.

Land Subject to coastal storm flowage – including but not limited to coastal beaches, salt marshes, banks, barrier beaches, salt ponds, dunes, land containing shellfish, land under the ocean, and banks of and land underlying fish runs – is important for the protection of public and private water supply, groundwater and groundwater quality, flood control, erosion and sedimentation control, storm damage prevention, water pollution prevention, wildlife habitat, fisheries, shellfish, and to the interests of aesthetics and recreation.

Land subject to coastal storm flowage extends from mean low water to the calculated extent of a 100-year storm. During extreme high tides and hurricanes the ability of the land to absorb floodwaters is important to buffer inland areas from flood and wave damage. The more gentle and permeable a seaward-sloping land surface is, the more effective that land surface is in reducing the height and velocity of incoming storm waves. Dredging of land subject to coastal storm flowage has the potential of allowing storm waves to break further inland and to impact other areas which might not otherwise be affected. Filling of land subject to coastal storm flowage is likely to cause displacement of flooding consequences to other areas.

Those portions of coastal floodplains which are immediately landward of salt marshes, coastal beaches, barrier beaches, coastal dunes, or coastal banks, require special protection. As sea level rises, these areas will be inundated more frequently by storm and tide. Activities carried out within these traditional areas may interfere with the natural landward migration of the adjacent coastal resource area.

B. Presumption. Where a project involves removing, filling, dredging or altering land subject to coastal storm flowage, the Commission shall presume that such an area is significant to the following interests specified both in §196A-1B of these regulations and 310 CMR 10.57 (1)(a)(b): the protection of public and private water supply, groundwater and groundwater quality, flood control, erosion and sedimentation control, storm damage prevention, water pollution prevention, wildlife habitat, fisheries, shellfish, and to the interests of aesthetics and recreation.

C. Performance standards. A proposed project that may result in alteration of land subject to coastal storm flowage shall not cause or create the likelihood of the following:

- (1) Reduction in the ability of the land to absorb and contain waters.
- (2) Reduction in the ability of the land to buffer more inland areas from flooding and wave damage.

- (3) Displacement or diversion of floodwaters to other areas.
- (4) Damage to other structures or property.
- (5) Pollution of groundwater, surface water, or salt water.
- (6) Reduction of an area's capacity to provide for wildlife.
- (7) An increase in the elevation or velocity of floodwaters.
- (8) Prevention of the migration of resource areas such as salt marshes due to sea level rise.

ARTICLE IV Specific Activities Regulated

§ 196A-10. Preamble.

Under the Bylaw, activities in the following areas are subject to conditions by the Commission. The complexity of these activities warrants the specific requirements set forth below.

§ 196A-11. Docks (piers).

A. Preamble.

(1) For the most part, docks provide private, not public, access to resources which are, themselves, public, and upon which dock construction and use impacts are adverse. Docks and piers are also subject to Orleans Zoning Bylaws.

(2) These adverse impacts cover a broad range. Turbulence and prop dredging generated by boat traffic to and from docks significantly increase turbidity levels that block sunlight necessary for the photosynthetic processes upon which the productivity of our waters depend. Suspended sediments cover shellfish habitat, smothering existing shellfish and altering the quality of the sand bottom essential for spat (mollusk larvae) settlement. Dock structures alter the circulation patterns that affect shellfish settlement. Prop dredging in near shore areas destroys shellfish habitat. Boat traffic generated from docks adds to this disruption and causes erosion of banks and marshes.

(3) Marshes, which provide the food chain for many species of sport and commercial fish and shellfish as well as other wildlife, are also affected. The shaded conditions docks produce can cause a decrease in plant height, population density and leaf thickness as well as alteration of species composition. Reductions in plant density result in loss of sediment normally trapped by roots and culms. Tidal washouts and localized depressions result which concentrate salt through evaporation of trapped water preventing recolonization by the original vegetation. The marsh's ability to absorb wave energy as well as the marsh's contribution toward maintaining ground and surface water quality is also adversely impacted. Displacement of marsh areas by dock pilings and the area immediately surrounding them results in marsh loss. This loss can be substantial when the cumulative impact of increasing numbers of docks is considered.

(4) Docks also impact recreational interests by restricting areas where boating may freely occur.

(5) Cumulative impacts of dock proliferation 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.

B. Presumptions: Docks are one of the few activities which come before the Commission for regulation which occur entirely within resource areas, i.e. beaches, flats, salt and freshwater wetlands, land under both salt and fresh water bodies, land subject to tidal action, to flooding and to coastal storm flowage. Collectively, these resource areas are presumed significant to all the interests protected under both the Act and the Orleans Wetlands Protection Bylaw, Chapter 160. Furthermore, almost without exception, docks occur in ACECs or in the Town Cove/Nauset estuary system where the performance standard requires that there be no adverse impact upon the interests protected by the Act and Orleans Bylaw.

C. Pleasant Bay Resource Management Plan. The Pleasant Bay Resource Management Plan, which has been approved by the Commonwealth of Massachusetts and adopted by the Town of Orleans, provides a framework for state and local permitting of docks and piers in Pleasant Bay. The plan concludes that a significant portion of the shoreline of the ACEC is resource sensitive and not appropriate for siting new docks and piers. In the remaining areas of shoreline within the ACEC, the plan calls for revised standards and criteria to be used in evaluating proposals for docks and piers.

The resource assessment incorporated into the Pleasant Bay Resource Management Plan concludes that the areas listed below are extremely resource-sensitive and therefore are not appropriate for siting new private docks and piers. The resource management plan recommends that the construction of new private docks and piers or the extension of existing private piers be prohibited in these areas.

This recommendation does not apply to existing licensed piers or the maintenance of existing licensed piers.

(1) Quanset Pond, from the westerly boundary of the property with Map and Parcel Number 93-9 to the easterly boundary of the property with the Map and Parcel Number 93-12.

(2) On the northside of Big Pleasant Bay and through the Narrows, from the westerly boundary of the property with Map and Parcel Number 93-17 to the northerly boundary of the property with Map and Parcel Number 89-11, and the western shore of Sipsons Island from the northerly boundary of the property with Map and Parcel Number 94-7 and all contiguous properties running counterclockwise to the southerly boundary of the property with Map and Parcel Number 94-10.

(3) From the entrance channel of Paw Wah Pond beginning at the southerly boundary of the property with Map and Parcel Number 76-16, and continuing through the River Complex to the southerly boundary of the property with the Map and Parcel Number 64-7, including Paw Wah, Arey's and Meeting House Ponds, the Namequoit River and The River.

(4) Pochet Inlet, from the southerly boundary of the property with Map and Parcel Number 65-02 and continuing northward to the southerly boundary of the property with Map and Parcel Number 52-11, and including the eastern shore of Pochet Inlet.

The Pleasant Bay Resource Management Alliance has adopted standards for applications for new docks and piers. The considerations resulting in these standards have equal application to the Inner Cape Cod Bay ACEC and to Town Cove/Nauset Estuary which, under these regulations, is treated as if it were an ACEC.

D. Requirements.

(1) The dock is located more than 500 feet from any other dock to which the owner has or can obtain legal access.

(2) The dock location is not within a shellfish area identified by the Orleans Shellfish Constable or within shellfish habitat as defined in the Bylaw. No project which would require removal and/or replanting of shellfish in an ACEC will be permitted (310 CMR 10.34).

(3) The depth of water at the dock's seaward end is at least 2.5 feet at all times and is of sufficient depth to be navigable with or without a motor at mean low tide without prop dredging or other disturbance of the bottom except that caused by poling or walking.

(4) The dock shall not impinge upon any channel used by either commercial or recreational boaters and shall not impede navigation in any other way.

(5) The dock is seasonal in construction.

(6) The structure does not impede legitimate passage for fishing, fowling and navigation and sufficient open water is maintained to sustain a variety of activities including but not limited to fishing, swimming and sailing.

(7) The landward approach to the dock must not harm the vegetation on the marsh or bank.

(8) The project is the least intrusive structure which will meet the applicant's goals but will also be the most protective of the wetland resources and values. The applicant must show that all alternatives to the proposed structure have been thoroughly investigated and that the proposed structure will provide at least as great protection to the wetland values cited herein as a less intrusive alternative or the greatest protection to the wetland values cited in the Act and the Bylaw. These alternatives include but are not limited to the use of an offshore mooring with dinghy access, dock sharing, use of a town dock, reduction in the size of the structure, use of a haul rope and the no build alternative.

(9) Where possible the proposed structure should serve several lots if by so doing it reduces the total number of structures along the coast and does not increase the density of use which would otherwise obtain. Town docks are exempted.

(10) The structure must meet the following criteria:

(a) It shall not exceed eighty (80) feet in overall length, including stairs, ramps and floats, measured from mean high water.

(b) It shall not exceed four (4) feet in width as measured from the outside of the structure.

(c) It shall not exceed a height of four (4) feet above mean high water.

(d) Pilings shall not exceed 4x4 inches and shall be spaced at least eight (8) feet apart.

(e) There shall be a minimum of one inch spacing between deck planks.

(f) The float size shall not exceed three hundred (300) square feet in area and a "T" configuration of the pier and float will be preferred.

(g) Docks should be sited perpendicular to the coastal bank and, where possible, a north/south orientation will be preferred.

(h) Docks must be erected no closer than fifty (50) feet from existing boating channels, mooring areas or eelgrass beds.

(i) Docks must be set back at least fifty (50) feet from the property line, except that docks shared by contiguous properties must be at least fifty (50) feet from the outermost boundary of the contiguous properties.

(j) No docks should be closer than two hundred fifty (250) feet from the nearest dock or boat ramp.

(k) Use of non-leaching treated materials is encouraged to prevent the profusion of broken-off, rotted pilings. Installation shall be by boat or floating barge and shall be in accordance with a design and installation plan prepared by a licensed engineer.

(11) For any dock permitted herein, the applicant must also receive appropriate licenses from the Commonwealth of Massachusetts and the U.S. Army Corps of Engineers. Proof of such licenses shall be forwarded to the Commission before a certificate of compliance will be issued.

(12) The following special conditions will be applied to all docks:

(a) Human habitation, toilets and the storage of gasoline, oil, grease or other pollutants on any portion of the dock will not be permitted.

(b) No electric lighting will be permitted.

(c) No commercial activity will be conducted on the dock without the prior approval of the Commission.

(d) The dock shall be removed before December 1 and not be re-installed before April 1. Storage of dock components shall be in a location shown on an approved plan.

E. Determination of potential shellfish habitat. In areas where it is unknown if the area is likely to be a habitat for shellfish, the applicant may be required to submit evidence of shellfish populations based on a shellfish survey conducted by a qualified shellfish biologist. Survey shall include existing populations of all sizes of commercially important species of shellfish (clams, quahogs, scallops, mussels) and shall also include other species of mollusks that may determine predator/prey relationships and food preferences (i.e. filter feeders or deposit feeders). The presence of these species may indicate the capacity of an area to support commercially important species. The survey shall also include a description of shell fragments to the best extent possible and the survey must also include references to historical information regarding presence or absence of shellfish species.

F. Maintenance of docks and piers.

(1) Replacement of decking, stringers and railings, ramps or floats will be permitted, in accordance with approved plans on file as a routine matter. Replacement of pilings, pipes, or other components in the ground will require the filing of a request for determination of applicability. Any construction not in accordance with plans on file will require a notice of intent.

(2) Maintenance of unlicensed docks and piers will require the filing of a notice of intent. Applicants should be aware that the Commonwealth of Massachusetts has the authority to remove any dock that was not properly licensed by October, 1995.

(3) Reinstallation and repair of seasonal docks will be permitted as a matter of course and will require no filing.

G. Alteration of licensed docks. For any dock licensed by the DEP and approved by the Town of Orleans, any enlargement in height, total footprint including but not limited to addition of size or number of floats, or any movement of the structure relative to its shoreline position, will require the filing of a notice of intent. Changes to the dock must be acceptable to the DEP under the existing license or a new license must be requested and approved before making changes to an existing dock. If a new license is requested the dock must meet all current regulations for docks.

H. Licensing of docks and piers.

(1) All existing permanent and seasonal docks and piers in the Town of Orleans must also be licensed by the Massachusetts DEP Division of Waterways, Chapter 91 licensing procedure and by the U.S. Army Corps of Engineers and must also have a valid Order of Conditions from the Orleans Conservation Commission and the DEP. Owners of unlicensed docks and piers must have filed a notice of intent by September 30, 1996.

(2) Amnesty licensing: Under the amnesty licensing procedure for all unlicensed docks, either in or outside of an ACEC, a notice of intent shall be required accompanied by an engineered plan and providing the information required in the "EOEA Pier Guidelines Checklist" and in the list of submission requirements prepared by the Orleans Conservation Commission. The engineered drawing is to be on the dock as it presently exists. The only changes in an existing

dock design that the Commission will consider are those which reduce the scope and impact of the project.

(3) Interim licensing: Interim licensing must meet the same requirements listed above under amnesty licensing unless the applicant can show that the dock is of such minimal proportions and impact that a lesser application will suffice to provide the Commission with adequate baseline information on the dock's structure, its location and its environmental impacts.

(4) Section 196A-8B of these regulations sets specific performance standards for ACECs and adds the Nauset/Town Cove estuary as requiring no adverse impact on the resources.

(5) Approval of existing unlicensed or licensed docks or new docks: Approval and issuance of an order of conditions for an unlicensed dock, even if existing, is not guaranteed and the Commission will consider the structure under current regulations. Approval of a licensed dock will take into consideration the Ch. 91 license, but where the Commission finds egregious environmental impacts such as loss of shellfish habitat or prop scour or the structure is clearly over-designed, the Commission may deny the project and require its removal or alteration. An applicant will have the burden of demonstrating by a preponderance of credible evidence that there will be no adverse effect either immediate or cumulative.

§ 196A-11.1. Walkways.

A. Definition and general restrictions

(1) A walkway is an elevated or at-grade structure used as a walkway to traverse fresh or salt meadow, marsh, bank, dune, or beach. It differs from a dock in that it begins and terminates above mean high water, even though it may cross over a point that is below mean high water.

(2) A walkway may not be attached to a float or structure which would facilitate its use by boat.

(3) A walkway may not be permitted in the future as a pier or a dock unless it meets all the criteria for a new dock.

B. Performance considerations. A walkway may be permitted in cases where it can be demonstrated to improve the condition of a resource area and when such demonstrated improved condition exceeds the benefit that could be reasonably expected from a restoration effort; or where it can be demonstrated that irreparable erosion and destabilization of a resource area would result from informal access. The owner of the property on which the structure is proposed should submit for review a notice of intent and any other required applications, including clear delineation of property boundaries. In demonstrating the potential improved condition of or preventive benefit to the resource area, the following potential impacts must be considered:

(1) The extent of existing erosion or degradation of vegetation or substrate resulting from foot traffic must be evaluated. Reasonable efforts to regenerate damaged resource areas should be fully explored.

(2) The presence or absence of habitat must be determined. There should be no loss or degradation of habitat for shellfish, finfish, birds, reptiles or other animals, or of fish runs resulting from the proposed structure.

(3) There should be no detrimental impacts on vegetation caused by the proposed structure.

(4) There should be no significant alteration in wind patterns and littoral processes resulting from the proposed structure.

(5) There should be no undue detriment to public views resulting from the proposed structure.

(6) There should be no loss or degradation of public access opportunities resulting from the proposed structure.

(7) There should be no other detrimental impact caused by the proposed structure.

(8) The cumulative effect of the proposed structure must be considered. Cumulative effects are the combined effects Subsection B(1) through (7) of all existing structures within the same resource system.

(9) Impacts on the resource from the use of the proposed structure must be determined. The frequency, volume and intensity of use must justify the need for the structure. Shared use structures are to be encouraged as a means to provide access to the shore while minimizing the number of structures that might otherwise be permitted.

C. Design standards for walkways.

(1) Setbacks. Setbacks from property lines and structures provide a way to reduce density, and the associated intensity of impacts on resource areas, and to encourage shared use structures.

A walkway should be located where it will have the least impact on or can improve the condition of a resource area. A setback of one hundred, but no less than fifty, feet from the property boundaries is preferred unless the structure will be owned and used by two or more contiguous property owners. In such cases the setback requirement may apply to the outermost boundaries of the two or more contiguous properties so that the structure may be placed on a shared property line.

The structure must be at least 500 feet from another structure to which the owner has or can reasonably obtain legal access.

(2) Height and width. The height of the structure at all points above the marsh shall be equal to or exceed the width of the deck. For the purpose of this condition, height shall be measured from the marsh substrate to the bottom of the longitudinal support beam. The height shall not go above three feet or below one foot as measured from the substrate or, in the case of a creek, mean high water. The laying of planks directly on the ground or substrate is prohibited.

The height of a structure is necessary to allow sufficient light penetration to underlying vegetation, and to prevent storm damage. The height maximum is to protect the natural appearance of the resource area. Similarly, the width limitation is intended to limit adverse impacts on vegetation.

(3) Plank spacing. No less than three-quarter inch spacing is required between planks to allow light penetration for vegetation. Alternate decking material may be used if it provides a similar or greater degree of light penetration.

(4) Pile size and spacing. Piles shall not exceed 4 inches x 4 inches and should be spaced a minimum of eight feet apart to minimize the impact of installation to the underlying substrate. The use of helical or other alternate technology pilings, or seasonal stub piles, that can be demonstrated to minimize impacts on the substrate, should be encouraged.

(5) Railings. The use of railings should be avoided unless a need can be demonstrated or to conform to the applicable building code.

(6) Orientation. A north to south orientation of the structure results in maximum sunlight penetration to underlying vegetation, and is preferred wherever feasible.

(7) Seasonal installation is encouraged. Permanent 4 x 4 stub piles with removable planks or sections are preferred to prevent storm damage to the structure and potential impacts from storm debris on the adjacent marsh area. The term "seasonal" is intended to mean six months or, generally, May 1 through October 31. Permanent structures may be permitted in cases where the structure will be used consistently year-round, or in cases where more than one property owner is sharing use of the structure.

(8) Materials. Use of non-leaching materials such as plastic lumber and other such building materials that do not leach pollutants into the aquatic ecosystem are preferred over CCA-treated lumber. Use of treated materials is allowed because they minimize the incidence of rotting in structures. Creosote-treated lumber is prohibited.

(9) Installation. Installation should be accomplished with minimal disturbance to surrounding soils or vegetation, using methods in the applicable order of conditions, as determined on a case-by-case basis. A design and installation plan approved by a licensed engineer or surveyor is preferred.

(10) Storage. All removable portions of seasonal structures must be removed using practices that minimize impacts on the resource, and be stored outside the resource area unless otherwise specified in the applicable order of conditions.

(11) Lighting. No electric lighting will be permitted.

D. ACEC. In an ACEC the "no adverse effect" performance standard shall apply.

§ 196A-11.2. Docks in a freshwater resource area.

A. Definitions.

(1) A dock in a freshwater resource area is an elevated structure used to access the water beyond the shoreline.

(2) Freshwater resource areas encompass, but are not limited to, all ponds, great ponds, rivers, intermittent streams, and bordering vegetated wetlands (BVW). Some of these resource areas may be brackish through connections to saltwater bodies. Shoreline structures that are proposed below mean high water within great ponds must obtain a Chapter 91 License from the Massachusetts Department of Environmental Protection (DEP).

B. Performance considerations.

A dock in a freshwater resource area may be permitted in cases where an improvement to the condition of the resource area can be demonstrated and when such demonstrated improved condition exceeds the benefit that could be reasonably expected from a restoration effort. A dock may be approved where it can be demonstrated that irreparable erosion and destabilization of a resource area would result from informal access.

New or expanded structures will not be allowed if any of the following criteria apply:

(1) The proposed site is located in an area documented as a coastal plain pond shore community or where site conditions indicate strong potential for coastal plain pond shore ecology (e.g., concentric bands of coastal plain pond vegetation, gentle sloping shoreline, and fluctuating water level);

(2) The presence of rare, endangered or threatened species has been documented within 100 feet of the site;

(3) Where in the judgment of the Conservation Commission the small size of the water body or the proximity of reasonable access alternatives makes a structure unnecessary.

C. Characterization of the resource area. The applicant must submit for review a notice of intent with a site plan that characterizes the physical attributes of the water body as well as the local vegetative and animal communities.

(1) Physical attributes. The physical attributes of the water body are important in determining the effects of the dock on a resource area. For instance, a pond shore with a steep bank and a muddy bottom would be much more easily damaged with foot traffic than a gradual pond shore with a wide sandy beach.

The site plan should show the physical attributes of the water body including an overview of the entire water body as well as information specific to the proposed site of the dock. The overview should include but not be limited to the size of the water body, the number of shoreline owners, and the number of other docks. Dock site information should describe the shoreline and the water body and should include:

- One foot contour lines 20 feet landward from the average high water in the spring to the proposed end of the dock;
- The highest water level in May and the lowest water level in August;
- Three years of precipitation and groundwater data including the current year;
- The width of beach (maximum high in May vs. low in August);
- A description of the sediment at the shoreline such as, sandy, muddy, etc.;
- All other resources on the property including but not limited to an ACEC, a bordering vegetated wetland (BVW), any 100-foot buffers, coastal banks, land subject to flooding and land subject to coastal storm flowage.

(2) The characterization of the vegetative communities is important in determining the effects the structure would have on such communities. Rare emergent pond shore species would be adversely impacted by docks on the shoreline by shading and loss of beach. The characterization of the vegetative communities should describe each zone of vegetation, in the pond, on the shoreline, in the Bordering Vegetated Wetland and within the 25-foot buffer to the water body. The site plan should show:

- The width of the emergent vegetation in the water body
- The width of the vegetation on the beach (average over 3 years)
- The width of the bordering vegetated wetland in August
- The width of the naturalized buffer
- The location of trees and other significant plants
- A plant list and the density of each species (thick, some or few) within 50 feet on either side of the structure should be submitted.

Document any rare or regionally significant species. Information on rare species is available through the Natural Heritage and Rare Species Program.

(3) The characterization of the animal community should list any common, rare or regionally significant species including but not limited to shellfish,

fish and insects such as dragonflies. Information on rare species is available through the Natural Heritage and Rare Species Program.

(4) **Monitoring:** Photographs of the surrounding area should be taken before and after installation, after the first seasonal removal and at the end of the growing season.

(5) **Public views:** There should be no detrimental impact on the visual character of the shoreline area resulting from the proposed structure.

(6) **Public access:** There should be no loss or degradation of public access opportunities resulting from the proposed structure.

D. **Design standards for docks in freshwater resource areas.**

(1) **Setbacks.** Setbacks from property lines and structures provide a way to reduce density, and the associated intensity of impacts on resource areas. No docks should be closer than 250 feet from other docks or boat ramps.

A dock should be located where it will have the least impact on or can improve the condition of a resource area the most. A setback of no less than fifty feet from the property boundaries is required unless the structure will be used by two or more contiguous property owners. In such cases the setback requirement may apply to the outermost boundaries of the two or more contiguous properties so that the structure may be placed on a shared property line.

(2) **Height and width.** Docks in freshwater resource areas should be the shortest length necessary to allow boarding of a small boat such as a kayak or canoe in the spring, and have a maximum length of 8 feet from the average high water in the spring. Kayaks and canoes need only 6 inches of water to float with an occupant. The height of the dock would depend on the average water level. The dock should be no wider than 3 feet to eliminate as much shading as possible.

(3) **Plank spacing.** No less than three-quarter-inch spacing is required between planks to allow light penetration for vegetation. Innovative decking material may be used if it provides a similar or greater degree of light penetration.

(4) **Pile size and spacing.** Piles shall not exceed 2 inches by 4 inches and be spaced a minimum of eight feet apart unless the total length of the dock is shorter. Pilings shall be pounded in instead of jetted.

(5) **Railings.** The use of railings should be avoided unless a need can be demonstrated or to conform to the applicable building code.

(6) **Orientation.** Orientation of the structure that results in maximum sunlight penetration to underlying vegetation is preferred.

(7) **All docks will be seasonal,** with the entire dock removed by December 1st and not replaced until April 15th. All docks must be removed using practices that minimize impacts on the resource. The storage site of the dock must

be shown on the approved site plan and be outside the resource area unless otherwise specified in the applicable order of conditions.

(8) Materials. Use of non-leaching materials such as plastic lumber and other such building materials that do not leach pollutants into the aquatic ecosystem are required.

(9) Installation. Installation should be accomplished with minimal disturbance to surrounding soils or vegetation, using methods in the applicable order of conditions, as determined on a case-by-case basis. A design and installation plan approved by a licensed engineer is required.

(10) Lighting. No electric lighting will be permitted.

(11) Human habitation, toilets and the storage of gasoline, oil, grease or other pollutants on any portion of the dock will not be permitted.

(12) Innovative structures that can be demonstrated to have less impact than traditional docks will be considered if, in the opinion of the Commission, they will enhance the interests protected by these regulations.

§ 196A-12. Coastal erosion.

A. Preamble.

(1) Coastal banks are likely to be significant not only to the interests protected under state law, i.e. storm damage prevention and flood control as cited in 310 CMR 10.30, but to other wetland values protected under the Orleans Bylaw (§ 160-1) i.e. erosion and sedimentation control, fisheries, shellfish habitat, wildlife habitat, recreation and aesthetics. While in some cases, efforts to contain bank erosion may serve to enhance storm damage prevention and flood control, there are generally agreed upon adverse impacts on these other protected interests when the coastal shoreline is cut off by revetments or other erosion control measures from the natural systems of which it is a part.

(2) Among these adverse impacts can be loss or lowering of beaches below the coastal engineered structure (CES) caused by displaced wave energy as well as loss of beaches further removed from the revetment caused by deprivation of bank sediment which would normally be moving in the littoral drift. Lowered land is now flooded at high tide thus limiting or destroying access along the shoreline. Hunting, fishing and passive and active recreational opportunities are thus adversely affected. Wildlife habitat is also destroyed or limited when natural bank vegetation is replaced with rock, sandbags, wooden walls or other impenetrable substances. The aesthetic value of a natural shoreline may also be substantially reduced.

(3) Loss of sand from previously eroding banks may result in the gradual drowning of marshes and changes in shellfish habitat and fisheries, as well as loss of nutrients to these resources. Also marshes which would normally follow an eroding and retreating coastal bank are blocked by erosion control structures, and their continued growth and health limited.

(4) In addition, while the interests of a private property owner in flood control and prevention of storm damage may be served by erosion control measures on his property, adjacent properties are at increased risk from storm damage and flooding when their own coastal banks suffer end scour and from diversion of wave energy from the protected property as well as deprivation of sediment which builds beach levels.

B. Presumptions:

(1) When a proposed project involves dredging, removing, filling or altering a coastal bank, the Conservation Commission shall presume that the area is significant to the following interests protected under the Orleans Bylaw: flood control, storm damage prevention, prevention of pollution, protection of shellfish habitat, fisheries, wildlife habitat, recreation and aesthetics. This presumption may be overcome by clear and convincing evidence that a coastal bank does not play a significant role in the protection of these interests and if the Orleans Conservation Commission makes a written determination to that effect.

The Commission will determine whether an administrative review; request for determination or notice of intent is required based on the circumstances involved, and on a case by case basis. If any subsequent change is requested, an amended order of conditions may be required.

(2) The Commission further presumes a coastal bank is significant to storm damage prevention and flood control both because it is a vertical buffer to stormwaters and because it supplies sediment to coastal beaches, coastal dunes or barrier beaches. This presumption can be overcome only by a clear showing that a coastal bank does not play a role in the protection of one or more of these interests. This showing may include but may not be limited to studies of bank composition, erosion rate, destination or eroding materials and historical data.

C. Coastal banks significant to storm damage prevention and flood control as vertical buffers and as sources of sediment to coastal beaches, dunes and barrier beaches. Where a coastal bank is significant to storm damage prevention and flood control both because it is a vertical buffer to stormwaters and because it supplies sediment to coastal beaches, dunes or barrier beaches, no new bulkhead, revetment, seawall, groin or other coastal engineering structure shall be permitted on such coastal bank except that the Orleans Conservation Commission has the discretion to permit such structure if, in its judgment, such structure is required – and there is no reasonable alternative method of protection – to prevent storm damage to buildings constructed prior to August 10, 1978 [see 310 CMR 10.30(3)] and buildings reconstructed subsequent to that date but prior to the adoption of these regulations unless the orders of conditions under which such reconstruction was performed contain a prohibition against construction of such a structure including but not limited to bulkhead, revetment or seawall.

D. Coastal banks significant to storm damage prevention or flood control as vertical buffers to stormwaters: Where a coastal bank is determined to be significant to storm damage prevention or flood control solely because it is a vertical buffer to stormwaters, and such bank is not found to be significant to storm damage prevention or flood control because it supplies sediment to coastal beaches, dunes or barrier beaches, the Orleans Conservation Commission may, but is not required to do so, permit construction of bulkheads, revetments, seawalls, groins or other

coastal engineering 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.

E. Condition governing new construction within 100 feet of the top of a coastal bank: The order of conditions and the certificate of compliance for any new building within 100 feet landward of the top of a coastal bank permitted by the issuing authority under MGL c. 131 s. 40 or the Orleans Wetlands Protection Bylaw and these regulations shall contain the following specific condition: “No coastal engineering structure, such as a bulkhead, revetment or seawall shall be permitted on an eroding bank at any time in the future to protect the project allowed by this order of conditions.”

F. Definitions. As used in this section, the following terms shall have the meanings indicated:

BUILDING — The term building includes dwellings and structures essential to commercial operations. The term does not include tennis courts, boathouses, outbuildings, etc. protection of which will be considered on a case-by-case basis.

COASTAL ENGINEERED STRUCTURE (CES) — A hard structure such as but not limited to, the following: rock revetment, bulkhead, seawall, groin, gabions, when used to accomplish greater toe protection.

DISTANCE OF THE BUILDING FROM THE TOP OF THE BANK — That distance from the top of the bank to the foundation of the building, not to include decks or foundations or footings under decks.

NEW BUILDING — A new structure, or one of which over 25% of the structure measured by square footage of the foundation, or cubic footage of the structure, has been altered or rebuilt. This definition is applicable only to construction commenced on the date of the adoption of these regulations and thereafter.

POTENTIAL TOP OF THE BANK — The top of the bank assuming an angle of repose.

RECONSTRUCTION — “Reconstruction” shall mean alteration and rebuilding of up to 25% of the structure, measured by square footage of the foundation, or cubic footage of the structure. Alteration and rebuilding of over 25% of the structure shall be considered new construction. This definition is applicable only to construction commenced after August 8, 1995.

STRUCTURES (BEACH)

(1) **SOFT STRUCTURE** — An erosion control solution that stabilizes a bank primarily by bank reconstruction through regrading and/or replenishment with like or compatible natural materials such as sand, clay, etc., accompanied by stabilization of the toe by minimal use of fiber rolls, and in some instances, sandbags, and completed with plantings of indigenous vegetation such as beach grasses, *Rosa rugosa*, beach plums etc.

(2) **HARD STRUCTURE** — Permanent bulkheads, revetments, seawalls, groins or other coastal engineered structures.

(3) **GABIONS** — Intermediate control structure consisting of wire baskets filled with rocks to form a barrier through which indigenous vegetation may stabilize the bank.

TOP OF THE BANK — The physical top of the bank at the time of the application. The definition of top of the bank found in 310 CMR 10.04 is not applicable in this section. The top of the bank is determined by the DEP policy and is further described in § 196A-4 of these regulations.

G. General guidelines.

(1) Coastal engineered structures (CES) will be permitted only after the applicant has shown there are no feasible alternatives. The applicant may be required to show that alternatives have been tried and failed.

(2) Depending on the conditions, soft solutions or gabions will be preferred.

(3) CES must be as low and short as consistent with toe protection. Structures designed for complete protection against catastrophic storms, and lot line to lot line protection will be closely scrutinized.

(4) A “return” must be designed to avoid end scour on neighboring land. If that is not possible, the Commission may require that the return be set back from the applicant’s lot line to prevent accelerated erosion on the abutter’s property.

(5) Vacant land: The thrust of 310 CMR 10.30 is protection where required “of buildings.” Where a CES is proposed to protect vacant land the applicant will bear the burden of proof through clear and convincing evidence that erosion endangers the buildability of the land within a reasonably foreseeable future, or endangers buildings on adjoining properties. In such cases, soft solutions may be permitted.

(6) Multiple projects: Where submitted jointly, these guidelines will be applied as closely as feasible, but with special consideration of a systems approach.

(7) Chink stone may be permitted only where the applicant can prove by clear and convincing evidence that the stone will remain in place for a period of 10 years and/or two major storms. The applicant will be responsible for removal of such stone that is scattered on the beach in violation of this requirement.

H. Erosion control on banks characterized by non-storm lunar cycle wave action and a normally steady rate of erosion: In determining whether the bank complies with the above description, the Commission shall look at the state of bank vegetative cover and the locations of mean high water and spring high tide. Where these locations intersect with the toe of the bank, the Commission shall presume that the banks are normally subject to regular wave action and the following standard shall apply:

(1) No CES will be permitted if the building to be protected is more than 20 years away from the top of the bank based on the long term average annual erosion rate. For example, if the annual erosion rate is two feet per year or more and the structure is 40 feet or less from the top of the bank, the Commission may consider permitting a CES where there are no feasible alternatives and other conditions had been met.

(2) Where the applicant is unable to document the erosion rate, no CES shall be permitted where the building to be protected is more than 40 feet from the top of the bank or until monitoring the erosion shows an erosion rate that would expose the building foundation in 20 years or less.

I. Banks subject to erosion primarily from episodic storms:

(1) Where the distance from the building foundation to the top of the bank is greater than 40 feet, only soft solutions will be permitted.

(2) If the distance from the building foundation to the top of the bank is less than 40 feet, a CES may be allowed. However, the greater the distance the building is from the top of the bank, the lower the height of the CES should be. Notwithstanding the above, the height of the CES may be such that following storm induced bank erosion, or a slump above it, at least 30 feet should remain between the building foundation and the top of the bank.

J. Where a coastal bank is subject both to episodic storms and steady erosion from lunar cycle tides, protection may be approved for the more severe threat.

§ 196A-13. Staircases over coastal and inland banks.

A. Preamble.

(1) Informal access over coastal and inland banks may cause erosion and destabilization. Where access improvement is permitted to avoid erosion problems, those improvements shall be minimal and as unobtrusive as is consonant with safe and environmentally sound access. Accessory structures such as recreational or storage decks will not be permitted, and the following guidelines must be observed.

(a) A stairway or stairs is considered any single or set of steps, and any platform or landing connected thereto, connecting different levels to traverse a dune, bluff or coastal bank or other slope.

(b) The choice of whether stairs are to be designed to be “dug into the ground” or elevated is site specific and depends on factors such as the grade of slope, composition of the substrate, nature of vegetation. The benefits of “dug-in” stairs include their ability to allow vegetative cover, minimal visual impact, tendency to slow the erosion effects of rainfall, and their durability. Elevated stairs may at times be preferred to protect vegetation, or due to the steep slope of a bank.

(c) The stair structure should be located where it will have the least impact on or can improve a resource area. Unless vegetation and contour of slope dictate otherwise, a minimum setback of twenty-five feet from the property

boundaries is preferred unless the stairway will be owned and used by two or more contiguous property owners. In such cases the setback requirement shall apply to the outermost boundaries of the two or more contiguous properties so that the stairway may be placed on a shared property line.

(d) In an ACEC the “no adverse effect” performance standard shall apply.

(2) General conditions.

(a) The stair structure shall be no more than four feet in overall width including but not limited to the supporting posts and hand rails, if any.

(b) The structure shall remain unpainted in order to preserve as far as possible the natural appearance of the bank. If non-wood materials are used they should be of a color that will blend in with the natural surroundings.

(c) Railings or handrails shall be allowed if deemed necessary or to conform to the applicable building code.

(d) The stairway must be at least 500 feet from another stairway to which the owner has or can reasonably obtain legal access.

B. Submerged (dug into ground) treads or risers:

(1) A staircase that is dug into the ground shall follow the slope profile. Treads or risers must be level to prevent erosion. The stairway may be straight or serpentine.

(2) Treads or risers that are not tied into stairway side supports may be permitted with adequate switch backs to prevent erosion.

(3) Use of non-leaching material such as plastic lumber or other such building materials that do not leach pollutants into the aquatic ecosystem are preferred over CCA treated lumber. Use of treated material is allowed because they minimize the incidence of rotting in structures. Creosote-treated lumber is prohibited.

(4) Where the Commission finds, due to the height or steepness of the bank, or other factors, that a resting landing is justified, that landing shall meet the above width requirement and shall seat no more than two individuals.

(5) Construction of the stairway must be capable of compliance with the orders of conditions issued by the Commission.

C. Elevated stairways:

(1) A staircase shall follow the slope profile as closely as possible provided, however, that with the exception of the supporting posts, no portion of the proposed stairway shall be closer than one foot from the ground. Plans submitted must show the contours and how compliance will be accomplished.

(2) The stairway shall have no risers and there shall be a minimum of one-half inch spacing between deck planks in order to permit light penetration and encourage vegetation.

(3) Any wood preservative must be non-toxic.

(4) Where the Commission finds, due to the height or steepness of the bank, or other factors, that a resting landing is justified, that landing shall meet the above width requirement and shall seat no more than two individuals.

(5) Construction of the stairway must be capable of compliance with the orders of conditions issued by the Commission.

ARTICLE V Additional Regulations

§ 196A-14. Buildings in resource areas.

A. An increase in the size of a building in a resource area will be considered to be an increased use in the resource area. If an existing building is located within a resource area any alteration to the building which results in an increase in the footprint, the square footage or the cubic volume, will be presumed to have a significant adverse impact on the resource area. Resource areas include all areas specified under § 196A-2, Statement of jurisdiction, Subsection A(1), (2), (3), (5), and (6).

B. If more than 25% of the footprint, total square footage, or cubic volume of the building is altered, the building will be considered new construction.

C. Alteration of more than 25% of a building located in a dune area must take into consideration the effects of the increase in velocity of the blowing sand by the building. In no instances shall two buildings be built that would increase the velocity of the blowing sand between them and cause additional scour. Buildings in dunes should be built on pilings to allow the dune to migrate under them and at minimum the height of land subject to coastal storm flowage. There should be no storage or utilities under the building. An increase in decks and walkways including roof decks and additional structures such as boat racks should only be considered when they can be shown to be a benefit to the resource area.

D. Alteration of more than 25% of a building located in land under the ocean or an estuary, land under water bodies and waterways and land under salt ponds must take into consideration the effects of construction as well as the effects of the permanent structure on that water body. In no instance shall there be an increase in square footage of the building. In instances of storm damage according to Zoning Regulations only a certain percentage of the building maybe rebuilt at one time. Replacement of decks or walkways will only be considered when they can be shown to be a benefit to the resource area or a safety issue. Construction materials shall not be disposed of in the water body.

E. Alteration of more than 25% of a building on a coastal bank must take into consideration the function and stability of that bank. Coastal banks serve to protect inland areas from storm surge and also contribute sediment to the marsh system. The vegetation on a coastal bank provides erosion and sedimentation

control, wild life habitat and aesthetic value. In no instance may a building be altered in such a way as to disrupt these functions of the bank. Buildings within land subject to coastal storm flowage should be built on pilings to a minimum height of the 100-year storm surge or otherwise follow the Zoning Regulations.

§ 196A-15. Regulation of construction and land alteration.

(Reserved)

§ 196A-16. Regulation of vegetation alteration.

(Reserved)