

Rules and Regulations of the Town of Medway Conservation Commission

SECTION 1. INTRODUCTION

1.01. Authority

These rules and regulations of the Medway Conservation Commission (together with any amendments thereto, these Rules and Regulations) are promulgated under the authority of Article XXI, Section 21.10 of the Town's General By-laws, and shall be effective upon the fulfillment of all legal requirements for their effectiveness.

1.02. Purpose

These Rules and Regulations are adopted in accordance with the provisions of the Towns Wetlands Protection By-Law (the By-Law), which is Article XXI of the Town's General By-Laws. The By-Law sets forth a public review process by which activities having an impact or cumulative effect upon the wetland, surface and groundwater resources of the Town of Medway are regulated. In addition, the By-Law identifies additional public interests not recognized by (and expands other interests identified in) the Massachusetts Wetlands Protection Act. These additional public interests are: surrounding habitat, erosion and sedimentation control, protection of rivers, streams, ponds and other bodies of water, water quality enhancements, and recreation. These Rules and Regulations are intended to complement and clarify provisions of the By-Law and to assist applicants, and/or their advisors and consultants, in their dealings with the Conservation Commission. More explicitly, the intent is to improve communications, maximize efficiency and consistency in project review, minimize delay in responses by the Commission, and minimize post-application redesign by the applicant.

The Commission recognizes that environmental review is necessarily a site-specific process. The Commission intends that applicants have maximum flexibility in design and freedom to employ innovative techniques to minimize adverse environmental impacts of various projects.

The laws referred to in these Rules and Regulations include:

- (a) The Massachusetts Wetlands Protection Act, General Laws chapter 131 section 40, and the regulations promulgated thereunder (codified at 310 CMR 10.00), including the amendments added by the Rivers Protection Act (Acts of 1996, Ch. 258);
- (b) The most recent flood profile data available from the National Flood Insurance Program currently administered by the Federal Emergency Management Agency (FEMA);
- (c) The Massachusetts Environmental Policy Act (MEPA), General Laws chapter 30 sections 61-62H, and the regulations promulgated thereunder (codified at 301 CMR 11.00);
- (d) The Massachusetts laws governing designated Areas of Critical Environmental Concern,

General Laws chapter 21A section 2(7) and the regulations promulgated thereunder (codified at 301 CMR 12.00);

(e) Applicable portions of Medway Zoning Bylaw and the rules and regulations promulgated thereunder; and

(f) Applicable portions of the rules and regulations of the Medway Board of Health.

Applicants are presumed to be familiar with the above-referenced laws. Copies of applicable Town By-Laws may be obtained from Medway's Town Clerk or the Commission.

Pre-application conferences and site visits, especially for large, complex, or unusual projects, are encouraged by the Commission. Field review of wetland resource delineation and consideration of certain waiver requests, prior to filing, is appropriate. **Pre-application conferences are not binding and may be modified in later public hearings.**

1.03. Jurisdiction

The Resource Areas protected by the By-Law are set forth in Section 2 of the By-Law and differ from those protected by the Massachusetts Wetlands Protection Act in that additional areas are protected by the By-Law. These include vernal pools (including those that have not been certified by any Massachusetts regulatory agency) and certain freshwater wetlands that may not meet the definition of bordering vegetated wetlands under the Massachusetts Wetlands Protection Act. The buffer zone surrounding a Resource area is itself deemed to be a Resource Area protected by the By-Law.

1.04. Definitions

AREAS OF CRITICAL ENVIRONMENTAL CONCERN (ACEC): those critical areas and resources designated by the Commonwealth of Massachusetts Secretary of Environmental Affairs for the purpose of long-term preservation, management and use or stewardship under authority granted by General Laws chapter 21A sections 2(7) and 40(e) and the regulations promulgated thereunder (codified at 301 CMR 12.00).

AREA SUBJECT TO PROTECTION UNDER THE BY-LAW: those areas defined in the Massachusetts Wetlands Protection Act or Section 2 of the By-Law. It is used synonymously with Resource Area.

APPLICANT: any person making a Filing, or on whose behalf a Filing is made. Includes contractors, vendors and agents acting on the applicant's behalf.

BANK: is defined in Section 3.1 of the By-Law. As defined by the wetlands protection act.

BEACH: a naturally occurring beach with an unvegetated bank.

BEST AVAILABLE MEANS: the most up-to-date technology or the best designs, measures, or engineering/scientific practices that have been developed and that are commercially available.

BEST PRACTICAL MEASURES: state of the art technologies, designs, measures, or engineering practices that are in general use.

BORDERING VEGETATED WETLANDS (BVW): as described in Section 3.02(2) hereof.

BOUNDARY: the boundary of an Area Subject to Protection under the By-Law. A description of the boundary of each area is found in the appropriate section of these Rules and Regulations.

BUFFER ZONE: Land within one hundred (100) feet horizontally landward from the perimeter or outer border of any Resource Area (other than a buffer zone).

CERTIFICATE OF COMPLIANCE: a written determination in recordable form by the Commission that work, or a portion thereof, has been completed in accordance with the issued Order of Conditions.

COMPETENT OVERSIGHT: engineer, scientist, land surveyor, contractor or other party with demonstrated ability (education, training, experience, past practice) to supervise and enforce conditions placed on a project by the commission and to implement and supervise best available means and best practical measures. Competent oversight status can be revoked by the commission based on inability of person or party to perform required oversight.

CONDITIONS: those requirements set forth in an Order of Conditions issued by the Commission for the purpose of permitting, regulating, or prohibiting any activity having an impact or cumulative effect upon a Resource Area.

CONSERVATION COMMISSION OR COMMISSION: that body in Medway, Massachusetts comprised of members lawfully appointed pursuant to General Laws chapter 40 section 8C.

CREDIBLE EVIDENCE: evidence which the Commission finds to be based upon sound technical principals and investigations. May include but is not limited to measurements, photos, published scientific literature, testing, and expert testimony.

CREEK: the same as stream.

DATE OF ISSUANCE: the date any document issued by the Commission (including, but not limited to, an Order of Conditions, a Determination of Applicability, or an Enforcement Order) is mailed, as evidenced by a postmark, or the date it is hand delivered and receipted to an applicant or the applicants agent.

DATE OF RECEIPT: the date of actual delivery to an office, home address or usual place of business by mail or hand delivery.

DEP: the Massachusetts Department of Environmental Protection.

DETERMINATION OF APPLICABILITY OR DETERMINATION: a written finding, following a public hearing by the Commission, as to whether a site or the work proposed thereon is subject to the jurisdiction of the By-Law. A finding will be one of the following:

- (a) Positive Determination: a written finding that the area on which the proposed work is to be done or the activity thereon will cause a significant impact to one or more of the interests protected by the By-Law, or that an area is subject to jurisdiction under the By-Law.
- (b) Negative Determination: a written finding that the area on which proposed work is to be done, or the activity thereon will not cause a significant impact to any of the interests protected by the By-Law, or that an area is not subject to the jurisdiction of the By-Law.
- (c) Negative Determination with Conditions: a written finding that the work proposed on the area allowed under the Conditions prescribed by the Commission will not cause a significant impact to any of the interests protected by the By-Law.

FILING: any filing made under the Massachusetts Wetlands Protection Act or the By-Law to the Commission, including, but not limited to, a Request for a Determination of Applicability, Notice of Intent, Abbreviated Notice of Intent, or Abbreviated Notice of Resource Area Delineation.

FLOOD CONTROL: prevention or reduction of flooding and flood damage.

FRESHWATER WETLANDS/VEGETATED WETLANDS: any area of at least 5,000 square feet where surface and/or groundwater, or ice at or near the surface of the ground, supports a plant community dominated (at least 50%) by wetland species and/or exhibits evidence of hydric soils. Freshwater wetlands are further described under §3.02 hereof (bogs, swamp, forested wetland).

GROUNDWATER SUPPLY: water below the earth's surface in the zone of saturation.

INTERESTS PROTECTED BY THE BY-LAW: those interests specified in Section 1 of the By-Law.

LAKE: any open body of fresh water with a surface area of 10 acres or more, including, but not limited to, great ponds.

LAND SUBJECT TO FLOODING: is described in §3.04(2) hereof.

LAND UNDER WATER BODIES AND WATERWAYS: the bottom of or land under the surface of any creek, river, stream, pond, or lake. Land under water bodies is further described in §3.03(2) hereof.

LARGE PROJECT: is defined but not limited to residential developments, multiple single family homes, multi-tenant housing, commercial buildings, utility construction, road projects, parking lots, and stormwater structures or other projects requiring multiple conditions and significant oversight.

MAJORITY: more than half of a quorum of the members of the Conservation Commission voting on a motion before the Commission.

MARSH: is defined in §3.02 hereof.

MASSACHUSETTS WETLANDS PROTECTION ACT: General Laws chapter 131 section 40 and the regulations promulgated thereunder (codified at 310 CMR 10.00).

MEPA: Massachusetts Environmental Policy Act, General Laws chapter 30 sections 61-62H, and the regulations promulgated thereunder (codified at 310 CMR 11.00).

NOTICE OF INTENT: written notice filed under the Massachusetts Wetlands Protection Act and/or the By-Law by an applicant intending to remove, fill, dredge, or otherwise alter a Resource Area.

ORDER: an Order of Conditions issued pursuant to the Massachusetts Wetlands Protection Act or the By-Law.

ORDER OF CONDITIONS: the document issued in recordable form by the Commission containing conditions which regulate or prohibit an activity under the Massachusetts Wetlands Protection Act or the By-Law. Also referred to as “permit” under the By-Law.

OWNER OF LAND ABUTTING THE ACTIVITY: the owner of land sharing a common boundary or corner with the site of the proposed activity in any direction, including land located directly across a street, way, creek, river, stream, brook, canal, lake, or pond.

PLANS: such data, maps, engineering drawings, calculations, specifications, schedules and other materials, if any, deemed necessary by the Commission to describe the site, all areas subject to jurisdiction under the Massachusetts Wetlands Protection Act or the By-Law, and/or to determine the impact of the proposed work upon the interests identified in the Massachusetts Wetlands Protection Act or the interests protected by the By-Law.

POND: means any open body of fresh water with a surface area observed or recorded within the last 10 years of at least 5,000 square feet. Ponds may be either naturally occurring or man-made by impoundment, excavation, or otherwise. Ponds shall contain standing water except for periods of extended drought. For purposes of this definition, extended drought shall mean any period of four or more months during which the average rainfall for each month is 50% or less of the ten year average for that same month.

Notwithstanding the above, the following man-made bodies of open water shall not be considered ponds:

basins or lagoons which are part of wastewater treatment plants;

(b) swimming pools or other impervious man-made basins; or

(c) individual gravel pits or quarries excavated from upland areas unless inactive for 5 or more consecutive years.

PREVENTION OF POLLUTION: the prevention or reduction of contamination of soils and/or surface water or groundwater.

PRIOR DISTURBANCE: any disturbance in the vicinity of the project after the effective date of the act. This includes adjacent parcels including previous subdivisions.

PRIOR PERFORMANCE: compliance and performance history of applicant, contractors, and or agents associated with a filing.

PRIVATE WATER SUPPLY: any source or volume of surface or groundwater demonstrated to be in any private use or shown to have potential for private use.

PROTECTION OF FISHERIES: to prevent or reduce contamination or damage to fish and to protect their habitat and nutrient sources.

PROTECTION OF WILDLIFE HABITAT: (1) the protection of the habitat of any plant or animal species listed as endangered, threatened or of special concern, or on the Watch List by the Massachusetts Natural Heritage Program; listed as Federally Endangered or Federally Threatened by the U.S. Fish and Wildlife Service; and (2) the protection of the ability of any Resource Area to provide food, breeding habitat, or escape cover and species falling within the definition of wildlife as set forth in these Rules and Regulations.

PUBLIC WATER SUPPLY: any source or volume of surface or groundwater demonstrated to be in public use or approved for water supply pursuant to General Laws chapter 111 section 160 by the Division of Water Supply of the DEP or shown to have a potential for public use.

QUORUM: a majority of the members of the Commission then in office.

REQUEST FOR DETERMINATION OF APPLICABILITY: a written request on the proper form made by any person, to the Commission for a determination as to whether a site or work thereon is subject to the By-Law.

RESOURCE AREA: those areas defined in the Massachusetts Wetlands Protection Act or Section 2.0 of the By-Law. It is used synonymously with Area Subject to Protection Under the By-Law.

RIVER: a natural flowing body of water that empties into any lake, pond, ocean or other river and which flows throughout the year. River is further defined in the Rivers Protection Act (Acts of 1996, Ch. 258).

RIVERFRONT AREA: is defined in the Rivers Protection Act (Acts of 1996, Ch. 258).

SMALL PROJECT: is defined as a including but not limited to individual single family homes, additions, decks, patios, swimming pools, landscaping, sheds and garages and other projects requiring minimal conditions and oversight.

STORM DAMAGE PREVENTION: the prevention of damage caused by water 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: as defined in the Wetlands Protection Act and 310 CMR 10.4.

VEGETATED WETLANDS: also known as Freshwater Wetlands.

VERNAL POOL: The term “vernal pool” shall mean a naturally occurring, confined basin depression which, at least in most years, holds water for a minimum of two continuous months during the spring and/or summer, which is free of adult fish populations and which provides essential breeding habitat for certain amphibians and/or food, shelter, migration and breeding habitat for other wildlife species as well as the vernal pool boundary. Such sites shall be protected regardless whether or not they have been certified by the Massachusetts Division of Fisheries and Wildlife. One, non-drought, season may be required to make a vernal pool determination.

VERNAL POOL BOUNDARY: with respect to vernal pools, the highest observed water surface elevation (for example, evidence of water stained tree trunks).

WEATHER DELAYS: are events such as droughts, floods, snow fall, or snow cover, which may delay the Commission’s determination regarding resource areas of filings.

WET MEADOW: is defined in §3.02 hereof.

WILDLIFE: shall mean all mammals, birds, reptiles, amphibians and all vertebrate and invertebrate animal species, except domesticated species.

WILDLIFE HABITAT: shall mean those areas subject to the bylaw which, due to the plant community composition and structure, hydrologic regime, or other characteristics, provide important food, shelter, migration travel or overwintering areas or breeding areas for wildlife.

SECTION 2. GENERAL PROVISIONS

1. Any correspondence and/or submittal (including any Filing) should be addressed to:

Medway Conservation Commission
Medway Town Hall
155 Village Street
Medway, MA 02053

All correspondence submitted to the Commission that is sent through the U.S. post office should be by certified mail. Alternatively, such correspondence may be hand delivered to the Town Clerks Office in Town Hall, where it should be date stamped. Three copies of each submittal shall be made to the Conservation Commission. No common law doctrines such as the Mail Box Rule shall apply to any correspondence or mailings of any kind. All correspondence shall be considered received by the Conservation Commission when date stamped by the Town Clerk's Office.

Time critical correspondence should include copies to the Commission by electronic mail and/or confirmation of receipt by telephone.

The Commission reserves the right to require electronic submittals in formats acceptable to the Commission. Electronic submittal will be required for all large projects once the town's information management system accommodates storage of filings.

Filing fees required for applications under the Massachusetts Wetlands Protection Act are determined by the State and filing fees for the Town of Medway are set forth in the By-Law, as follows:

Fee to the State - determined by the fee schedule contained in the Massachusetts Wetlands Protection Act.

(b) Fee to the Conservation Commission - determined by the fee schedule contained in the Massachusetts Wetlands Protection Act.

(c) By-Law fee to the Town - determined by Town of Medway Wetlands Protection By-Law.

(d) Advertising fee to the Town - determined by the Commission.

Separate checks are to be submitted at the time of filing. The Commission, or its staff, will assist an applicant in fee determination upon request.

2. The public hearing held under the provisions of the Massachusetts Wetlands Protection Act shall serve simultaneously as the hearing under the By-Law. Public notices of hearings to be conducted for an applicant are to be inserted in a local newspaper by the Commission, but paid for by the Applicant. Any hearing may be continued for a reasonable time in order to allow the applicant, or other parties, sufficient time to produce information that the Commission deems necessary to make a decision on the impact of the project. Failure or refusal by the applicant to

produce the additional information in a timely fashion as requested may result in a denial by the Commission. The Commission reserves the right to require additional public notifications for filings continued for multiple months.

3. In order to allow the Commission to base its decision on the best possible understanding of all applicable Resource Areas, any filing must include a delineation of all resources protected by the By-Law on all property, under the control of the same owner, that is contiguous with, or across the street from, the proposed project or activity. Furthermore, the plans submitted for the Filing must include the full extent of any and all activity (including subdivision of the property) for which permits or approvals (including a plan for dividing property for which approval is not required) from any other Town or State board, commission, department, or agency have been applied for or approved. Conditions may be applicable to Resource Areas on the property that are not impacted by the present proposed activity and may continue in effect when any subsequent Filing(s) for additional activity on the property is (are) made. Filings that do not comply with this requirement shall be deemed incomplete and may be denied by the Commission.

4. The applicant shall provide a statement with respect to the effect of the project on the interests protected under the Massachusetts Wetlands Protection Act and the By-Law.

5. An applicant shall provide a written statement describing construction methodology, including the type of machinery and construction equipment to be used, access way to the project site, proposed construction time tables, and other information the Commission deems pertinent.

6. An applicant proposing alteration of any Resource Area may be required to replicate not only the function of the area to be altered, but its physical properties, characteristics, and vegetative cover. Inability to do so, where required, may be cause for denial. The Commission, in issuing an Order of Conditions that requires wetlands replication, will normally require security, as permitted by Section 4.5 of the By-Law, to assure the successful reestablishment of the lost wetlands. At least 75% of the replicated plant species shall survive through two growing seasons and shall be viable prior to release of said security. Replication shall be carried out in accordance with an approved replication plan.

7. No filling of freshwater wetlands will be allowed for the purposes of securing any wetland regulatory setback requirements or to meet any high and dry zoning requirement for a buildable lot.

8. Plans, drawings, sketches, and calculations shall be dated and signed by the person(s) responsible for their preparation. Calculations shall be independently checked by the applicant or the applicants representative, with checker identified. Any calculations done by computer program shall be done by an industry-standard program, which shall be identified, or the program and its logic shall be submitted with the calculations. All such programs shall fully identify input data, and intermediate and final results. Plans and drawings involving the practice of surveying or engineering shall be stamped, signed and dated by the appropriate design or surveying professional, who shall be registered in the Commonwealth of Massachusetts.

9. The Commission may determine that it requires technical advice and may employ the use of outside consultants to assist the Commission in reviewing a filing. Such independent consultants

may be in fields such as, but not limited to, engineering, hydro geological, legal or other. Such consultants shall assist the Commission in plan review, impact analysis, site inspection, review of calculations, analysis of the filing, assistance in drafting decisions, and monitoring or inspecting a site during construction or post-construction and other technical or legal assistance necessary to ensure compliance with all relevant laws and regulations. Such consultants shall be selected and retained by the Commission, with the actual and reasonable costs for their services to be paid by the applicant in the form of a review fee. Consultant review fees shall be submitted upon receipt of notice of estimated consultant review cost for deposit in an account established under G.L. c. 44 §53G. Consultant work shall not commence until the fee has been paid in full. The applicant shall be notified of the consultant selection. Pursuant to G.L. c. 44 §53G, the applicant may administratively appeal the selection of the consultant to the Board of Selectmen. Any appeal is limited to the grounds that the consultant lacks the minimum qualifications or has a conflict of interest. An appeal shall be instituted by the applicant filing a notice with the Town Clerk within 7 days of notice of selection. The required time limits for action upon a filing shall be extended during the duration of an appeal to the Board of Selectmen. The Commission may require an additional consultant review fee if the amount in the applicant's account falls below 25% of the initial consultant review fee. Failure of the applicant to pay the consultant review fee or to replenish the account when requested may be grounds for denial of disapproval of the filing.

10. Orders of conditions and determinations under the By-law shall expire three years from the date of the issuance. Any Order of Conditions may be renewed one time for an additional one year period, provided that a written request for renewal is received by the Commission at least 45 days prior to the expiration of the Order of Conditions..

11. An Order of Conditions must be filed at the Registry of Deeds in order to be valid under the By-Law. An applicant is expected to file either the Determination of Applicability or Order of Conditions within the statutory appeal period (10 business days) and must supply the Commission with a return copy of the recorded document, within seven calendar day of receipt of same from Norfolk County District Registry of Deeds, which shall clearly note the registry bar code stamp with the recorded Book and Page and Date and Time of recording

12. As part of an Order of Conditions issued under the By-law, in addition to any security required by any other municipal or state board, agency, or official, the Commission may require that the performance and observance of the conditions imposed thereunder (including conditions requiring mitigation work) be secured wholly or in part by a proper bond or deposit of money or other undertaking of financial responsibility sufficient in the opinion of the Commission. Such bond or surety, if required to be filed or deposited, shall be approved as to form and manner of execution by the Town Counsel, and as to sureties by the Town Treasurer, and shall be contingent upon the satisfaction of such conditions within the time frame of the permit and extension. Such bonds shall be approved by the Commission prior to the close of the public hearing.

13. An Order of Conditions, once it has expired, is not valid. A new Filing, with its own Order of Conditions, is required for construction to continue in this case. Conditions of expired orders may be enforced.

14. An applicant who makes a Filing or accepts a negative Determination of Applicability or an Order of Conditions thereby grants to the Commission, and its agents, officers, and employees the right to enter upon the property at reasonable times for the purpose of performing their duties under the By-law and may make or cause to be made such examinations, surveys, or samplings as

the Commission deems necessary, subject to the constitution and laws of the United States and the Commonwealth of Massachusetts for the duration of the work that is the subject of the filing.

15. Any Order of Conditions issued under the By-Law may be revoked by the Commission for good cause after notice to the holder of the Order, public notice, and public hearing.

16. Presumption concerning Title 5 of the Massachusetts Environmental Code and more stringent local Board of Health regulations.

(a) A subsurface sewage disposal system that is constructed in compliance with the requirements of Title 5 (310 CMR 15.00, et seq.) or more stringent Medway Board of Health requirements, shall be presumed to protect any and all interests identified in the By-Law.

17. Presumption of Significance of the 100 foot Buffer Zone.

(a) Land within the 100 foot Buffer Zone is presumed to be significant to the protection of the adjacent Resource Area and therefore to the protection of the interests protected by the By-Law. Section 5.06 hereof sets forth the regulations applicable to the 100 foot buffer zone.

(b) All distances shall be measured from the natural edge of the Resource Area, and no setbacks may be obtained by filling, altering or relocating a Resource Area.

18. The Town of Medway operates three groundwater wells in order to supply potable drinking water to the majority of its residents. The public system of wells, distribution lines and storage tanks was not designed nor intended to provide the added capability of unrestricted irrigation of lawns. Such water withdrawal, particularly during the growing season, depletes groundwater levels within the associated recharge zones and can directly impact the hydrology of adjacent wetlands and bodies of water. The Commission finds that tight water conservation measures are needed to prevent such impacts to Resource Area under its jurisdiction. Therefore, the Commission reserves the right to limit the lawn area within the areas under the Commission's jurisdiction associated with development proposals and to impose irrigation restrictions that it deems adequate.

19. Delineation of a Resource Area (other than pursuant to an Abbreviated Notice of Resource Area Delineation) approved by the Commission without a project proposal is for planning purposes only and does not constitute final Resource Area boundary delineation. Final approval of a Request for Resource Area Delineation during periods of the year other than the growing season may be delayed or denied by the Commission.

20. The Commission may amend these Rules and Regulations after public notice and public hearing in accordance with Section 21.10 of the By-law.

21. For large projects the commission may require the following:

(a) A management plan describing the project oversight and procedures for required adjustments and emergencies.

- (b) Competent oversight on a daily or weekly basis
- (c) Status reports, including narrative, photos, and certification regarding competent oversight.
- (d) Signatures and affidavits of contractors and agents certifying their understanding and compliance with conditions and standard practices.

SECTION 3. REGULATIONS FOR INLAND WETLANDS

3.01 Inland Banks (Naturally Occurring Banks and Beaches)

Preamble

Banks are likely to be significant to wildlife, public or private water supply, to ground water supply, to flood control, to storm damage prevention, to the prevention of pollution and to the protection of fisheries and wildlife. Where banks are composed of concrete, asphalt or other artificial impervious material, said banks are likely to be significant to flood control and storm damage prevention.

Banks are areas where ground water discharges to the surface and where, under some circumstances, surface water recharges the ground water.

Where banks are partially or totally vegetated, the vegetation serves to maintain their stability, which in turn protects water quality by reducing erosion and siltation.

Banks may also provide shade that moderates water temperatures, as well as providing breeding habitat and escape cover and food, all of which are significant to the protection of fisheries and wildlife. Banks which drop off quickly or overhang the waters edge often contain numerous undercuts which are favorite hiding spots for important game species.

Banks act to confine floodwater during the most frequent storms, preventing the spread of water to adjacent land. Because banks confine water during such storms to an established channel they maintain water temperatures and depths necessary for the protection of fisheries. The maintenance of cool water temperature during warm weather is critical to the survival of many species. An alteration of a bank that permits water to frequently and consistently spread over a larger and more shallow area increases the amount of property which is routinely flooded, as well as elevating water temperatures and reducing fish habitat within the main channel, particularly during warm weather.

Land within 100 feet of a bank is likely to be significant to the protection and maintenance of the bank, and therefore to the protection of the interests which these Resource Areas serve to protect.

(2) Definition, Critical Characteristics and Boundary

(a) A bank is the portion of the land surface which normally abuts and confines a water body. It occurs between a water body and a vegetated bordering wetland and adjacent flood plain, or, in the absence of these, it occurs between a water body and an upland. A bank may be partially or totally vegetated, or it may be comprised of exposed soil, gravel or stone.

(b) The physical characteristics of a bank, as well as its location, as described in the foregoing subsection (2) (a) are critical to the protection of the interests specified in Section 3.01 (1) hereof.

(c) The upper boundary of a bank is the first observable break in the slope or the mean annual flood level, whichever is higher, and it may be outside the line of the bordering vegetated wetlands. The lower boundary of a bank is the mean annual low flow level.

Permitted Activities; Waivers

No activity, other than the maintenance of an already existing structure, which will result in the building within or upon, removing, filling, or altering of a bank, on land within 25 feet of any bank, shall be permitted by the Conservation Commission, except for activity which is allowed under a waiver from these Rules and Regulations granted pursuant to Section 7 hereof and in accordance with Section 21.2(b) of the By-law.

Any activity which is allowed under a waiver granted pursuant to Section 7 of these Rules and Regulations on a bank or on land within 100 feet of a bank shall not impair the following:

- (a) the physical stability of the bank;
- (b) the water carrying capacity of the existing channel within the bank;
- (c) ground water and surface water quality; or

3.02 Freshwater Wetlands/Vegetated Wetlands/, Wet Meadows, Marshes, Swamps and Bogs (Bordering and Isolated Freshwater Wetlands)

Preamble

Freshwater/Vegetated wetlands are likely to be significant to wildlife, public or private water supply, to ground water supply, to flood control, to storm damage prevention, to prevention of pollution, to the protection of fisheries and to the protection of shellfish and wildlife.

The plant communities, soils and associated low, flat topography of vegetated wetlands remove or detain sediments, nutrients (such as nitrogen and phosphorous) and toxic substances (such as heavy metal compounds) that occur in run-off and flood waters.

Some nutrients and toxic substances are retained for years in plant root systems or in the

soils. Others are held by plants during the growing season and released as the plant decay in the fall and winter. This latter phenomenon delays the impacts of nutrients and toxins until the cold weather period, when such impacts are less likely to reduce water quality.

Freshwater/vegetated wetlands are areas where ground water discharges to the surface and where, under some circumstances, surface water discharges to the ground water.

The profusion of vegetation and the low, flat topography of vegetated wetlands slow down and reduce the passage of flood waters during periods of peak flow by providing temporary flood water storage, and by facilitating water removal through evaporation and transpiration. This reduces downstream flood crests and resulting damage to private and public property. During dry periods the water retained in vegetated wetlands is essential to the maintenance of base flow levels in rivers and streams, which in turn is important to the protection of water quality and water supplies.

Wetland vegetation provides shade that moderates water temperatures important to fishlife. Wetlands flooded by adjacent water bodies and waterways provide flood, breeding habitat and cover for fish. Fish populations in the larval stage are particularly dependent upon food provided by overbank flooding which occurs during peak flow periods (extreme storms), because most river and stream channels do not provide quantities of the microscopic plant and animal life required.

Wetland vegetation supports a wide variety of insects, reptiles, amphibians, mammals and birds which are a source of food for important game fish. Bluegills (*Lepomis macrochirus*), pumpkinseeds (*Lepomis gibbosus*), yellow perch (*Perca flavescens*), rock bass (*Ambloplites rupestris*) and all trout species feed upon nonaquatic insects. Largemouth bass (*Micropterus salmoides*), chain pickerel (*Esox niger*) and northern pike (*Esox lucius*) feed upon small mammals, snakes, nonaquatic insects, birds and amphibians. These wetlands are also important to the protection of rare and endangered and other wildlife species. Vegetated wetlands, together with land within 100 feet of a vegetated wetland, serve to moderate and alleviate thermal shock and pollution resulting from runoff from impervious surfaces which may be detrimental to wildlife, fisheries, and shellfish downstream of the vegetated wetland.

Land within 100 feet of a vegetated wetland is likely to be significant to the protection and maintenance of vegetated wetlands, and therefore to the protection of the interests which these Resources Areas serve to protect.

(2) Definition, Critical Characteristics and Boundary

(a) Freshwater wetlands are vegetated wetlands. 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 Sections 3.02(2)(c)(1) through 3.02(2)(c)(4), below. Said Resource Areas shall be protected whether or not they border surface waters.

(b) The physical characteristics of vegetated wetlands, as described in the foregoing

subsection (2)(a), are critical to the protection of the interests specified in Section 3.02(1) above.

(c) The boundary of vegetated wetlands is the line within which 50 percent or more of the vegetational community consists of the wetland plant species identified in Section 3.02(2)(c)(1) through 3.02(2)(c)(4), below:

1. The term bogs, as used in this section, shall mean 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* spp.) 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 latifolia* 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*).

2. The term swamps, as used in this section, shall mean areas where ground water 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 include 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*).

3. The term wet meadow, as used in this section where ground water 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*), hydrophilic grasses (*Poaceae*), loosestrife (*Lythrum*), marsh fern (*Dryopteris thelypteris*), rushes (*Juncaceae*), sedges (*Cyperaceae*), sensitive fern (*Onoclea sensibilis*), smartweed (*Polygonum*).

4. The term marshes, as used in this section, shall mean 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*), bladder worts (*Utricularia*), bur reeds (*Sparganiaceae*), button rush (*Cephalanthus occidentalis*), cattails (*Typha*), duck weeds (*Lemnaceae*), eelgrass (*Vallisneria*), frog bits (*Hydrocharitaceae*), horsetails (*Equisetaceae*), hydrophilic grasses (*Poaceae*), leatherleaf (*Chamaedaphne calyculata*), pickerel weeds (*Pontederiaceae*), pipeworts (*Eriocaulon*), 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).

(3) Permitted Activities; Waiver

No activity, other than the maintenance of an already existing structure, which will result in the building within or upon, removing, filling, or altering of a vegetated wetland, or of land within 25 feet of a vegetated wetland, shall be permitted by the Conservation Commission, except for activity which is allowed under a waiver pursuant to Section 7 hereof and in accordance with Section 21.2(b) of the By-law.

Any activity which is allowed under a waiver granted pursuant to Section 7 of these Rules and Regulations upon or within 100 feet of a vegetated wetland shall not impair in any way the vegetated wetland's ability to perform any of the functions set forth in Section 3.02(1) hereof.

3.03 Land Under Water Bodies (Under any Stream, Pond or Lake, Natural or Man Made)

(1) Preamble

Land under water bodies and waterways is likely to be significant to wildlife, public and private water supply, to ground water supply, to flood control, to storm damage prevention, to prevention of pollution and to the protection of fisheries. Where land under water bodies and waterways is composed of pervious material, such land represents a point of exchange between surface and ground water.

The physical nature of land under water bodies and waterways is highly variable, ranging from deep organic and fine sedimentary deposits to rocks and bedrock. The organic soils and sediments play an important role in the process of detaining and removing dissolved and particulate nutrients (such as nitrogen and phosphorous) from the surface water above. They also serve as traps for toxic substances (such as heavy metal compounds).

Land under water bodies and waterways, in conjunction with banks, serves to confine floodwater within a definite channel during the most frequent storms. Filling within this channel blocks flows which in turn causes backwater and overbank flooding during such storms. An alteration of land under water bodies and waterways that causes water to frequently spread out over a larger area at a lower depth increases the amount of property which is routinely flooded. Additionally, it results in an elevation of water temperature and a decrease in habitat in the main channel, both of which are detrimental to fisheries, particularly during periods of warm weather and low flows.

Land under rivers, streams and creeks that is composed of gravel allows the circulation of cold, well oxygenated water necessary for the survival of important game fish species. River, stream and creek bottoms with a diverse structure composed of gravel, large and small boulders and rock outcrops provides escape cover and resting areas for game fish species. Such bottom type also provides areas for the production of aquatic insects essential to fisheries.

Land under ponds and lakes is vital to a large assortment of warm water fish during spawning periods. Species such as largemouth bass (*Micropterus salmoides*), small mouth bass (*Micropterus dolomieu*), blue gills (*Lepomis macrochirus*), pumpkinseeds (*Lepomis gibbosus*), black crappie (*Promoxis nigromaculatus*) and rock bass (*Ambloplites rupestris*) build nests on the lake and bottom substrates within which they shed and fertilize their eggs.

Land within 100 feet of any bank abutting land under a water body is likely to be significant to the protection and maintenance of land under a water body, and therefore to the protection of the interests which these Resource Areas serve to protect.

(2) Definition, Critical Characteristics and Boundaries

(a) Land under water bodies is the land beneath any creek, river, stream, pond or lake. Said land may be composed of organic muck or peat, fine sediments, rocks or bedrock.

(b) The physical characteristics and location of land under water bodies and waterways specified in the foregoing subsection (2)(a) are critical to the protection of the interests specified in Section 3.03(1) above.

(c) The boundary of land under water bodies is mean low water level.

(3) Permitted Activities; Waivers

No activity, other than the maintenance of an already existing structure, which will result in the building within or upon, removing, filling, dredging or altering of land under a water body shall be permitted by the Commission, except for activity which is allowed under a waiver pursuant to Section 7 hereof.

Any activity which is allowed under a waiver granted pursuant to Section 7 of these Rules and Regulations on land under a water body shall not impair the following:

(a) The water carrying capacity within the defined channel, which is provided by said land in conjunction with the banks;

(b) Ground and surface water quality; or

(c) The capacity of said land to provide breeding habitat, escape cover and food for fisheries/shellfish.

3.04 Land Subject to Flood (Both Bordering and Isolated Areas)

(1) Preamble

(a) Bordering Land Subject to Flooding:

Bordering land subject to flooding is an area which floods from a rise in a bordering waterway or water body. Such areas are likely to be significant to flood control and storm damage prevention.

Bordering land subject to flooding provides a temporary storage area for flood water which has overtopped the bank of the main channel of a creek, river or stream or the basis of a pond or lake. During periods of peak run-off, flood waters are both retained (i.e., slowly released through evaporation and percolation) and detained (slowly released through surface discharge) by bordering land subject to flooding. Over time, incremental filling of these areas causes increases in the extent and level of flooding by eliminating flood storage volume or by restricting flows, thereby causing increases in damage to public and private properties.

(b) Isolated Land Subject to Flooding:

Isolated land subject to flooding is an isolated depression or a closed basin which serves as a ponding area for run-off or high ground water which has risen above the ground surface. Such areas are likely to be locally significant to flood control and storm damage prevention. In addition, where such areas are underlain by pervious material they are likely to be significant to public or private water supply and to ground water supply. Where such areas are underlain by pervious material covered by a mat of organic peat and muck, they are also likely to be significant to the prevention of pollution. Isolated land subject to flooding provides important breeding habitat for amphibians and some rare plants. Isolated land subject to flooding provides a temporary storage area where run-off and high ground water pond and slowly evaporate or percolate into the substrate. Filling causes lateral displacement of the ponded water onto contiguous properties, which may result in damage to said properties.

Isolated land subject to flooding, where it is underlain by pervious material, provides a point of exchange between ground and surface waters. Contaminants introduced into said area, such as septic system discharges and road salts, find easy access into the ground water and neighboring wells. Where these conditions occur and a mat of organic peat or muck covers the substrate of the area, said mat serves to detain and remove contaminants which might otherwise enter the ground water and neighboring wells.

(2) Definitions, Critical Characteristics and Boundaries

(a) Bordering Land Subject to Flooding:

1. See 3.04 (1) a.
2. The topography and location of bordering land subject to flooding specified in the foregoing subsection (2)(a)(1) are critical to the protection of the interests specified in Section 3.04(1)(a) above.
3. The boundary of bordering land subject to flooding is the estimated maximum lateral extent of flood water which will theoretically result from the statistical 100-year frequency storm. Said boundary shall be that determined by reference to the most recently available flood profile data prepared for the community within which the work is proposed under the National

Flood Insurance Program (NFIP, currently administered by the Federal Emergency Management agency, successor to the U.S. Department of Housing and Urban Development). Said boundary, so determined, shall be presumed accurate. This presumption may be overcome only by credible evidence from a registered professional engineer or other professional competent in such matters. Where NFIP Profile data is unavailable, the boundary of bordering land subject to flooding shall be the maximum lateral extent of flood water which has been observed or recorded.

(b) Isolated Land Subject to Flooding:

1. See 3.04 (1) b. As defined in the Wetlands Protection By-Law
2. The characteristics specified in the foregoing subsection (2)(b)(1) are critical to the protection of the interests specified in Section 3.04 (1)(b) above.
3. The boundary of isolated land subject to flooding is the perimeter of the largest observed or recorded volume of water confined in said area.

(3) Permitted Activities; Waivers

No activity, other than the maintenance of an already existing structure, which will result in the building within or upon, removing, filling, dredging or altering of land subject to flooding shall be permitted by the Commission unless compensatory storage is provided for or the activity is allowed under a waiver pursuant to Section 7 hereof.

Any activity which is allowed under a waiver granted pursuant to Section 7 of these Rules and Regulations on land subject to flooding shall not result in the following:

- (a) Flood damage due to filling which causes lateral displacement of water that would otherwise be confined within said area;
- (b) Adverse effect on public and private water supply or ground water supply, where said area is underlain by pervious material; or
- (c) An adverse effect on the capacity of said area to prevent pollution of the ground water, where the area is underlain by pervious material which in turn is covered by a mat of organic peat and muck.

SECTION 4. WETLAND FILLING AND REPLICATION

4.01 Preamble

In order to protect the values inherent in wetland areas, it is the intent of the By-Law to preserve wetlands, surface water bodies and other Resource Areas as functioning wetland systems. Filling of wetlands is therefore prohibited except when mitigated by wetlands replication, as permitted in this Section 4.

Wetland filling/replication in order to make lands buildable, as by fulfilling septic setbacks, flood elevations requirements or other construction setbacks or to achieve lot area requirements, is prohibited.

The following information shall be provided for the evaluation of proposed replication of Vegetated Wetlands. All information needed will be determined on an individual case basis. Projects proposing disruption of any area subject to the By-Law may be required to replicate not only the function, but its material characteristics, properties and vegetative cover. Inability to do so, where required, may be cause for denial.

The information to be supplied shall include a description of the existing conditions of the area under consideration for alteration as well as for any proposed area(s) for replication. The proposed created wetland is to be described according to all parameters below including expected goals and a schedule for a three year scope of monitoring and maintenance.

4.02 Parameters for Description of Replication

(1) Hydrology

- (a) Brief history of the water/land relationship in the area describing any natural or manmade changes made over time.
- (b) Description of the macro topography and its relationship to catchment, flood magnitude, storage, estimates of annual average, as well as 2, 10, and 100 year storm flow volume of surface runoff.
- (c) Description of surficial geology and topography as it might relate to surface, channel or standing water.
- (d) Measurement of streamflow velocity, channel morphology and bed load, with seasonal fluctuations for 2, 10, and 100 year storm event (intermittent stream courses and ditches included).
- (e) Include groundwater contribution to streamflow (baseflow). Velocity of flow through various stations in the wetland should be measured as appropriate for project scope.
- (f) Areas of open water should be measured for seasonal variations in depth, size, shape and relationship to wind direction (fetch).

(2) Water Quality

- (a) Water quality assessment statement of existing conditions, seasonal fluctuations and any proposals for duplication or enhancement.

(b) Additional measurements and analyses may be required based on project scope and site conditions:

(3) Vegetation

(a) Listing of species by both common and scientific names and percentage cover for Freshwater Wetlands. Proposed plantings should include a minimum of two wetland species indigenous to the site.

(b) Accurate flagging of existing and proposed BVW boundary at 10 foot intervals, using a numbered flag system.

(c) Plan to accomplish 75% of original cover percentage after two complete growing seasons.

(d) Description of cover type for BVW, differentiating between woody, emergent, submergent and floating vegetation.

(e) Measurement of stem density for woody species expressed as greater than or less than a given number of stems per meter square for BVW.

(f) Description of plant vigor by visual determination in the field such as stunted, sparse growth, yellowing, strong, healthy, etc. for BVW.

(g) General description of surrounding area cover types and density within 100 feet.

(h) Proposal for stations from which yearly photographs will be taken during monitoring period and submitted to the Commission to demonstrate success.

(i) Depth of heavy/intense root zone and relationship of roots to saturated soils and water table during growing seasons.

(4) Soils

(a) General description of the geology, topography, physiographic and hydrogeologic setting for each wetland type and surrounding landscape.

(b) Soils profile morphology (to 3 feet or impervious material), including soil color, texture, degree of humification, structure, depth, induration/compaction, special features - (mottling, depth to water table, bearing capacity), relationship of special features to root zone.

(c) Relate observed field characteristics to published information or determine for each soil horizon, physical parameters including porosity, hydraulic conductivity, and bulk density.

(d) Determine chemical parameters including PH, conductivity, total phosphorus, total nitrogen, and organic carbon.

(e) Include plan for soil type and characteristic replication.

(f) Plan for toxins testing if preliminary evidence suggests possibility of contamination.

(5) Animal Habitat

(a) Description of slopes or any topographical variations.

(b) Abundance of cavities suitable for burrowing either in open area or within confines of root/soil systems.

(c) Description (size and number) of mud flats and other exposed areas.

(d) Amount or number of gravel, rocks, boulders, bedrock outcroppings and rocks protruding from submerged soils.

(e) Edible plants on or within 20 feet of BVW (of high wildlife food value for vertebrates).

(f) Percentage of area shaded by tree canopy or dense shrub layer.

(g) Percent of ground cover and depth of leaf litter.

(h) Number and size (diameter at breast height) of standing trees with cavities, as well as diameter of such cavities.

(i) General description of land within 25 feet of BVW on each adjacent lot, including natural environment, level of development, distance from BVW or man-made structures.

(j) Percentage of wetland marsh or bog (if any) that is overhung by tree and shrub branches and height of such branches (under 3 feet, 3 to 6 feet, above 6 feet) including dead trees.

(k) Number and size of dead vegetation lying or extending into BVW which is suitable for basking, perching or for cover.

(l) Identification of any migratory area (area used by wildlife moving from one habitat to another).

(6) Performance Standards

To ensure the continuity in wetland ecological systems, the following conditions shall be considered proper wetland replication standards:

- (a) Replacement area shall be created during the same year and season as the wetland is filled/alterd and other construction is begun.
- (b) A wetland specialist with at least 2 years experience with installing wetland replacement areas and a biology background shall supervise the installation.
- (c) The Certificate of Compliance will not be issued for at least two full growing seasons after installation.
- (d) Written reports shall be submitted at the beginning of each season stating the condition of erosion controls and documenting the vigor and density of growth.
- (e) An as-built report, along with an as-built plan, shall be submitted and shall include excavation date and processes, wetland soil depth, planting (and replanting) dates and percentage of cover of individual species.
- (f) Changes by the applicant may be permitted upon review by the Commission if the project does not work.

SECTION 5. REGULATION GOVERNING ACTIVITY IN THE 100 FOOT BUFFER ZONE

5.01. Preamble

Unaltered buffer zones protect the important functions and values of contiguous wetland resources. Scientific research and the Commission's own experience in reviewing a wide variety of projects, clearly demonstrates that alteration and construction activities within the buffer zone consistently results in destructive and cumulative impacts on the Resource Areas. Buffers are significant to all Resource Areas and to all of the Interests Protected by the By-Law. The preponderance of available scientific research indicates that:

- (a) Forested/unaltered buffers are essential for wetland protection.
- (b) Forested buffers provide shade to adjacent wetlands and waterbodies, moderating temperature fluctuations and increasing the waters ability to hold oxygen and support life.
- (c) Wetland buffers reduce the adverse impacts of adjacent land uses to wetlands. They provide habitat for plants and animals, preserve wetland characteristics and protect water quality.
- (d) Buffer effectiveness increases with buffer width.
- (e) Land use associated with significant construction need greater buffers.
- (f) Buffers of less than 50 feet are generally ineffective in protecting wetlands.
- (g) Buffer widths effective in preventing significant water quality impacts to wetlands are generally 100 feet or greater.

- (h) Buffers from 50 to 150 feet are necessary to protect a wetland from direct human disturbance/encroachment (including by abandoned or dumped construction material, dumped debris, cut or burned vegetation, filled areas, excavation, trampled paths, adjacent residence expanding).
- (i) The most effective buffers are flat. Slopes of 15% or more will require a greater buffer.
- (j) Buffers trap and filter sediment, nutrients and chemicals from surface runoff and shallow groundwater.
- (k) Root systems and plant stems within the buffer slow water velocity, decrease erosion and channelization and keep soils porous, permitting absorption into the ground and reducing flooding potential.
- (l) The buffers capacity to absorb large amounts of water allows percolation to deeper aquifers, replenishing groundwater supplies
- (m) Microbes in organic forest soils convert nitrate into nitrogen gas through denitrification.

5.02 Prevention of Pollution, Protection of Groundwater and Public and Private Water Supply, Protection of Streams, Ponds, Other Bodies of Water and Fisheries, and Water Quality Management.

The role that a protective buffer zone plays in the maintenance of viable wetland Resource Areas has been frequently discussed in the scientific literature. Omernik (1977) thoroughly documented the dramatic increase in nitrogen and phosphorous loading to wetlands and water bodies as their adjacent watersheds are cleared. Water quality, it was demonstrated, can be better maintained if protective buffer strips are preserved along the edges of surface water bodies.

As surface runoff from developed sites flows toward a wetland resource area, the buffer zone can provide a site where eroded sediments settle, where nutrients from fertilizers are absorbed onto soil elements, and where transition zone vegetation can uptake unbound nutrients preventing nuisance algae blooms in adjacent waters (Harris and Gosselink, 1989).

Nutrients are by no means the only pollutant which may degrade wetland Resource Areas. Surface runoff from developed sites carries a diverse and potent pollution load: hydrocarbons, lawn chemicals, metals, bacteria, and viruses are common constituents (Diamond and Nilson, 1988). While it has been demonstrated that wetlands can play an effective role in cleansing pollutant loads (Nickerson, 1978), little is known of the assimilative capacity of wetland systems in accommodating the broad spectrum of nonpoint pollutants in a given watershed. Indeed, evidence of our swamping of the natural thresholds for wetland resiliency abound.

5.03 Wildlife

The transitional assemblage of trees, shrubs and groundcover (containing both wetland and upland elements) frequently found in buffer zones has been found significant to the support of a greater number of native and specialist wildlife species in the interior of Resource Areas which they border. Put another way, similar habitats provide a gradual transition zone that is not as inhospitable as an abrupt habitat edge (Harris, 1984). It seems that the relationship between the width of the transitional buffer zone along a bordering marsh, for example, and the provision of optimum wildlife habitat for its native marsh fauna is a proportional one. On the other hand, more common edge species, including many opportunistic exotics and generalists may find their

habitat proportionately diminished.

5.04 Cumulative Effects

Cumulative effects result from individually minor but collectively significant actions taking place over a period of time (Council on Environmental Quality, 1978). While the By-Law provides that the Commission may deny any project which will have a significant cumulative effect on a wetland or its values, our permit-level activities (i.e., site disturbance) are difficult to measure on the scale of cumulative impacts (i.e., watersheds) (Gosselink & Lee, 1989). Thus, techniques employed for individual permit review are not robust enough to resolve potential significant cumulative impacts, even though it may be clear that the collective impact of many such proposals could adversely affect or imperil a wetland Resource Area. A reasonable hedge against the cumulative impact is the ascription of a flanking undisturbed buffer of suitable width.

5.05 Storm Damage Prevention/Flood Control

The imposition of a flanking undisturbed buffer zone of suitable width is found both advisable and necessary in maintaining the functions and characteristics of freshwater wetlands to control floods, prevent storm damage, control sedimentation and erosion.

5.06 Minimum Performance Standards

As set forth more specifically below, it is the intent of the Commission to protect, either by condition or by legal restriction, as much of the 100 foot buffer zone as possible. Regardless, the first 25 feet of the buffer zone closest to the wetland line will be considered by the Commission to be of primary concern within the buffer.

(a) No Disturb Setback. Except as permitted by the Commission, no work shall be allowed within 25 feet of wetland resource areas identified in these rules and regulations (exclusive of the 100 foot buffer zone). This provision shall establish a permanent vegetative buffer between wetland resource areas and developed areas. No removal of vegetation will be permitted within this 25 foot setback except as specifically waived by the Commission under Section 7.

(b) No Build Setback. No structure shall be built within 25 feet from any Resource Area.(exclusive of the 100 foot buffer zone) without a waiver by the Commission under Section 7. Structures are discouraged between 25 and 50 feet from any Resource Area (exclusive of the 100 foot buffer zone).

i. A 75 foot minimum No Build Setback shall apply under any of the following circumstances:

:

- A. the Commission identifies a critical wildlife, fish or plant habitat;
- B. the Resource Area is located within a Water Resource Protection Overlay District, Zone II, or an ACEC;
- C. the Buffer Zone includes a slope that cannot be conditioned to protect the Resource Area;
- D. the Commission otherwise identifies a sensitive receptor Resource Area.

(c) These Rules and Regulations shall not be construed to preclude access paths, vista pruning or construction of water-dependent structures within the buffer zone, any of which may be permitted at the Commission's discretion.

SECTION 6 VERNAL POOLS

6.01 Preamble

The conservation of vernal pools and their wildlife may be fundamental to the overall preservation of biodiversity in the northeastern forests, and not just to the conservation of few selected amphibian species. The topography, soil structure, plant community composition and structure, and hydrologic regime of vernal pools can provide the following important wildlife habitat functions.

Vernal pools are productive hatcheries for terrestrial amphibians (e.g., salamanders, toads and frogs) which make up a significant part of the adjacent upland wildlife. Every year in early spring, on the first big rainy night, thousands of salamanders, wood frogs, and other amphibians migrate out from the forest to breed in the vernal pools where they were born. Adult amphibians only inhabit the vernal pools for a few weeks out of the year in the spring or fall. The rest of the year they live upland in the adjacent upland forest sometimes more than 600 meters away from their vernal pool. After the female lays her eggs and they hatch, young salamanders and frogs remain in the pool until it dries in the summer. In pools that remain flooded, some young salamanders may overwinter in the pools. The animals that survive the pool stage leave the vernal pool for the forest. Like their parents, once they reach maturity, they will come back to the same vernal pool every year to breed. The adjacent upland buffer habitat is important for many other vernal pool species as well, including wood frogs, spadefoot toads, Blandings turtles, and spotted turtles, all of which are found in the Town of Medway.

Vernal pools provide food, water, breeding space, shelter, security, movement, and overwintering areas for amphibians and other vernal pool species.

Vernal pools have a variety of plant associations, and are integrally associated with terrestrial plant communities and land uses.

There is no evidence that diversity increases with increasing numbers of vernal pools in a region. Large vernal pools and those with long-hydroperiods have more species than some smaller pools, but overall species diversity throughout a given geographic area depends on the diversity of species occurring in vernal pools.

Small vernal pools limit isolation of larger ponds and help protect species that are specialized for small, short-cycle pools and are not found in large, semi-permanent sites.

6.02 Definitions; Boundaries; Identification

The term vernal pool is defined in Section 2.7 of the Regulations.

The vernal pool boundary of such depression is the highest observed water surface elevation. When this actual line is not clearly visible, other factors such as water stained leaves, historical evidence, ground photographs, aerial photographs or other physical characteristics may be used.

The buffer zone, as it relates to a vernal pool, means the land within 100 feet horizontally landward from the perimeter or outer border of the vernal pool.

Systematic field observation has shown that virtually all basins that possess the characteristics defining a vernal pool under the Regulations host breeding vernal pool species. Therefore, the Commission will presume that a vernal pool habitat exists if the physical characteristics of a wetlands conform to those defined for vernal pools in the By-Law or, if it is so indicated as such in the *Massachusetts Aerial Photo Survey of Potential Vernal Pools*. The presumption of significance may be overcome by the presentation of evidence deemed credible by the Commission and which in the judgment of the Commission demonstrates that the basin or depression, or the adjacent upland resource area, does not provide those habitat functions specified in the By-Law or these Rules and Regulations.

6.03 Performance Standards

Any alteration of a vernal pool or the 100 foot buffer adjacent to any vernal pool is prohibited. These regulations notwithstanding, the Commission will consider proposals within the buffer zone of a vernal pool on a site specific basis, but only if all practical alternatives to such alteration have been investigated, and if the applicant has shown by a preponderance of the credible evidence that the proposed activity will not have unacceptable significant or cumulative effects within the protected resource area or buffer zone on the identified interests.

SECTION 7 WAIVERS

The Conservation Commission may, in its discretion, grant waivers from the operation of one or more of these Rules and Regulations pursuant to this Section 7. Such waivers shall be granted only in accordance with the provisions of this section.

A waiver may be granted only for the following reasons and upon the following conditions:

- (a) The Conservation Commission may grant a waiver from these rules and regulations upon a preponderance of evidence showing by the applicant that any proposed work, or its natural and consequential impacts and effects, will not have any adverse effect upon any of the interests protected by the By-Law. It shall be the responsibility of the applicant to provide the Conservation Commission with any and all information which the Commission may request, in order to enable the Commission to ascertain such adverse effects, the failure of the applicant to furnish any information which has been so requested shall result in the denial of a request for a variance pursuant to this subsection.
- (b) The Conservation Commission may grant a waiver from these rules and regulations when it

is necessary to avoid so restricting the use of the property as to result in an unconstitutional taking without compensation. If an application for a waiver pursuant to this Section 7 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.

(c) The Conservation Commission may grant a waiver from these rules and regulations upon the a preponderance of evidence presented by the applicant that any proposed work will have an overriding public benefit.

SECTION 8 FILING REQUIREMENTS

8.01 General

The following items may be required as minimum standards. The applicant may submit, or may be required to submit, additional information and data which will assist in the review and which is deemed necessary to determine the proposed effect on the interests protected by the Massachusetts Wetlands Protection Act or the By-Law. These items are, where applicable, in addition to any requirements of the Massachusetts Wetlands Protection Act or its regulations. The Commission, in its sole discretion, may waive any requirement.

8.02 Site Plans

Plans shall describe the proposed activity and its effect on the environment. The applicant shall submit a site plan, or plans, at a scale of 1 inch = not more than 40 feet, showing the following items:

1. Existing and proposed contours (in contrasting symbols or line weight) shall be expressed in feet above mean sea level, with intervals no greater than two feet. Date of ground survey, reference datum, and reference bench mark(s) shall be given. All plans shall show a north direction, with an indication of either true or magnetic north.
2. Within 100 feet of the subject property, the delineation of all wetlands, lands subject to flooding, water bodies, waterways, ditches, creeks, rivers, streams and ponds, whether natural or manmade, continuously or intermittently flowing. Where applicable, the State water quality classifications of waterways are to be given. The upland boundary of all bordering vegetated wetlands, isolated wetlands, vernal pools, and isolated land subject to flooding shall also be shown. The 100-year flood elevation line, and any flood plains showing on the Towns FEMA flooding maps, shall be shown. Plans shall depict the following:
 - (a) open or flowing water: light blue
 - (b) marsh or swamp: light green with swamp symbol
 - (c) all meadows, flats and lands subject to flooding: outline with a dashed blue line
3. The delineation of all applicable buffer zones/setbacks including, without limitations, the first 25 feet of the buffer zone closest to the wetland line shall be shown.

4. A delineation of all alterations proposed in, or having an impact on, any Resource Area, including buffer zones. All alterations, either permanent or temporary, of each separate Resource Area should indicate extent of disturbance by square feet, or lineal feet, as applicable. Plans shall show:
 - (a) areas to be dredged: outline in red
 - (b) areas to be filled: outline in brown
 - (c) areas to be altered in anyway other than dredging and filling: outline in black
5. Existing stone walls, buildings, rock ridges, rock outcroppings, and hiking trails, cartpaths and walkways.
6. Location, extent and area of all existing and proposed structures, roadways, including their names, driveways, paved areas, septic systems including their reserve area, wells, tanks, swimming pools, dry wells, decks, courts, and the like, and utility and other easements and right-of-ways.
7. Proposed lowest elevation of cellars or floors, proposed lowest elevation of flooding entry to structure, and proposed building structure location and aerial footprint.
8. Existing and proposed location, rim elevation and invert elevation of all catch basins and manholes, drains, culverts, and other drainage structures, including detention/retention basins, immediately upstream and downstream of the site, as well as those on-site. Sizes, shapes and materials of all conduits are to be shown. Headwalls, flared-ends, rip-rap, and similar drainage/erosion-control structures are to be shown, where applicable, including material specification of the same.
9. Details and locations for all temporary and permanent erosion controls proposed, as well as all temporary and permanent easements.
10. Proposed permanent pollution control devices on-site, such as: hooded catch basins, flow dissipaters, oil/water separators, or vegetative buffers.
11. Cross-sections showing existing and proposed slope, elevations, bank and bottom conditions of each water course to be altered. Locations of cross-sections shall be specified.
12. Proposed location of any fill or excavated material which will be stored on-site.
13. The limit of work line shall be shown.
14. Delineation of applicable water resources protection districts and water supply districts per Town Zoning By-Laws.
15. Location and identification of all soil test pits, soil borings, and monitoring wells, including

pertinent test results and groundwater elevations.

16. Existing and proposed location, rim elevation and invert elevation of all manholes, invert elevation of all sewers, immediately upstream and downstream of the site, as well as those on-site. Sizes and materials of all conduits are to be indicated. Location and extent of all treatment and disposal works are to be indicated, as well as appropriate information on connections from collection works to the plant and from the plant to the disposal works.

17. As applicable, location(s) and extent of wetlands replication area(s). Planting plan for the replication area, as well as applicable elevations of base elevations and finished elevations are to be shown.

18. As applicable, location(s) and extent of replacement flood storage. Planting plan for the replacement area, as well as all applicable elevations are to be shown.

19. Site plan, or another plan, shall show the locus of the site with regard to identifiable Town features, such as named streets and other natural or man-made features and/or public open space.

20. Adjoining property lines shall be indicated, including distances, bearings, markers at the perimeter, along with a list of all abutting owners and their property address or identification.

21. Outline of any watershed areas related to the proposed activity.

22. Before site inspections for the Filing process can be made by the Conservation Commission or its agent, the following conditions must be met:

(a) stakes in place indicating the corners of houses or other structures nearest the wetland Resource Area(s);

(b) stakes in place and identified which indicate the septic tank and leaching field location;

(c) stakes in place and marked indicating the limit of work;

(d) lot number or house number should be clearly posted at the site location;

(e) edges of all Resource Areas shall be delineated in accordance with Section 8.02 (3) and (4) hereof; and

(f) specific directions to locate the property shall be given to the Commission upon a Filing.

Failure to have the lot staked as identified above may result in non-review by the Commission and thereby delay of any intended project.

Upon completion of staking, the office of the Conservation Commission should be notified so that a site inspection shall be arranged prior to any scheduled public hearing.

8.03 Drainage Considerations

The applicant needs to demonstrate that the following considerations have been attended to:

1. Calculations should be supplied for 2, 10, 25 and 100 year interval storms. Methodology and information sources shall be supplied. (The Soil Conservation Services method is preferred.) Calculations should show predevelopment and post-development conditions for comparative purposes, demonstrating that there is no increase in peak runoff for a 10-year frequency storm. A map needs to be supplied to indicate all drainage sub-basins used in the calculations.
 2. Drainage should be designed on a 25-year frequency basis for storm drains and retention basins; on a 50-year frequency basis for culverts. Damage potential shall be examined for a 100-year frequency storm, demonstrating that there is no increase in upstream or downstream flooding damage potential. Additionally, the drainage design should attempt to:
 - (a) control runoff at source areas, before concentration, and not only at the point of concentration;
 - (b) use infiltrative techniques wherever possible, including leaching catch basins, porous paving material driveways, and retention basins;
 - (c) employ vegetated wetlands as receivers for drainage from paved areas, rather than water bodies, wherever possible, using appropriate erosion control measures;
 - (d) use open ditches, where feasible, instead of conduits; and
 - (e) avoid the use of existing wetland systems for storm-water storage from new developments, except when, in the opinion of the Commission, such use shall not result in:
 1. the loss of wildlife habitat;
 2. an increase in flood levels exceeding 1 inch within a 24-hour period immediately following a storm event; or
 3. flooding of downstream areas nor runoff backwater effect on upstream areas.
- Use of existing wetland systems for storm-water storage from new developments, if permitted by the Commission, shall not result in nutrient overloading of the wetlands system. The foregoing provisions notwithstanding, the Commission shall not approve the use of existing wetlands system for storm-water storage in new developments when the effective surface area of the wetlands system is less than 20,000 square feet.
3. Projects within the Towns Groundwater Resources Protection Districts may not decrease total recharge, nor introduce constituents into surface or groundwater other than those normally found in the effluent of appropriately treated domestic sewage, or in concentrations which cause the Safe Drinking Water Standards, as set by the Commonwealth of Massachusetts or the federal Environmental Protection Agency, to be exceeded.
 4. All projects must show the methods of handling roof, driveway and other paved area runoff.

5. A narrative needs to be supplied indicating the nature of compliance of the above four items and describing drainage calculations so that the Commission can more easily review the material submitted.

8.04 Stream Relocation or Channelization Considerations

An applicant shall provide information on the following:

1. Existing and proposed carrying capacity of the stream.
2. Stream bottom and bank sediment/soil type, under existing and proposed conditions.
3. Existing and proposed vegetation within stream and on its banks in the area of the proposed project.
4. Water velocities and flow rates at base flow, mean flow, and annual flood flows.
5. Calculations to demonstrate that velocities will be the same or less after relocation/channelization than before it, and that carrying capacity will not be reduced.
6. Erosion and sediment control during construction and after, until surfaces have stabilized.
7. Information on fish within the stream and mitigation measures to prevent disruptive impact.
8. Proposed time table for construction.
9. Demonstration that relocation/channelization will not change the low flow regime and negatively impact upon existing wetlands.
10. Step-by-step construction procedures referenced to water and soil handling, sediment control, and emergency procedures during any high flow event.

8.05 Fee Schedule for Filing

Notice of Intent (NOI) Fees

Refer to the following table and bullets for the complete Medway fee schedule; for definitions of the Notice of Intent categories listed below, refer to Appendix A, Form A-1, "Wetlands Filing Fee Calculation Worksheet".

Overall, NOI fees involve three separate payments covering (i) a MA State-specified fee that is divided between the State and the Town and (ii) a Medway By-Law fee. There are two payments (currently by check) made out to the Town of Medway: one for the town share of the State fee

and one for the Medway By-Law fee. There is one payment for the state share of the State fee that is made directly to the Commonwealth of Massachusetts and sent to the MA DEP.

The following table summarizes the fees for the State-specified categories of activities for NOI filings; see Appendix A for more information. The State fee is as of 1/03/2013 and is subject change by the MA DEP; it is presented in DEP WPA Form 3 and its instructions.

NOI Category	Total Fees	Medway By-Law Fee	<u>MA State Fee</u>	
			Town Share	State Share
Category 1		\$250.00	\$67.50	\$ 42.50
Category 2		\$1000.00	\$ 262.50	\$ 237.50
Category 3		\$2000.00	\$ 537.50	\$ 512.50
Category 4		\$3,000.00	\$ 737.50	\$ 712.50
Category 5		\$1,500.00	See DEP WPA Form 3 instructions	
Category 6		\$1.50 per linear foot with a \$2000.00 max	See DEP WPA Form 3 instructions	

Other Fees

- An Amended Order of Conditions requires a fee as listed in the table to the Town; no State fee is required.

NOI Amendment Request Category	Medway By-Law Fee
Category 1	\$120.00
Category 2	\$500.00
Category 3	\$1000.00
Category 4	\$1,500.00
Category 5	\$750.00

- An Extension of an Order of Conditions requires a fee equal to the original filing fee for the Notice of Intent for that same project; no State fee is required.

Note: An Extension of an Order of Conditions filed when the work approved by the original Order of Conditions has not commenced will require a fee of \$50. In addition, the applicant must pay the fees associated with recording the Extension to the Order of Conditions, if granted.

- A Request for Determination of Applicability requires a fee dependent on the scope of the project, please choose from the following tiers and submit accordingly.

Basic Fee: \$75.00 - The basic fee is applicable to all additions, renovations and modifications to an existing residence or an existing single family lot, exclusive to new subdivisions, lot reconfigurations, or establishments of an easement. Examples include: Residence additions (such as a patio or family room), septic systems and well related work, ancillary structures (such as a barn or a shed), and driveway installation/reconfigurations.

Comprehensive Fee: \$200.00 - All projects that do not fit the criteria required to qualify for the basic fee shall be charged the comprehensive fee amount. Examples include, but are not limited to, all commercial projects, subdivisions or projects establishing new property lines or limits, dedication of easement or rights-of-way, and demolition and removal of existing structures for reconstruction of new structures on an existing lot or new lot.

No State fee is required.

Additional Inspections/Site Visit Fee: \$35.00 - Additional site visits by the Agent, a Commissioner and/or a Commission designee may be required to fulfill the Commission's work. Such visits can arise due to plan modification or other filing changes. The Basic fee includes up to one site visit.

The Comprehensive fee includes up to two site visits. Additional site visits shall be charged in the amount of \$35 per visit. The additional site visits are required due to a comprehensive redesign or resubmission of and application shall be either: (a) charged as an additional site visit or (b) at the Agent's discretion, part of a required re-application and its corresponding fee.

- A Request for a Certificate of Compliance requires as listed in the table. No State fee is required.

Note: A Request for a Certificate of Compliance for approved alterations which never commenced will require a fee of \$50.

Certificate of Compliance Category (as filed for NOI)	Medway By-Law Fee
Category 1	\$75.00
Category 2	\$200.00
Category 3	\$400.00

Category 4		\$600.00
Category 5		\$300.00

- A Request for a Certificate of Compliance for an *expired* Order of Conditions requires a fee equal to the filing fee for the original Notice of Intent or \$200.00, whichever is greater. No State fee is required.

Certificates of Compliance shall be recorded at the Registry of Deeds by or for the property owner and the recording costs shall be paid by the property owner or his designee.

Filing Fee Policies

- (1) Fees are payable at the time of application and are nonrefundable.
- (2) Fees shall be calculated based on the above fee schedule and confirmed by the Commission or its Administrator and/or Agent.

8.06 Coordination with Other Boards

Any person making a Filing with the Commission shall provide written notice thereof at the same time, by certified mail or hand delivery, to the Building Inspector and any of the following that have, or will have, jurisdiction over any aspect of the project: Board of Selectmen, Board of Health, Planning Board, and Board of Appeals. The applicant is to inform the Commission as to who has been so notified. The Commission shall not close any hearing on any Filing until such boards and officials have had 14 days from receipt of notice to file written comments and recommendations with the Commission, which the Commission shall take into account but which shall not be binding upon the Commission. The applicant shall have the right to receive any such comments and recommendations, and to respond to them at a hearing of the Commission, prior to the Commission's final action.

8.07 Road and Donated Parcel Acceptance

The Commission will not recommend accepting roads or donated parcels from projects unless a Certificate of Compliance has been issued.

8.08 Effectiveness

These Rules and Regulations have been amended by the Commission on, and are effective as of, November 19, 2009.

8.09 Severability/Savings Clause:

"If any provision of these Rules and Regulations, in whole or in part, is held to be invalid or unenforceable by a court of competent jurisdiction, the other provisions of these Rules and Regulations shall remain in full force and effect."

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