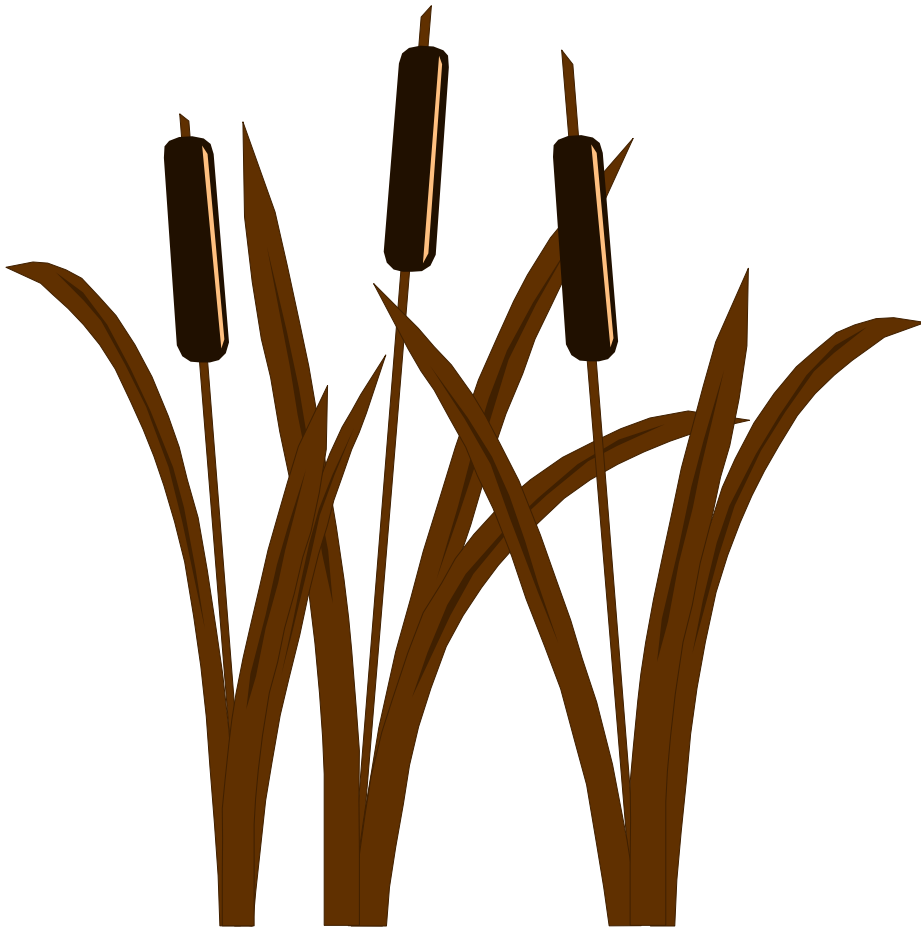


***MODEL ORDINANCE FOR***  
**WETLAND PROTECTION**



**WESTCHESTER COUNTY**  
**SOIL AND WATER CONSERVATION DISTRICT**

*January 1998*

## MODEL ORDINANCE FOR WETLAND PROTECTION (MUNICIPAL HOME RULE)

### WESTCHESTER COUNTY SOIL AND WATER CONSERVATION DISTRICT

The Westchester County Soil and Water Conservation District was created in 1967 by act of the County Board of Supervisors (now Board of Legislators) pursuant to the New York Soil and Water Conservation Districts Law. Unlike its more than 50 agricultural counterparts statewide, the District has developed a program with a distinct suburban/urban conservation orientation. Originally established to address issues of flooding in the county, over the past 20 years the District has broadened its focus to consider a range of soil, water and ecological conservation and protection concerns, including the protection and management of streams, water bodies, flood plains and wetlands, and management of land disturbance to minimize stormwater pollution and impacts to surface water quality. In 1989, the New York State Legislature officially expanded the stated objectives of districts to include nonpoint source pollution programming and remediation.

The District consists of a five-member citizen Board of Directors appointed by the County Executive. Administrative and technical assistance to the Board is provided by staff of the county Department of Planning. Through written cooperative agreements, the District provides natural resource planning and policy assistance to 38 Westchester County municipalities and other governmental agencies.

For further information about wetlands management and protection or to review National Wetlands Inventory (NWI) maps, New York State Freshwater Wetlands and Tidal Wetlands maps, and USDA-NRCS "Soil Survey of Putnam and Westchester Counties," New York (1994), please contact:

Westchester County Soil and Water Conservation District  
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## MODEL ORDINANCE FOR WETLAND PROTECTION

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*May 1997, revised January 1998*

The Westchester County Soil and Water Conservation District also wishes to acknowledge the contributions of the following individuals during the comment phase of document preparation:

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## **MODEL ORDINANCE FOR WETLAND PROTECTION (MUNICIPAL HOME RULE)**

### **INTRODUCTION**

#### ***The District's Model Ordinance for Wetland Protection***

In the early 1980s, municipal governments and other groups began asking the Westchester County Soil and Water Conservation District for technical and policy guidance in identifying, delineating, evaluating, managing, and regulating wetlands. In 1985, in response to continued interest in the topic, the District began a wetlands assistance program composed of three major components: (1) public training workshops; (2) assistance in reviewing development and other projects and activities, including wetland boundary verification and delineation, wetland functional analysis, impact assessment, and site development plan review; and (3) assistance in revising and developing municipal ordinances to regulate wetlands. The District continues to provide these services today.

In the course of reviewing and commenting on dozens of proposed local laws governing wetland protection, the District noted significant variations in regulatory approach, definition, scope of applicability, and degree of protection afforded wetlands among a host of municipal regulations. In 1988, the District published its first "Model Ordinance for Wetland Protection." The model ordinance was intended to encourage municipalities throughout Westchester County to seriously consider the issue of wetland protection and standardize their approaches to wetland management, both in terms of criteria used to define these ecosystems and regulatory philosophy.

The 1988 model has assisted municipalities with the protection of wetlands and watercourses within their boundaries. To date, 16 municipalities in Westchester County have incorporated, in whole or in part, the essential components of the model ordinance into their existing or pending wetland protection ordinances. Model ordinances in other counties also have been patterned after the District's model.

However, much has changed in wetland management and regulation since 1988. New state and federal manuals for delineating wetlands have been developed, the science of wetland restoration and creation has matured, and state and federal guidelines, policies and laws have changed over the years to reflect a greater understanding of wetlands and their relationship to humans. To reflect current wetland management techniques, guidelines and laws, the District has revised its model ordinance, incorporating applicable comments from reviews by local, state and federal agencies into this updated model.

The District's model ordinance allows for a more streamlined process of regulating wetlands. Many of the provisions in this model, such as impact avoidance, minimization and mitigation, satisfy the requirements of state and federal agencies. Therefore, it is assumed that applicants who comply with the requirements of this model ordinance also will comply with many, if not most, of the wetland protection requirements of state and federal agencies. However, this does not alleviate the obligation of applicants to acquire permits from appropriate local, state and federal agencies.

### **TYPES OF WETLAND REGULATION**

#### ***Federal Regulations***

## **MODEL ORDINANCE FOR WETLAND PROTECTION (MUNICIPAL HOME RULE)**

The principal federal laws that regulate activities in wetlands are Sections 404 and 401 of the Clean Water Act, and Section 10 of the Rivers and Harbors Act. Other federal laws include the National Environmental Policy Act, the Coastal Zone Management Act, and the Swampbuster provision of the Food, Agriculture, Conservation and Trade Act of 1990. The federal wetland protection law most commonly applied in Westchester County is the Clean Water Act. Under this law, applicants who want to conduct a regulated activity, such as excavating or filling a wetland, must demonstrate that the wetland impacts will be avoided and minimized to the fullest practicable extent and that unavoidable adverse impacts will be mitigated. According to recent revisions, the U.S. Army Corps of Engineers must be notified by applicants proposing to impact one-third of an acre to three acres of wetland before conducting the activity under Nationwide Permit No. 26. Any activity impacting more than three acres requires the applicant to first acquire an Individual Permit from the Army Corps; applications under this permit are reviewed by the U.S. Fish and Wildlife Service, U.S. Environmental Protection Agency, and National Marine Fisheries Service. Any activity impacting less than one-third of an acre does not require a federal permit but requires that the Army Corps be notified of the activity. The law does not regulate any upland (non-wetland) buffer adjacent to wetlands.

### ***State Regulations***

The principal New York State regulations affecting development activities in and near wetlands include the Freshwater Wetlands Act, the Tidal Wetlands Act, and the Adirondack Park Agency Act. Administration of the Tidal Wetlands Act [Article 25 of the State Environmental Conservation Law (ECL)] rests solely with the State Department of Environmental Conservation (DEC). The Freshwater Wetlands Act (Article 24 of the ECL) is administered by the DEC in all of New York State outside of Adirondack Park. Inside Adirondack Park, the Adirondack Park Agency administers both the Freshwater Wetlands Act and the APA Act. The Freshwater Wetlands Act regulates only wetlands which are equal to or greater than 12.4 acres in size or which are of “unusual local importance” and have been so designated. It also regulates a 100-foot-wide buffer adjacent to these wetlands.

Other state laws that may apply to activities in or near wetlands include the State Environmental Quality Review Act (SEQRA), the Waterfront Revitalization of Coastal Areas and Inland Waterways Act, the Coastal Erosion Hazard Areas Act, and the Use and Protection of Waters Program. In addition, the New York Uniform Procedures Act applies to procedural aspects of the review and permitting process. Also, the DEC administers the Water Quality Certification program pertaining to Section 401 of the Clean Water Act, which requires state certification that federal permits meet state water quality standards.

## MODEL ORDINANCE FOR WETLAND PROTECTION (MUNICIPAL HOME RULE)

### *Local Regulations*

#### *Variability of Local Ordinances*

Many local governments in New York have their own wetland protection ordinances or provisions in their other ordinances that regulate activities proposed in or near wetlands. In Westchester County, 30 of the county's 43 municipalities regulate freshwater wetlands at the local level (for more information on municipal wetland ordinances, see the District's "Wetland Protection in Westchester County: A Survey of Municipal Wetland Ordinances," revised May 1997). All of these regulate under Municipal Home Rule authority. But because there is considerable variation in the provisions of these local regulations, it is necessary to contact the appropriate local government agency to determine the local provisions that affect a particular wetland. In some cases, local regulations may cover wetlands not covered by state and federal regulations, and may be more restrictive than those of state or federal regulations. If local laws are less restrictive, projects must still comply with state and federal laws

Wetlands also may be indirectly regulated by additional ordinances, such as sensitive areas or clearing and grading ordinances. Special analysis and review may be required for projects affecting wetlands covered by local sensitive areas ordinances. Such policies and regulations may regulate wetlands and/or activities that are not covered under state and federal laws.

Other local mechanisms that may be used to regulate development affecting wetlands include comprehensive plans, zoning ordinances, and flood plain management regulations. Local planning and public works agencies can assist project sponsors in determining local requirements.

#### *Local Adoption of State Regulations*

As of 1975, the New York State Freshwater Wetlands Act (Article 24 of the Environmental Conservation Law) allows local governments to assume jurisdiction for regulating wetlands wholly or partially within their boundaries. Local wetland protection laws or ordinances may simply adopt the state law, or may strengthen the law (for example, by protecting smaller wetland areas). However, no local law or ordinance that is adopted pursuant to the act can be less protective of wetlands than the act. To date, three local governments, all outside of Westchester County, have taken over the state program.



## **MODEL ORDINANCE FOR WETLAND PROTECTION (MUNICIPAL HOME RULE)**

### **MODEL ORDINANCE**

#### ***Municipal Home Rule Authority***

The District's model ordinance recommends that municipalities regulate all wetlands within their jurisdiction pursuant to Municipal Home Rule authority rather than Article 24 of the ECL (Freshwater Wetlands Act). This approach maximizes the effectiveness of local wetland protection by giving municipalities more control over how wetlands are regulated within their boundaries, including their authority over wetlands not regulated by the state. It also allows municipalities and the State to both regulate activities in state-designated wetlands. However, municipalities may elect not to regulate activities within state-designated wetlands and may do so by drafting a wetlands definition that specifically excludes the definition used under Article 24 of the ECL; in this case, the review of activities within or near state-designated wetlands would be under the sole jurisdiction of the New York State DEC (and federal laws, as applicable). On the other hand, municipalities may assume regulatory authority over State-designated wetlands from the DEC pursuant to Article 24 of the ECL by adopting local laws which incorporate specific provisions set by the State (see Appendix A). To assume this authority, local governments must demonstrate to the State adequate technical, administrative and enforcement capabilities to carry out the state program. To date, no local government in Westchester County has assumed this authority.

In general, the criteria and standards set forth in this ordinance are more stringent than those set forth by the state, and these standards should result in a local decision acceptable to the latter authority. Furthermore, by continuing to regulate pursuant to Municipal Home Rule authority, municipalities are not required to adopt the Classification System and Minimum Land Use Regulations set by the state. These requirements, while useful and appropriate for regional wetland management whose perspective is broad, do not adequately reflect local issues and concerns as well as the diminishing wetland base within Westchester's suburban and urban areas.

#### ***Wetland Definition***

The technical definition of wetlands presented in this document is based on a methodology developed by four federal agencies - Environmental Protection Agency, Army Corps of Engineers, Fish and Wildlife Service, and Natural Resources Conservation Service. The methodology is contained in the Federal Manual for Identifying and Delineating Jurisdictional Wetlands (1989). It requires consideration of three parameters in establishing wetland boundaries: vegetation, soils, and hydrology. It also addresses certain conditions which may warrant the consideration of only two parameters. The District believes that this method of defining wetlands will result in the most objective and comprehensive delineation of these systems, and therefore maximize the potential for effective regulation.

## **MODEL ORDINANCE FOR WETLAND PROTECTION (MUNICIPAL HOME RULE)**

### ***Structure of Model Ordinance***

This document is arranged in two sections. In the first, the text of the “model ordinance” is presented on right-hand pages and is accompanied by “explanatory notes” on each left-hand page. Of special note is the presentation on mitigation policy (Section 5.5), which outlines mitigation plan requirements in an effort to standardize mitigation proposals. Also, Section 5.4 sets specific standards for permit decisions to guide regulatory boards in reviewing and ruling on permit applications. The second section, Appendix A, outlines the changes to be made to the model ordinance if municipalities decide to regulate pursuant to Article 24 of the ECL rather than Municipal Home Rule. This section also lists the major references used in drafting this model municipal ordinance.

## MODEL ORDINANCE FOR WETLAND PROTECTION (MUNICIPAL HOME RULE)

### SECTION 1: FINDINGS OF FACT AND INTENT

#### 1.1 Findings of Fact

In their natural state, wetlands serve multiple functions, including:

1. removing pollutants from surface waters by trapping sediment, removing nutrients and detoxifying chemicals;
2. recharging ground water, including aquifers, and surface waters, thereby maintaining stream flows needed by plants and animals to survive;
3. controlling flooding by storing and then slowly releasing stormwater runoff;
4. stabilizing shorelines by protecting against erosion caused by stream currents and waves;
5. providing unique or essential habitat for diverse fish and wildlife species, including many of those on the New York State and federal lists of special concern, threatened, rare and endangered species;
6. supporting unique vegetative associations specifically adapted for survival in low oxygen environments and/or brackish or salt water;
7. providing areas of unusually high plant productivity which support wildlife diversity and abundance;
8. providing open space and visual relief from intense development in urbanized and growing areas;
9. providing recreational opportunities, including fishing, hunting, nature study, hiking and wildlife watching; and
10. serving as outdoor laboratories and living classrooms for the study and application of biological, natural and physical sciences.

Considerable acreage of these important natural resources has been lost or impaired by draining, dredging, filling, excavating, building, polluting, and other acts inconsistent with the natural uses of such areas. Wetland losses in New York State and Westchester County are estimated to be greater than 60 percent of the total original wetland acreage. Remaining wetlands are in jeopardy of being lost, despoiled, or impaired by such acts, contrary to public safety and welfare.

It is therefore the policy of the **Municipality** to protect its citizens, including generations yet unborn, by preventing the despoliation and destruction of wetlands and watercourses while taking into account varying ecological, water quality, economic, recreational, and aesthetic values. Activities that may damage the functions or cause the loss of wetlands and watercourses should be avoided and, where avoidance is not practicable, minimized to the fullest practicable extent. Any remaining impact to the functions and benefits of wetlands and watercourses and any loss of

## MODEL ORDINANCE FOR WETLAND PROTECTION (MUNICIPAL HOME RULE)

wetlands should then be compensated by restoring or creating wetlands.

### 1.2 Intent

It is the intent of the **Municipality** that activities in and around wetlands and watercourses conform with all applicable building codes, sediment control regulations, and other regulations, and that such activities not threaten public safety, the natural environment, or cause nuisances by:

1. impeding flood flows, reducing flood storage areas or destroying storm barriers, thereby resulting in increased flood heights, frequencies, or velocities on other lands;
2. increasing water pollution through location of domestic waste disposal systems in wet soils; inappropriate siting of stormwater control facilities; unauthorized application of fertilizers; pesticides; herbicides and algicides; disposal of solid wastes at inappropriate sites; creation of unstabilized fills; or the destruction of wetland soils and vegetation serving pollution and sediment control functions;
3. increasing erosion;
4. decreasing breeding, nesting, and feeding areas for many species of waterfowl and shorebirds, including those rare and endangered;
5. interfering with the exchange of nutrients needed by fish and other forms of wildlife;
6. decreasing habitat for fish and other forms of wildlife;
7. adversely altering the recharge or discharge functions of wetlands, thereby impacting ground water or surface water supplies;
8. significantly altering the wetland hydroperiod and thereby causing either short- or long-term changes in vegetational composition, soils characteristics, nutrient recycling, or water chemistry;
9. destroying sites needed for education and scientific research, such as outdoor biophysical laboratories, living classrooms, and training areas;
10. interfering with public rights in navigable waters and the recreation opportunities provided by wetlands for fishing, boating, hiking, bird watching, photography, camping, and other passive uses; or
11. destroying or damaging aesthetic and property values, including significant public vistas.

## **MODEL ORDINANCE FOR WETLAND PROTECTION (MUNICIPAL HOME RULE)**

### **SECTION 2: APPLICABILITY AND NON-CONFORMING ACTIVITIES**

#### **2.1 Wetlands and Wetland Buffers: New Projects**

This ordinance shall apply to all land defined as Wetland, Watercourse or Wetland/Watercourse Buffer in Section 3 and to any proposed regulated activity as defined in Section 4.2 except any land use, improvement or development for which final approval shall have been obtained prior to the effective date of this ordinance from the local governmental authority or authorities having jurisdiction over such land use and as further defined in Section 2.3.

#### **2.2 Rules for Establishing and Interpreting Wetland Boundaries**

The boundaries of a wetland or watercourse ordinarily shall be determined by field investigation, flagging, and subsequent survey by a licensed land surveyor unless the last is waived by the Approval Authority. The Approval Authority may consult, and/or may require the Applicant to consult with wetland scientists, biologists, hydrologists, soil scientists, ecologists/botanists, or other experts as necessary to make this determination.

#### **2.3 Grandfathered Projects**

The provisions of this local law shall not apply to any land use, improvement or development for which final approval shall have been obtained prior to the effective date of this ordinance from the local governmental authority or authorities having jurisdiction over such land use. As used in this section, the term “final approval” shall mean:

1. in the case of the subdivision of land, conditional approval of a final plat;
2. in the case of a site plan not involving the subdivision of land, approval by the appropriate body or office of a village, town or city of the site plan; and
3. in those cases not covered by subdivision (1) or (2) above, the issuance of a building permit or other authorization for the commencement of the use, improvement or development for which such permit or authorization was issued or in those local governments which do not require such permits or authorizations, the actual commencement of the use, improvement or development of the land.

#### **2.4 Current Projects and Non-conforming Activities**

A regulated activity that was approved prior to passage of this ordinance but which is not in conformity with the provisions of this ordinance may be continued subject to the following:

1. All such activities shall continue to be governed by the present laws of the Municipality.
2. No such activity shall be expanded, changed, enlarged, or altered in such a way that increases its non-conformity without a permit.

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3. If a non-conforming activity is discontinued for twelve (12) consecutive months, any resumption of the activity shall conform to this ordinance.

4. If any non-conforming use or activity is destroyed by human activities or a natural catastrophe, it shall not be resumed except in conformity with the provisions of this ordinance.

5. Activities or adjuncts thereof that are or become nuisances shall not be entitled to continue as non-conforming activities.

### SECTION 3: DEFINITIONS

Words or phrases used in this ordinance shall be interpreted as defined below, and where ambiguity exists, words or phrases shall be interpreted so as to give this ordinance its most reasonable application in carrying out the regulatory goals stated in Section 1:

ADJACENT AREA: See “Wetland/Watercourse Buffer.”

AGRICULTURAL ACTIVITY: The activity of an individual farmer or other landowner in: grazing and watering livestock; making reasonable use of water resources for agricultural purposes; harvesting the natural products of wetlands, excluding peat mining and timber harvesting; and selective cutting of trees. Agricultural activity does not mean clear cutting of trees; filling or deposition of spoil; mining; or draining for growing agricultural products or for other purposes.

APPLICANT: A person who files an application for permit under this local law and who is either the owner of the land on which the proposed regulated activity would be located, a contract vendee, a lessee of the land, the person who would actually control and direct the proposed activity, or the authorized agent of such person.

APPROVAL AUTHORITY: The municipal or administrative board or public official or municipal employee empowered to grant or deny permits under this local law, to require the posting of bonds as necessary, and to revoke or suspend a permit where lack of compliance to the permit is established. The Approval Authority for the **Municipality** is \_\_\_\_\_.

AQUICULTURE: Cultivating and harvesting products, including fish and vegetation, that are produced naturally in freshwater wetlands, and installing cribs, racks, and other in-water structures for cultivating these products; but does not include filling, dredging, peat mining, clear cutting, or the construction of any buildings or any water-regulating structures such as dams.

BOUNDARY OF A WETLAND: The outer limit of the soils and/or vegetation as defined under “Wetland/Freshwater Wetland.”

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**CLEAR CUTTING:** Any cutting of more than 30 percent of trees six (6) inches or more in diameter at breast height (dbh) over any 10-year cutting cycle as determined on the basis of wetland area per lot or group of lots under single ownership, including any cutting of trees which results in the total removal of one or more naturally occurring species, whether or not the cut meets or exceeds the 30 percent threshold.

**COMMISSIONER:** The Commissioner of the Department of Environmental Conservation of the State of New York.

**CREATION:** To construct a new wetland, often by excavating and/or flooding land not previously occupied by a wetland.

**DAMS AND WATER CONTROL MEASURES:** Barriers used, or intended to, or which, even though not intended in fact do, obstruct the flow of water or raise, lower, or maintain the level of water.

**DATE OF RECEIPT OF APPLICATION BY APPROVAL AUTHORITY:** An application shall be deemed "Received" by the Approval Authority on the date of the first regular meeting of the Approval Authority following the filing of the application and supporting plans pursuant to the provisions of this law.

**DEPOSIT:** To fill grade, discharge, emit, dump, or place any material or the act thereof.

**DISCHARGE:** The emission of any water, substance, or material into a wetland or wetland buffer whether to not such substance causes pollution.

**DOMINANT(S) or DOMINANCE:** A dominant species is either the predominant plant species (i.e. the only species dominating a vegetative unit) or a co-dominant species (i.e. when two or more species dominate a vegetative unit). Dominant species are considered to be those with 20 percent or more areal coverage in the plant community. The measures of spatial extent are percent areal cover for all vegetation units other than trees, and basal area for trees. In this ordinance, dominance refers to the spatial extent of a vegetative species because spatial extent is directly discernible or measurable in the field.

**DRAIN:** To deplete or empty of water by drawing off by degrees or in increments.

**DREDGE:** To excavate or remove sediment, soil, mud, sand, shells, gravel, or other aggregate.

**EXCAVATE:** To dig out and remove any material from a wetland, watercourse or wetland/watercourse buffer.

**FACULTATIVE SPECIES:** Vegetative species that can occur in both upland and wetland systems. There are three subcategories of facultative species: facultative wetland, straight facultative, facultative upland. Under natural conditions, a facultative wetland species is usually (estimated probability of 67 percent to 99 percent) found in wetlands, but occasionally in uplands; a straight facultative species has basically a similar

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likelihood (estimated probability of 34 percent to 66 percent) of occurring in both wetlands and uplands; a facultative upland species is usually (estimated probability of 67 percent to 99 percent) found in uplands, but occasionally in wetlands.

FERROUS IRON: The reduced form of iron found in waterlogged soils.

FILL: See “Deposit.”

FRESHWATER WETLANDS MAP: The final freshwater wetlands maps for Westchester county promulgated by the Commissioner of the New York State Department of Environmental Conservation pursuant to subdivision 24-0301.5 of the New York State Freshwater Wetland Act, or such map as has been amended or adjusted, and on which are indicated the approximate locations of the actual boundaries of wetlands regulated pursuant to Article 24 of the Environmental Conservation Law.

GRADING: To adjust the degree of inclination of the natural contours of the land, including leveling, smoothing, and other modification of the natural land surface.

GROWING SEASON: The portion of the year when soil temperatures are above biologic zero (5 degrees C); the growing season for Westchester County is March through October.

HISTOSOLS/ORGANIC SOILS: A taxonomic order composed of organic soils (mostly peats and mucks) that have organic materials in over half the upper 32 inches unless the depth to rock or to fragmented rock materials is less than 32 inches (a rare condition), or the bulk density is very low, and as further defined under “Wetland.”

HYDRIC SOIL: A soil that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part and as further defined under “Wetland.”

HYDROPHYTIC VEGETATION: Macrophytic plant life growing in water, soil or substrate that is at least periodically deficient in oxygen as a result of excessive water content.

LONG DURATION: A duration class referring to flooding or inundation in which inundation for a single event ranges from 7 days to 1 month.

MATERIAL: Liquid, solid, or gaseous substances including but not limited to soil, silt, gravel, rock, clay, peat, mud, debris, and refuse; any organic or inorganic compound, chemical agent or matter; sewage sludge or effluent; or industrial or municipal solid waste.

MICROSITE: A small site supporting facultative or obligate vegetation anomalous within the context of the larger vegetative unit. Microsites may be drier or wetter than surrounding areas as a result of altered drainage, incidental topographic variation or a related characteristic.



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**MINERAL SOIL:** A soil consisting predominantly of, and having its properties determined predominantly by, mineral matter. Mineral soils usually contain less than 20 percent organic matter by weight.

**MITIGATION PLAN:** The plan prepared by the Applicant pursuant to Section 5.5 when the Applicant has demonstrated that either losses or impacts to the wetland or wetland buffer are necessary and unavoidable as defined in Section 5.4.4 and have been minimized to the maximum extent practicable.

**MUNICIPALITY:** The (Town/Village/City) of \_\_\_\_\_.

**MUNSELL SOIL COLOR CHARTS:** A soil color designation system that specifies the relative degree of the three simple variables of color: hue, value, and chroma, produced by the Kollmorgen Corporation, 1992, or as amended or updated from time to time.

**OBLIGATE UPLAND SPECIES:** Plant species that, under natural conditions, always occur in uplands (i.e. greater than 99 percent of the time). The less than 1 percent difference allows for anomalous upland occurrences (i.e. occurrences that are the result of human-induced disturbances and transplants). Obligate wetland species for New York State are listed in “Wetland Plants of the State of New York 1986” published by the U.S. Fish and Wildlife Service in cooperation with the National and Regional Wetland Plant List Review Panels and as updated from time to time.

**PERMIT:** That form of written Municipal approval required by this law for the conduct of a regulated activity within a wetland, watercourse or wetland/watercourse buffer.

**PERSON:** See “Applicant.”

**POLLUTION:** Any harmful thermal effect or the contamination or rendering unclean or impure of any wetland or waters by reason of erosion, or by any waste or other materials discharged or deposited therein.

**PROJECT:** Any proposed or ongoing action which may result in direct or indirect physical or chemical impact on a wetland, including but not limited to any regulated activity.

**REMOVE:** To dig, dredge, suck, bulldoze, dragline, blast, or otherwise excavate or grade, or the act thereof.

**RENDERING UNCLEAN OR IMPURE:** Any alteration of the physical, chemical, or biological properties of any wetland or waters including but not limited to change in odor, color, turbidity, or taste.

**RESTORATION:** To reclaim a disturbed or degraded wetland to bring back one or more functions that have been partially or completely lost by such actions as draining or filling.

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**SELECTIVE CUTTING:** Any cutting of trees within the boundaries of a wetland or wetland/watercourse buffer that is not “Clear Cutting” as defined in this Section.

**STATE ENVIRONMENTAL QUALITY REVIEW ACT (SEQRA):** The law pursuant to Article 8 of the New York State Environmental Conservation Law providing for environmental quality review of actions which may have a significant effect on the environment.

**STRUCTURE:** Anything constructed or erected, the use of which requires location on or in the ground or attachment to something having location on the ground, including but not limited to buildings, tennis courts, and swimming pools.

**SUBDIVISION:** Any division of land into two or more lots, parcels or sites, whether adjoining or not, for the purpose of sale, lease, license or any form of separate ownership or occupancy, including any grading, road construction, installation of utilities, or other modifications or any other land use and development preparatory or incidental to any such division, by any person or by any other person controlled by, under common control with, or controlling such person, or by any group of persons acting in concert as part of a common scheme or plan. “Subdivision” of land shall include any map, plat or other plan of division of land, whether or not previously filed. “Subdivision” of land shall not include the lease of land for open space recreational use and shall not include the division of land by bona fide gift, devise or inheritance. “Subdivision” shall include the creation of units in the condominium form of ownership and the creation of leaseholds in a cooperative.

**VERY LONG DURATION:** A duration class referring to flooding or inundation in which inundation for a single event is greater than 1 month.

**WATER TABLE:** The zone of saturation at the highest average depth during the wettest season.

**WATERCOURSE:** Any natural or artificial, intermittent, seasonal or permanent, and public or private water body or watercourse. A water body is intermittently, seasonally or permanently inundated with water and contains a discernible shoreline and includes ponds, lakes and reservoirs. A watercourse includes rivulets, brooks, creeks, streams, rivers and other waterways flowing in a definite channel with bed and banks and usually in a particular direction.

**WETLAND/FRESHWATER WETLAND:** Any area which meets one or more of the following criteria:

Lands and waters of the State that meet the definition provided in subdivision 24-0107.1 of the New York State Freshwater Wetlands Act (Article 24 and title 23 of Article 71 of the Environmental Conservation Law) and have an area of at least 12.4 acres or, if smaller, have unusual local importance as determined by the Commissioner pursuant to subdivision 24-0301.1 of the Act. The approximate boundaries of such lands and waters are indicated on the official freshwater wetlands map promulgated by the Commissioner

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pursuant to subdivision 24-0301.5 of the Act, or such a map that has been amended or adjusted pursuant to section 24-0301.6 of this Title.

All areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of hydrophytic vegetation as defined by the Federal Manual for Identifying and Delineating Jurisdictional Wetlands (January 1989) prepared by the Federal Interagency Committee of the U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, and U.S.D.A. Natural Resources Conservation Service.

WETLAND/WATERCOURSE BUFFER: The wetland/watercourse buffer is a specified area surrounding a wetland or watercourse that is intended to provide some degree of protection to the wetland or watercourse from human activity and other encroachment associated with development. The wetland buffer shall be subject to the regulations for wetlands as defined in this ordinance and shall be determined to be the area extending 100 feet horizontally away from and paralleling the outermost boundary of a wetland and/or point of mean high water of a watercourse, or greater than 100 feet where designated by either the Commissioner of the New York State Department of Environmental Conservation or the local Approval Authority.

WETLAND HYDROLOGY: The sum total of wetness characteristics in areas that are inundated or have saturated soils for a sufficient duration to support hydrophytic vegetation.

WETLAND PLANTS OF THE STATE OF NEW YORK: In the National List of Plant Species That Occur In Wetlands: Northeast (1988), the list of facultative and obligate upland and wetland plant species with appropriate indicator status developed by the U.S. Department of the Interior, Fish and Wildlife Service, for the National Wetland Inventory, as amended and updated from time to time.

WETLAND SCIENTIST: A person having special knowledge by reason of education and work experience in natural, physical and biological sciences related to the identification, assessment and management of wetlands to a degree acceptable to the Approval Authority.

### **SECTION 4: PERMIT REQUIREMENTS**

No regulated activity shall be conducted in a wetland or wetland buffer without a written permit from the Approval Authority and full compliance with the terms of this ordinance or other applicable regulations. All activities that are not permitted as-of-right or by permit shall be prohibited.

#### **4.1 Permitted Uses**

The following uses shall be permitted as-of-right within a wetland or wetland buffer to the extent that they are not prohibited by any other ordinance; and to the extent that they do not constitute a pollution or erosion hazard or interfere with proper drainage; and

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provided they do not require structures, grading, fill, draining, or dredging except as authorized by permit:

1. normal ground maintenance including mowing, trimming of vegetation and removal of dead or diseased vegetation around a residence;
2. selective cutting as defined in Section 3;
3. repair of walkways and walls;
4. decorative landscaping and planting in wetland buffers, excluding those activities regulated in Sections 4.2(11) and 4.2(12);
5. public health activities, orders, and regulations of the Westchester County Department of Health and/or the New York State Department of Health for emergencies only;
6. deposition or removal of natural products of wetlands in the process of recreational or commercial fishing, shellfishing, aquaculture, hunting or trapping, but excluding excavation and removal of peat or timber, except as provided in Section 4.1.2;
7. agricultural activities as defined in Section 3, but shall not include grazing or watering of livestock used only for recreational activities (e.g., horseback riding) or livestock not directly associated with farm-related activities.

### 4.2 Regulated Activities

Regulated activities include all activities within a wetland, watercourse or wetland/watercourse buffer, other than those specified in Section 4.1, and may be permitted upon written application to the Approval Authority. Regulated activities include, but are not limited to:

1. placement or construction of any structure;
2. any form of drainage, dredging, excavation, or removal of material either directly or indirectly;
3. any form of dumping, filling, or depositing of material either directly or indirectly;
4. installation of any service lines or cable conduits;
5. introduction of any form of pollution, including but not limited to the installation of a septic tank, the running of a sewer outfall, or the discharging of sewage treatment effluent or other liquid wastes into or so as to drain into a wetland;
6. alteration or modification of natural features and contours;
7. alteration or modification of natural drainage patterns;
8. construction of dams, docks, or other water control devices, pilings or bridges, whether or not they change the natural drainage characteristics;
9. installation of any pipes or wells;
10. clear cutting of any area of trees;
11. removal or cutting of any vegetation except as permitted in Section 4.1.2;
12. deposition or introduction of organic or inorganic chemicals within a wetland or watercourse, including herbicides and pesticides regulated pursuant to Article 33 of the New York Environmental Conservation Law and Section 608 of the New York Public Health Law;
13. grazing or watering of livestock used for recreational activities or livestock

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not directly associated with farm-related activities, and any agricultural activity which involves filling, draining or excavation of a wetland, except as permitted in Section 4.1.7;

14. any other activity that may impair the natural function(s) of a wetland as described in Section 1 of this ordinance.

### SECTION 5: STANDARDS AND PROCEDURES FOR PERMITS

#### 5.1 Procedures for Permits

1. No regulated activity shall be conducted without an issuance of a written permit from the Approval Authority. Application for a permit shall be made in duplicate to the Approval Authority on forms furnished by the Municipal Clerk.

2. The Approval Authority shall establish a mailing list of all interested persons and agencies who wish to be notified of such applications. Upon receipt of the completed application, the Approval Authority shall notify the individuals and agencies, including Federal, State, and local agencies having jurisdiction over or an interest in the subject matter, to provide such individuals and agencies with an opportunity to comment.

3. An application shall not be deemed complete until and unless an Applicant has complied fully with the procedures of the State Environmental Quality Review Act (Article 8 of the State Environmental Conservation Law).

4. All permits shall expire on completion of the acts specified and, unless otherwise indicated, shall be valid for a period of one year from the date of issue. An extension of an original permit may be granted upon written request to the Approval Authority by the original permit holder or his/her legal agent at least 90 days prior to the expiration date of the original permit. The Approval Authority may require new hearings if, in its judgment, the original intent of the permit is altered or extended by the renewal, or if the Applicant has failed to abide by the terms of the original permit in any way. The request for renewal of a permit shall follow the same form and procedure as the original application except that the Approval Authority shall have the option of not holding a hearing if the original intent of the permit is not altered or extended in any significant way.

5. Within five (5) days of its receipt of a completed application for a permit, the Approval Authority shall provide the Applicant with a Notice of Application which the Applicant shall publish at his or her own expense at least once in each of at least two newspapers having a general circulation in the **Municipality**. Said Notice of Application shall be in a form prescribed by the Approval Authority and shall:

a. specify that persons wishing to object to the application should file a notice of objection by a specified date, together with a statement of the grounds of objection to the application, with the Approval Authority;

b. specify that the application, including all documents and maps

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therewith, is available for public inspection at the office of the Clerk of the **Municipality**.

### 5.2 Permit Applications

1. Prior to any person proposing to conduct or causing to be conducted a regulated activity as defined in Section 4.2, shall file an application for a permit with the Approval Authority together with a filing fee. All permit applications must include the following information:

a. Name, address and telephone number of the applicant and/or owner (if the applicant is not the owner, the written consent of the owner must be attached);

b. Street address and tax map designation of the property;

c. Statement of proposed work and purpose thereof, and an explanation why the proposed activity cannot be located at another site, including an explanation of how the proposed activity is dependent on wetlands or other water resource(s);

d. A list of the names of the owners of record of lands adjacent to the wetland or watercourse and wetland/watercourse buffer in which the project is to be undertaken, and the names of known claimants of water rights, of whom the applicant has notice, which relate to any land within or within one hundred (100) feet of the boundary of the property on which the proposed regulated activity would be located;

f. Complete plans and estimates for the proposed site improvements, which shall be certified by an engineer, architect, land surveyor, or landscape architect licensed in the State of New York, drawn to a scale no less detailed than one inch equals forty (40) feet, and showing the following:

(1) the boundaries of all wetlands as defined herein and as determined by a qualified wetland scientist no longer than 12 months prior to the date of filing the application;

(2) a description of the vegetative cover of the regulated area, including dominant species;

(3) a description of the on-site soil types, including ground water table elevations showing depth to water table and direction of flow and hydrologic connections with surface water features;

(4) location of the construction area or area proposed to be disturbed, and its relation to property lines, roads, buildings, and watercourses within 250 feet of the proposed activity;

(5) the exact locations and specifications for all proposed draining,

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filling, grading, dredging, and vegetation removal, including the amount computed from cross-sections, and the procedures to be used;

(6) location of any well(s) and depth(s) thereof, and any disposal system within 50 feet of area(s) to be disturbed;

(7) existing and proposed contours at two (2)-foot intervals in all proposed areas to be disturbed areas and to a distance of 50 feet beyond; at the discretion of the Approval Authority, the existing contours of the remaining portion of the site owned or controlled by the applicant or owner at contour intervals of no greater than 5 feet;

(8) details of any drainage system proposed both for the conduct of work, and after completion thereof, including locations at any point discharges, artificial inlets, or other human-made conveyances which would discharge into the wetland or wetland buffer, and measures proposed to control erosion both during and after the work;

(9) where creation of a lake or pond is proposed, details of the construction of any dams, embankments, outlets or other water control devices; and analysis of the wetland hydrologic system, including seasonal water fluctuation, inflow/outflow calculations, and subsurface soil, geology, and groundwater conditions;

(10) where creation of a detention basin is proposed, with or without excavation, details of the construction of any dams, berms, embankments, outlets, or other water control devices, and an analysis of the wetland hydrologic system, including seasonal water fluctuation, inflow/outflow calculations, and subsurface soil, geology, and groundwater conditions;

(11) details of erosion and sediment control practices, including a diagram showing what and where erosion and sediment controls practices will be implemented and a schedule for their installation and maintenance;

(12) a completed Environmental Assessment Form as required by the New York State Environmental Quality Review Act.

2. The Approval Authority may require additional information as needed such as the study of flood, erosion, or other hazards at the site and the effect of any protective measures that might be taken to reduce such hazards; and other information deemed necessary to evaluate the proposed use in terms of the goals and standards of this ordinance.

3. An application fee shall be charged according to the following schedule and shall be presented at the time the application is filed:

a.	Residential Uses	\$XXX
b.	Commercial Uses	\$XXX
c.	All Other Uses	\$XXX

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In the event that an application requires the **Municipality** to incur additional expenses for technical assistance in the review of an application, the applicant shall pay the reasonable expenses incurred by the **Municipality**. The applicant shall be notified of the expenses and shall deposit said necessary funds prior to the cost being incurred.

4. All information relating to a permit application, including but not limited to the application itself, additional required materials or information, notices, record of hearings, written comments, and findings shall be maintained on file in the office of the Clerk of the **Municipality**.

5. The Approval Authority, its agents or employees, may enter upon any lands or waters for good cause shown for the purpose of undertaking any investigations, examination, survey, or other activity for the purposes of this ordinance.

### 5.3 Public Hearings

The Approval Authority shall hold a public hearing on the application at such time as it deems appropriate, in order to give the public at least fifteen days notice thereof. It shall publish notice thereof in each of at least two newspapers having a general circulation in the **Municipality**, and give at least fifteen (15) days notice to each of the persons named in the application pursuant to Item (e) of Subsection 5.2(1) of the information required therein. Insofar as possible, any public hearing on the application shall be integrated with any public hearing required or otherwise held pursuant to any other law, including the State Environmental Quality Review Act. Any hearing may be held by the Approval Authority or by a hearing officer designated by the Approval Authority.

All hearings shall be open to the public and a full and complete record of each hearing shall be made. The record of any hearing shall become part of the permanent record of a permit application as specified in Section 5.2.4.

Any party may present evidence and testimony at the hearing. At the hearing, the Applicant shall have the burden of demonstrating that the proposed activity will be in accord with the goals and policies of this ordinance and the standards set forth below.

### 5.4 Standards for Permit Decisions

1. In granting, denying, or conditioning any permit, the Approval Authority shall evaluate wetland functions and the role of the wetland in the hydrologic and ecological system in which it is part, and shall determine the impact of the proposed activity upon public health, safety and welfare, flora and fauna, water quality, and additional wetland functions listed in Section 1 of this ordinance. In this determination, it shall consider the following factors, and shall issue written findings with respect to:

a. the direct and indirect impact(s) of the proposed activity, and existing and reasonably anticipated similar activities, upon neighboring land uses and wetland functions as set forth in Section 1 of this ordinance, including but not limited to the:



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- (1) infilling of a wetland or other modification of natural topographic contours;
- (2) disturbance or destruction of natural flora and fauna;
- (3) influx of sediments or other materials causing increased water turbidity or substrate aggradation;
- (4) removal or disturbance of wetland soils;
- (5) reduction in wetland ground or surface water supply;
- (6) interference with wetland water circulation;
- (7) damaging reduction or increase in wetland nutrients;
- (8) influx of toxic chemicals and/or heavy metals;
- (9) damaging thermal changes in the wetland water supply; and
- (10) destruction of natural aesthetic values.

b. any existing wetland impact(s) and the cumulative effect of reasonably anticipated future activities in or adjacent to the wetland subject to the application;

c. the impact of the proposed activity and reasonably anticipated similar activities upon flood flows, flood storage, shoreline protection, and water quality;

d. the safety of the proposed activity from flooding, erosion, hurricane winds, soil limitations, and other hazards, and possible losses to the Applicant and subsequent purchasers of the land;

e. the adequacy of water supply and waste disposal for the proposed use;

f. consistence with Federal, State, County and municipal comprehensive land use plans, and regulations;

g. the availability of preferable alternative locations on the subject parcel or, in the case of an activity which cannot be undertaken on the property without disturbance to wetlands, the availability of other reasonable locations for the activity whether or not such locations are under the ownership or control of the Applicant; and

h. the demonstration by the applicant that any direct and indirect impact(s) has/ have been avoided to the maximum extent practicable and that any remaining unavoidable direct and indirect impact(s) has/have been minimized to the extent practicable.

2. The Approval Authority shall deny a permit if:

a. the proposed activity may threaten public health, safety or welfare, result in fraud, cause nuisances, impair public rights to the enjoyment and use of public lands and waters, threaten a rare or endangered plant or animal species, violate pollution control standards, or violate any other local, State or Federal regulations or laws; or

b. it finds that the detriment to the public, measured by the factors listed in this Section, that would occur on issuance of the permit outweighs the non-monetary

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public benefits associated with the activity; or

c. both the affected landowner and the local government have been notified by a duly filed notice in writing that the State or any agency or political subdivision of the State is in the process of acquiring any freshwater wetland by negotiation or condemnation with the following provisions:

(1) The written notice must include an indication that the acquisition process has commenced, such as that an appraisal of the property has been prepared or is in the process of being prepared.

(2) If the landowner receives no offer for the property within one year of the permit denial, this ban to the permit lapses. If its negotiations with the applicant are broken off, the State or any agency or political subdivision must, within six months of the end of negotiation, either issue its findings and determination to acquire the property pursuant to Section 204 of the Eminent Domain Procedure Law or issue a determination to acquire the property without public hearing pursuant to Section 206 of the General Domain Procedure Law, or this ban to permit lapses.

3. Preference will be given to activities that must have a shoreline or wetland location to function and that will have as little impact as possible upon the wetland, watercourse and/or wetland/watercourse buffer. In general, permission will not be granted for dredging or ditching solely for the purpose of draining wetlands, controlling mosquitoes, creating ponds, providing spoil and dump sites, or building roads or structures that may be located elsewhere. The regulated activity must, to the extent feasible, be confined to the portion of a lot outside of a wetland and wetland buffer. All reasonable measures must be taken to minimize direct and indirect impacts upon the wetland.

4. The Approval Authority shall require preparation of a mitigation plan by the applicant pursuant to Section 5.5 when the Applicant has demonstrated that wetland and wetland buffer impacts are necessary and unavoidable and have been minimized to the maximum extent practicable. In the evaluation of the least environmentally-damaging, practicable alternatives, mitigation may not be used as a means of reducing environmental impacts; a mitigation wetland is designed to replace lost wetland acreage and functions. For the purposes of this ordinance, wetland impacts are necessary and unavoidable only if all of the following criteria are satisfied:

- a. the proposed activity is compatible with the public health and welfare;
- b. there is no feasible on-site alternative to the proposed activity, including reduction in density, change in use, revision of road and lot layout, relocation, elimination or consolidation of proposed structures, and/or related site planning considerations that could accomplish the Applicant's objectives; and
- c. there is no feasible alternative to the proposed activity on another site that is not a wetland or wetland/watercourse buffer.

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### 5.5 Mitigation Policy; Plan Requirements

1. After it has been determined by the Approval Authority pursuant to Section 5.4.4 that impacts to wetland or wetland/watercourse buffer are necessary and unavoidable and have been minimized to the maximum extent practicable, the Applicant shall develop a mitigation plan which shall specify mitigation measures that provide for replacement wetland that recreates as nearly as possible the original wetland in terms of type, functions, geographic location and setting, and that is larger, by a ratio of at least 1.5 to 1.0, than the original wetland. On-site mitigation shall be the preferred approach. Off-site mitigation shall be permitted only in cases where on-site alternatives are not possible; in these instances, emphasis should be placed on mitigation within the same general watershed as the original wetland.

2. Mitigation may take the following forms, either singularly or in combination, for disturbances in wetland/watercourse buffers and wetlands:

For disturbance in a wetland/watercourse buffer:

a. implementation of preventative practices to protect the natural condition and functions of the wetland; and/or

b. restoration or enhancement (e.g., improving the density and diversity of native woody plant species) of remaining or other upland buffer to offset the impacts to the original buffer.

For disturbance in a wetland:

a. restoration of areas of significantly disturbed or degraded wetlands at a ratio of at least 1.5 (restored wetland) to 1.0 (impacted wetland) by reclaiming significantly disturbed or degraded wetland to bring back one or more of the functions that have been partially or completely lost by such actions as draining or filling, provided the area of proposed mitigation occurs in a confirmed disturbed or degraded wetland having significantly lesser functional values as a result of disturbance or degradation; and/or

b. the in-kind replacement of impacted wetland by the construction of new wetland, usually by flooding or excavating lands that were not previously occupied by a wetland, that recreates as nearly as possible the original wetland in terms of type, functions, geographic location and setting, and that is larger than, by a ratio of at least 1.5 to 1.0, the original wetland.

3. The Approval Authority shall monitor, or shall cause to have monitored, projects, according to the specifications set forth in the permit, to determine whether the elements of the mitigation plan and permit conditions have been satisfied and whether the restored or created wetland function(s) and acreage mitigate the impacted function(s) and acreage. To this end, the Approval Authority may contract with an academic institution, an independent research group, or other qualified professionals at

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the expense of the Applicant, or may use its own staff expertise. An annual monitoring report prepared by the appropriate monitor shall be submitted to the Approval Authority. Mitigation projects shall be monitored for an appropriate period of time, as determined by the Approval Authority, on a case-by-case basis. Long-term monitoring is generally needed to assure the continued viability of mitigation wetlands. In general, the monitoring period shall be from three to five years.

The requirements for monitoring shall be specified in the mitigation plan and shall include, but not be limited to:

- a. the time period over which compliance monitoring shall occur;
- b. field measurements to verify the size and location of the impacted wetland area and the mitigation (restored or replacement) wetland area;
- c. the date of completion of the restoration and/or replacement; and
- d. field verification of the vegetative, hydrologic, and soils criteria as specified in the mitigation plan and permit.

4. If the Approval Authority requires a mitigation plan pursuant to 5.5(1) hereof, the following shall apply:

(1) All mitigation measures shall balance the benefits of regaining new wetland area(s) with the loss to upland (non-wetland) area(s) caused by wetland creation. On-site mitigation shall be the preferred approach; off-site mitigation shall be permitted only in cases where an on-site alternative is not possible and shall emphasize mitigation within the same general watershed.

(2) Mitigation plans developed to compensate for the loss of wetland or wetland/watercourse buffer shall include base line data as needed to adequately review the effectiveness of this plan.

(3) Any mitigation plan prepared pursuant to this section and accepted by the Approval Authority shall become part of the permit for the application to conduct a regulated activity.

5. All mitigation plans shall include:

(a) A map with sufficient detail and at a scale to be able to determine where the wetland is located and its size, boundaries and topographic features.

(b) A narrative which describes goals and specific objectives for the mitigation wetland or wetland/watercourse buffer, including the functions and benefits to be provided and clear performance standards and criteria for assessing project success.

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(c) A description of the physical, hydrological and ecological characteristics of the impacted wetland and/or wetland/watercourse buffer and proposed restored and/or created wetland and/or buffer in sufficient detail to enable the Approval Authority to determine whether wetland and/or buffer impacts will be permanently mitigated.

(d) Details on construction, including:

- o diking, excavation, or other means by which the wetland will be restored or created, including existing and proposed topographic contours;

- o construction schedule;

- o measures to control erosion and sedimentation during construction;

- o plantings: source of stock, procedures for transplanting/seeding the stock, area(s) to be planted, and planting schedule. If vegetation from the wild is to be used, identify the source and measures to prevent introduction of undesirable exotics.

- o chemicals: if applicable, explain why chemicals will be used and precautions to be taken to minimize their application and protect the wetland and/or watercourse from excessive chemicals.

(e) Details on management of the mitigation site, including:

- o measures to assure persistence of the wetland (e.g., protection against predation by birds and other animals);

- o vegetative management;

- o sediment and erosion control;

- o plans for monitoring site during and after construction, including methods and schedule for data collection and provisions for mid-course corrections;

- o provisions for long-term protection of the site (e.g., permanent conservation easement);

- o provision for bonding or other financial guarantees.

(f) A description of the periodic reporting, including at the end of construction, during the monitoring period and at the end of the monitoring period.

(g) Identify the name, qualifications and experience of the person(s) implementing the mitigation plan (i.e., contractor who will restore or construct the wetland).

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### 5.6 Permit Conditions

1. Any permit issued pursuant to this ordinance may be issued with conditions. Such conditions may be attached as the Approval Authority deems necessary, and pursuant to Section 5.4.4, to assure the preservation and protection of affected wetlands and to assure compliance with the policy and provisions of this ordinance and the provisions of the Approval Authority's rules and regulations adopted pursuant to this ordinance.

2. Every permit issued pursuant to this ordinance shall be in written form and shall contain the following conditions:

a. Work conducted under a permit shall be open to inspection at any time, including weekends and holidays, by the Approval Authority, or their designated representative(s).

b. The permit shall expire on a specified date; unless otherwise indicated, the permit shall be valid for one (1) year.

c. The permit holder shall notify the Approval Authority, in writing, of the date on which the regulated activity is to begin at least five (5) days in advance of such date.

d. The Approval Authority's permit shall be prominently displayed at the project site while the regulated activity authorized by the permit are being undertaken.

e. The boundaries of the regulated activity and wetlands and watercourses shall be staked and appropriately marked in the field so as to be clearly visible to those at the project site.

3. The Approval Authority shall set forth in writing in the file it maintains regarding a permit application, its findings and reasons for all conditions attached to any permit. Such conditions may include, but shall not be limited to:

a. limitations on lot size for any activity;

b. limitations on the total portion of any lot or the portion of the wetland on the lot that may be cleared, regraded, filled, drained, excavated or otherwise modified;

c. modification of waste disposal and water supply facilities;

d. imposition of operation controls, sureties, and deed restrictions concerning future use and subdivision of lands such as preservation of undeveloped areas in open space use, and limitation of vegetation removal;

e. dedication of easements to protect wetlands;

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- f. erosion control measures;
- g. setbacks for structures, fill, excavation, deposit of spoil, and other activities from the wetland;
- h. modifications in project design to ensure continued ground and surface water supply to the wetland and circulation of waters; and/or
- i. replanting of wetland vegetation or construction of new wetland areas to replace damaged or destroyed areas.

4. The Approval Authority shall include in the file it maintains regarding a permit application a copy of any mitigation plan prepared pursuant to Section 5.5.4, all comments received pursuant to Section 5.1.5, and a record of any hearing held pursuant to Section 5.3

5. The Approval Authority shall cause notice of its denial, issuance, or conditional issuance of a permit to be published in a daily newspaper having a broad circulation in the area wherein the wetland lies.

### 5.7 Performance Bond

1. The Approval Authority may require that, prior to commencement of work under any permit issued pursuant to this ordinance, the Applicant or permittee shall post a bond in an amount and with surety and conditions sufficient to secure compliance with the conditions and limitations set forth in the permit. The particular amount and the conditions of the bond shall be consistent with the purposes of this ordinance. The bond shall remain in effect until the Approval Authority or its designated agent certifies that the work has been completed in compliance with the terms of the permit and the bond is released by the Approval Authority or a substitute bond is provided. In the event of a breach of any condition of any such bond, the Approval Authority may institute an action in the Courts upon such bond and prosecute the same to judgment and execution.

2. The Approval Authority shall set forth in writing in the file it keeps regarding a permit application its findings and reasons for imposing a bond pursuant to this Section.

### 5.8 Other Laws and Regulations

No permit granted pursuant to this ordinance shall remove an Applicant's obligation to comply in all respects with the applicable provisions of any other Federal, State, or local law or regulation, including but not limited to the acquisition of any other required permit or approval.

### 5.9 Suspension or Revocation of Permits

1. The Approval Authority may suspend or revoke a permit in the form of a

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Stop work Order if it finds that the Applicant or permittee has not complied with any or all of the terms of such permit, has exceeded the authority granted in the permit, or has failed to undertake the project in the manner set forth in the approved application.

2. The Approval Authority shall set forth in writing in the file it keeps regarding a permit application its findings and reasons for revoking or suspending a permit pursuant to this Section.

### SECTION 6: GENERAL POWERS OF THE APPROVAL AUTHORITY

In order to carry out the purposes and provisions of this ordinance, and in addition to the powers specified elsewhere in this law, the Approval Authority shall have the following powers:

to adopt, amend, and repeal, after public hearing (except in the case of rules and regulations that relate to the organization or internal management of the Approval Authority) such rules and regulations consistent with this ordinance as it deems necessary to administer this ordinance, and to do any and all things necessary or convenient to carry out the policy and intent of this law;

to consult or contract with expert persons or agencies in reviewing a permit application;

to hold hearings and subpoena witnesses in the exercise of its powers, functions, and duties provided for by this ordinance.

### SECTION 7: VIOLATIONS AND PENALTIES

#### 7.1 Administrative Sanctions

##### 1. Damages

Any person who undertakes any wetland activity without a permit issued hereunder, or who violates, disobeys, or disregards any provision of this law or any rule or regulation adopted by the Approval Authority pursuant to this law, shall be liable to the **Municipality** for civil damages caused by such violation for every such violation. Each consecutive day of the violation will be considered a separate offense. Such civil damages may be recovered in an action brought by the **Municipality** at the request and in the name of the Approval Authority in any court of competent jurisdiction.

##### 2. Restitution

The **Municipality** shall have the authority, following a hearing before the Approval Authority and on notice to the violator, to direct the violator to restore the affected wetland to its condition prior to violation, insofar as that is possible, within a reasonable time and under the supervision of the Approval Authority or its designate. Further, the Approval Authority shall be able to require an adequate bond in a form and amount approved by the Approval Authority to ensure the restitution of the affected wetland. Any



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such order of the Approval Authority shall be enforceable in an action brought in any court of competent jurisdiction. Any order issued by the Approval Authority pursuant to this subdivision shall be reviewable in a proceeding pursuant to Article 78 of the State Civil Practice Law and Rules. The Approval Authority may attach any order issued pursuant to this subdivision to the land records of the **Municipality** for the property on which the violation occurred. This order shall remain attached to the land records for the duration of the violation; the Approval Authority shall, upon satisfactory removal of the violation, remove the order from the land records.

### 3. Stop Work Order - Revocation of Permit

In the event any person holding a wetlands permit pursuant to this ordinance violates the terms of the permit, fails to comply with any of the conditions or limitations set forth on the permit, exceeds the scope of the activity as set forth in the application, or operates so as to be materially detrimental to the public welfare or injurious to wetlands or watercourses, the Approval Authority may suspend or revoke the wetlands permit, as follows:

(a) Suspension of a permit shall be by a written Stop Work Order issued by the Approval Authority and delivered to the permittee or his agent, or the person performing the work. The Stop Work Order shall be effective immediately, shall state the specific violations cited, and shall state the conditions under which work may be resumed. A Stop Work Order shall have the effect of suspending all authorizations and permits granted by the town or any agency thereof. The Stop Work Order shall remain in effect until the Approval Authority is satisfied that the permittee has complied with all terms of the subject permit or until a final determination is made by the town board as provided in section (b) contained herein below.

(b) No site development permit shall be permanently suspended or revoked until a public hearing is held by the Approval Authority. Written notice of such hearing shall be served on the permittee, either personally or by registered mail, and shall state:

i) grounds for complaint or reasons for suspension or revocation in clear and concise language.

ii) the time and place of the hearing to be held

Such notice shall be served on the permittee at least one week prior to the date set for the public hearing unless the Stop Work Order is issued for a violation occurring less than one week before the next regularly scheduled public meeting of the Approval Authority. At such hearing, the permittee shall be given an opportunity to be heard and may call witnesses and present evidence on his behalf. At the conclusion of the hearing, the Approval Authority shall determine whether the permit shall be reinstated, suspended or revoked. The term "Person," as used herein, shall mean a natural person or a corporate person.

Any offender also may be ordered by the Approval Authority to restore the affected

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freshwater wetland to its condition prior to the offense, insofar as possible. The Approval Authority shall specify a reasonable time for the completion of such restoration, which shall be effected under the supervision of the **Municipality**.

### **7.2 Criminal Sanctions**

Any person convicted of having violated or disobeyed any provision of this chapter, any order of the Approval Authority or any condition duly imposed by the Approval Authority in a Permit granted pursuant to this Chapter, shall, for the first offense, be punishable by a fine of not less than one thousand dollars (\$1,000.00). For each subsequent offense, such person shall be punishable by a fine of not less than two thousand dollars (\$2,000.00), nor more than fifteen thousand dollars (\$15,000.00), and/or a term of imprisonment of not more than fifteen (15) days. Each consecutive day of the violation may be considered a separate offense.

## **SECTION 8: ENFORCEMENT**

The **Municipality** is specifically empowered to seek injunctive relief restraining any violation or threatened violation of any provisions of this ordinance and/or compel the restoration of the affected wetland or wetland/watercourse buffer to its condition prior to the violation of the provisions of this law.

## **SECTION 9: APPEALS**

A. Any determination, decision or order of the Approval Authority may be judicially reviewed by the applicant or any other aggrieved party by the commencement of an action pursuant to Article 78 of the Civil Practice Law and Rules within thirty (30) days after the date of the filing of the determination, decision or order of such Approval Authority with the Clerk of the Municipality and/or County.

B. In the case of an application decided by an authorized individual or municipal entity other than the Approval Authority, the applicant or any other party aggrieved by such determination may seek review by appealing to the Approval Authority, in which case the Approval Authority shall become the approving authority for such application. Such review shall be requested not later than twenty (20) days after the filing of the subject decision by the said authorized individual or municipal entity.

## **SECTION 10: SEVERABILITY**

If any clause, sentence, paragraph, section or part of this ordinance or the application thereof to any person or circumstances shall be adjudged by any court of competent jurisdiction to be invalid, such order or judgment shall be confined in its operation to the controversy in which it was rendered and shall not affect or invalidate the remainder of any part thereof to any other person or circumstances and to this end the provisions of each section of this law are hereby declared to be severable.

## **SECTION 11: AMENDMENTS**

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This ordinance may from time to time be amended in accordance with the procedures and requirements of the general statutes and as new information concerning soils, hydrology, flooding, or botanical species peculiar to wetlands becomes available.

Any person may submit in writing in a form prescribed by the Approval Authority a request for a change in the regulations. The request shall be considered at a public hearing held in accordance with the provisions of the general statutes not less than ninety days after receipt of the written request.

### **SECTION 12: ASSESSMENT RELIEF**

Assessors and boards of assessors shall consider wetland regulations in determining the fair market value of land. Any owner of an undeveloped wetland who has dedicated an easement or entered into a perpetual conservation restriction with the Approval Authority or a nonprofit organization to permanently control some or all regulated activities in the wetland and/or wetland/watercourse buffer shall be assessed consistent with those restrictions. Such landowner also shall be exempted from special assessment on the controlled wetland to defray the cost of municipal improvements such as sanitary sewers, storm sewers, and water mains.

### **SECTION 13: EFFECTIVE DATE**

This law shall take effect immediately upon filing in the office of the Secretary of the State of New York in accordance with the provisions of the Municipal Home Rule Law.

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### APPENDIX A

#### REGULATION PURSUANT TO ARTICLE 24 AUTHORITY: REQUIRED MODIFICATIONS TO THE DISTRICT MODEL ORDINANCE

Municipalities choosing to regulate their freshwater wetlands pursuant to New York State Article 24 authority rather than pursuant to Home Rule Authority as recommended by the Soil and Water Conservation District, should consult the New York State Department of Environmental Conservation “Local Government Implementation of the Wetlands Act” for guidance. This document contains the suggested material content for the technical and administrative capability statement that must be prepared and submitted by the local government, and approved by the State, before Article 24 regulatory authority is granted.

To adapt the District’s “Model Ordinance for Wetland Protection” for regulation pursuant to Article 24 of the ECL, the following changes must be made to the ordinance:

#### SECTION 3: DEFINITIONS

The following definition of “Agricultural Activity” must replace the definition provided in the Model Ordinance (please note that this results in the exemption from regulation of a broad range of activities if they are performed for purposes of agricultural operations);

**AGRICULTURAL ACTIVITY:** The activity of an individual farmer or other landowner in: (i) grazing and watering livestock; (ii) making reasonable use of water resources for agricultural purposes; (iii) harvesting the natural products of wetlands; (iv) the selective cutting of trees; (v) the clear-cutting of vegetation, other than trees, for growing agricultural products; (vi) constructing winter truck roads of less than five meters (approximately 16 feet) in width for removing timber cut in accordance with subparagraph (iv) of this paragraph, where construction is limited to cutting vegetation and compacting ice and does not alter water flows; (vii) operating motor vehicles for agricultural purposes; (viii) draining for growing agricultural products; (ix) erecting structures, including fences, required to enhance or maintain the agricultural productivity of the land; (x) using chemicals and fertilizers according to normally accepted agricultural practices, in order to grow crops for human and animal consumption or use, in or adjacent to wetlands, where authorized by other State, Federal, or local laws, including application of stabilized sludge as fertilizer when applied at agronomic loading rates in accordance with a valid 6 NYCRR Part 360 or Part 364 landspreading permit; or (xi) otherwise engaging in the use of wetlands for growing agricultural products such as crops, vegetables, fruits or flowers; BUT does NOT mean: (a) clear-cutting trees; (b) constructing roads that require moving earth or other aggregate or that alter water flow or in any way deviates from subparagraph (vi) or this paragraph; (c) filling or deposition of spoil, even for agricultural purposes; (d) mining; or (e) erecting structures not required to enhance or maintain the agricultural productivity of the land.

#### SECTION 4: PERMIT REQUIREMENTS

A new Section 4.1, “Exempted Uses,” must be added, and the existing Sections 4.1 and

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4.2 must be changed to 4.2 and 4.3, respectively, and modified as follows:

### 4.1 Exempted Uses (New Section 4.1)

Agricultural activities as defined in Section 3 are not regulated under this ordinance. However, land altered by an agricultural activity after its original designation as a wetland on the official New York State Wetland Maps is still protected under this ordinance and under the New York State Wetlands Act, so that any other activities on that land subsequent to the original designation are subject to the provisions of the Act and this local ordinance.

### 4.2 Permitted Uses (Revision of original Section 4.1)

Delete Item No. 7 which is now covered under 4.1 (Exempted Uses).

### 4.3 Regulated Activities (Revision of original Section 4.2)

Add “and Section 4.2” after “...other than those specified in Section 4.1...”

Reword Item No. 11 to read “removal or cutting of any vegetation except as permitted in Sections 4.1 and 4.2.”

Delete Item No. 13 from the existing subsection on “Regulated Activities.”

## SECTION 5: STANDARDS AND PROCEDURES FOR PERMITS

Add the following as subsection 5.4.5:

5. For regulatory authority of State-designated wetlands pursuant to Article 24, in granting, denying, or modifying permit, the Approval Authority shall apply the standards for permit issuance contained in Section 665.7(e) and (g) of Part 665 of Title 6 of the New York State Environmental Conservation Law.

## SECTION 7: VIOLATIONS AND PENALTIES

The following wording should replace the current Sections 7.1 and 7.2:

### 7.1 Administrative Sanctions (Replaces the original Section 7.1)

Any person who violates, disobeys or disregards any provision of Article 24 of the Environmental Conservation Law (ECL), including Title 5 and Section 24-0507 thereof or any rule or regulation, local law or ordinance, permit or order issued pursuant thereto, shall be liable to the State for a civil penalty of not to exceed three thousand dollars (\$3,000) for every such violation, to be assessed, after a hearing or opportunity to be heard upon due notice and with the rights to specification of the charges and representation by counsel at such hearing, by the Commissioner or **Municipality**. Such penalty may be recovered in an action brought by the Attorney General at the request and

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in the name of the Commissioner or **Municipality** in any court of competent jurisdiction. Such civil penalty may be released or compromised by the Commissioner or **Municipality** before the matter has been referred to the Attorney General; and where such matter has been referred to the Attorney General, any such penalty may be released or compromised and any action commenced to recover the same may be settled and discontinued by the Attorney General with the consent of the Commissioner or **Municipality**. In addition, the Commissioner or **Municipality** shall have power, following a hearing held in conformance with the procedures set forth in Section 71-1709, to direct the violator to cease his violation of the act and to restore the affected freshwater wetland to its condition prior to the violation, insofar as possible within a reasonable time and under the supervision of the Commissioner or **Municipality**. Any such order of the Commissioner or **Municipality** shall be enforceable in an action brought by the Attorney General at the request and in the name of the Commissioner or **Municipality** in any court of competent jurisdiction. Any civil penalty or order issued by the Commissioner or **Municipality** pursuant to this subdivision shall be reviewable in a proceeding pursuant to Article 78 of the Civil Practice Law and Rules.

### 7.2 Criminal Sanctions (Replaces original Section 7.2)

Any person who violates any provision of Article 24 of the ECL, including any rules or regulation, local law or ordinance, permit or order issued pursuant thereto, shall, in addition, for the first offense, be guilty of a violation punishable by a fine of not less than five hundred dollars (\$500) nor more than one thousand dollars (\$1,000); for a second and each subsequent offense he shall be guilty of a misdemeanor punishable by a fine of not less than one thousand dollars (\$1,000) nor more than two thousand dollars (\$2,000) or a term of imprisonment of not less than fifteen (15) days nor more than six (6) months or both. Instead of these punishments, any offender may be punishable by being ordered by the court to restore the affected freshwater wetland to its condition prior to the offense, insofar as possible. The court shall specify a reasonable time for the completion of such restoration, which shall be effected under the supervision of the Commissioner or **Municipality**. Each offense shall be deemed a separate and distinct offense and, in the case of a continuing offense, each day's continuance thereof shall be deemed a separate and distinct offense.

**Any ordinance drafted for local government assumption of Article 24 regulatory authority should be submitted for preliminary review to the New York State Department of Environmental Conservation, Division of Fish and Wildlife, 50 Wolf Road, Albany, NY 12233. Any such ordinance approved by the municipality must be submitted to the NYS DEC for approval (see 6NYCRR Part 665.4).**

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### **REFERENCES**

Kusler, J.A. 1983. Our National Wetland Heritage: A Protection Guidebook. The Environmental Law Institute, 1346 Connecticut Avenue NW, Washington, DC, pp. 131-147.

Veneman, P.L. 1986. Science base for freshwater wetland mitigation in the northeastern United States: Soils. In, *Mitigating Freshwater Wetland Alterations in the Glaciated Northeastern United States: an Assessment of the Science Base* (J.S. Larson, C. Neill, eds.), The Environmental Institute, University of Massachusetts, Amherst, MA, pp. 115-121.

Niering, W.A. and M.L. Kraus. 1986. Science base for freshwater wetland mitigation in the northeastern United States: Vegetation. In, *Mitigating Freshwater Wetland Alterations in the Glaciated Northeastern United States: an Assessment of the Science Base* (J.S. Larson, C. Neill, eds.), The Environmental Institute, University of Massachusetts, Amherst, MA, pp. 122-130.

Hollands, G.G., G.E. Hollis, and J.S. Larson. 1986. Science base for freshwater wetland mitigation in the glaciated northeastern United States: Hydrology. In, *Mitigating Freshwater Wetland Alterations in the Glaciated Northeastern United States: an Assessment of the Science Base* (J.S. Larson, C. Neill, eds.), The Environmental Institute, University of Massachusetts, Amherst, MA, pp. 130-141.

Federal Interagency Committee for Wetland Delineation. 1989. Federal Manual for Identifying and Delineating Jurisdictional Wetlands. U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, and U.S. Department of Agriculture - Natural Resources Conservation Service, Washington, D.C. Cooperative Technical Publication.

New York State Department of Environmental Conservation. 1993. Freshwater Wetlands Regulation: Guidelines on Compensatory Mitigation. Albany, NY.

New York State Department of Environmental Conservation. 1995. Freshwater Wetlands Delineation Manual. Albany, NY.

U.S. Environmental Protection Agency, Region 2. 1993. Wetlands Regulation Guidebook for New York State. Water Management Division, Marine and Wetlands Protection Branch. New York, NY.