

Town of Middletown  
Environmental Protection Ordinance  
Riparian Buffer Area (RBA) Conservation District

**Section 1.0 INTENDED PURPOSES**

The purposes of this article are as follows:

- 1.1 To promote the public health, safety and welfare of the citizens of the Town of Middletown by the protection of riparian areas that serve as a harmonious and appropriate part of the physical development of the Town of Middletown.
- 1.2 To regulate uses and structures, and provide transitional provisions, at or near watercourses, floodplains, wetlands and other bodies of water.
- 1.3 To regulate uses, activities and development within the RBA that would impair the function of the buffer to mitigate flood impact through the absorption of stormwater runoff.
- 1.4 To establish continuous vegetated strips along water bodies which serve to filter and remove pollution-laden runoff from entering water bodies, protect against streambank erosion and tree loss, and provide shade that maintains cool water for healthy aquatic ecosystems.
- 1.5 To promote stabilized streambanks which will reduce downstream transport of eroded sediment and pollutants.
- 1.6 To provide food, cover and thermal protection for aquatic organisms and other wildlife.
- 1.7 To preserve species-rich vegetative communities along and adjacent to water bodies.
- 1.8 To contribute to the aesthetics and property values of town landowners and adjacent communities.

**Section 2.0 GENERAL PROVISIONS**

- 2.1 Compliance. No area within the RBA Conservation District shall hereafter be used without full compliance with the terms of this article, the Zoning Code, the Subdivision Regulations, and other applicable regulations. This article shall apply to any lot or parcel within the jurisdiction of the town on which an RBA overlay district exists.

- 2.2 Riparian Buffer Area Conservation District overlay concept. The RBA Conservation District shall be deemed an overlay on any zoning district(s) now or hereafter enacted to regulate the use of land in the Town of Middletown.
- 2.2.1 The RBA Conservation District shall have no effect on the permitted uses in the underlying zoning district, except where said uses are intended to be located within the boundaries of the RBA Conservation District, as defined herein, and said uses are in conflict with the permitted uses set forth in this article. These regulations apply only to those portions of a tract or lot which come under the RBA Conservation District; portions not under the district shall conform to the standards of the underlying zoning district.
- 2.2.2 In those areas of the town where the RBA Conservation District applies, the requirements of the RBA Conservation District shall supersede the requirements of the underlying zoning district(s).
- 2.2.3 Should the RBA Conservation District boundaries be changed as a result of legislative or administrative actions or judicial decision, the zoning requirements applicable to the area in question falling outside of the RBA Conservation District shall revert to the requirements of the underlying zoning district(s) without consideration of this article.
- 2.2.4 For any parcel or any part thereof on which the RBA Conservation District is an overlay, should the underlying zoning classification(s) be changed as a result of legislative or administrative actions or judicial decision, such change(s) in classification shall have no effect on the boundaries of the RBA Conservation District, unless an amendment to said boundaries was included as part of the proceedings from which the subsequent change(s) originated.
- 2.3 Preservation of other restrictions. It is not intended by this article to repeal, abrogate or impair any existing easements, covenants or deed restrictions. However, where this article imposes greater restrictions, the provisions of this article shall prevail.
- 2.4 Town liability. Any determination that a proposed use complies with this article or any approval of a subdivision or land development plan or any issuance of a building permit within or near the RBA Conservation District shall not constitute a representation, guarantee or warranty of any kind by the town or by any official or employee thereof of the practicality or safety of the proposed use and shall create no liability upon the town, its officials or employees. This chapter does not imply that areas outside the RBA Conservation District boundaries or land uses permitted within said district will always be totally free from the adverse effects of erosion, pollution or other effects of nearby riparian areas.

- 2.5 Administrative Waivers through the Office of Town Manager. Where it can be sufficiently documented to the town’s satisfaction that a hardship exists regarding the enhancement standards contained in Section 8, applicants may request an administrative waiver. Such a waiver shall require applicants to adhere to the standards of Section 8 to the extent possible and/or provide a fee to the town designed to cover a share of the costs of enhancement. Under such circumstances, the town shall make every effort to seek sufficient grant funds or use fee-in-lieu funds collected to undertake or complete the enhancements; where such funds are not available, the town may undertake or complete the enhancements with general funds and place a lien on the subject property.

In situations where site conditions limit enhancement activity consistent with Section 8, the town may accept a fee-in-lieu of enhancement. Such a fee shall be based on the costs of enhancement as documented by the applicant and agreed to by the town. All such fees shall be deposited in an interest-bearing account under the control of the town which shall identify the purpose for which the fee was received. Interest earned on such an account shall become funds of that account. Funds in the account shall be expended only to provide riparian buffer area enhancements pursuant to the purposes of this district in compliance with the standards contained in Section 8.

Structures of less than 75 square feet mounted on pilings or blocks to permit the drainage and free flow of water shall be permitted within Zone 2 of the Riparian Buffer Area provided applicants receive an administrative waiver from the Office of Town Manager and demonstrate that no other feasible location exists. Any requests for structures of greater than 75 square feet shall be required to obtain approval from the Board of Adjustment consistent with the terms of this ordinance.

**Section 3.0 DESIGNATION AND INTERPRETATION OF BOUNDARY**

- 3.1 District defined. The RBA Conservation District consists of land which forms a transition zone between aquatic and terrestrial environments.

3.1.1 The RBA Conservation District consists of all of the following areas:

- A. One hundred feet on either side of perennial and intermittent streams and lakes as well as land adjacent to watercourses that drain greater than 30 acres;
- B. All of the floodplain;
- C. All of a wetland greater than 4,356 square feet (1/10 acre) in area, plus an additional 50 feet of adjacent land.

3.1.2 The RBA Conservation District shall consist of two zones:

- A. Zone 1: Zone 1 is the land within 25 feet of the water body or wetland defined in Section 3.1.1 and shall include any contiguous area of slopes in excess of 15%.
- B. Zone 2: Zone 2 is the remainder of the RBA.

3.2 District identification and calculation.

- 3.2.1 Initial identification of the watercourses/water bodies shall be made using the United States Geological Survey quadrangle maps or more accurate information, as available. Field verification to determine evidence and location of channelized flow is required for a specific determination.
- 3.2.2 Measurements for the Zone 1 boundary are to be made horizontally, perpendicular from the following reference points: top of bank of perennial streams, center line of intermittent streams and mean water level edge of lakes and ponds. Measurements for the Zone 2 boundary are to be made horizontally, perpendicular from the boundary of Zone 1.
- 3.2.3 Measurements shall be made at appropriate intervals perpendicular to these reference points so as to accurately reflect the character of the adjacent land.
- 3.2.4 The width of existing impervious areas, such as roadways, parking lots, structures, sidewalks and the like, shall not count towards the RBA Conservation District requirements.
- 3.2.5 The town, in consultation with its engineer, shall make final determination of the boundaries of the RBA Conservation District.

3.3 Exceptions. An RBA shall not be designated along industrial ponds or other man-made ponds, sewage lagoons, man-made irrigation or drainage ditches, stormwater management basins and other artificial features with a similar water quality or storage function, and agricultural operations with an approved NRCS conservation plan that includes the use of best management practices.

3.4 Any party aggrieved by any determination of the town and its engineer or other decision or determination under this section may appeal to the Board of Adjustment. The party contesting the location of the district boundary shall have the burden of proof in case of any such appeal.

**Section 4.0 USE REGULATIONS**

Whenever the underlying zoning district permits the following uses, such uses may be permitted in the RBA Conservation District; any use not specifically permitted by this

section is prohibited. All uses shall be designed so as to prevent woodland or habitat fragmentation and have the least overall environmental impact on the RBA.

4.1 Zone 1.

4.1.1 Permitted uses.

- A. Public or private passive open space, exclusive of structures and impervious cover, without disturbance of vegetation.
- B. Maintenance of public utilities, including, but not limited to, transmission lines, roads, drainage facilities and sewer and water facilities.
- C. Public water-dependent uses, including, but not limited to, the following: water-supply storage facilities, water-supply intakes, pumping stations, monitoring stations, wastewater treatment facilities and structures related thereto.
- D. Removal of vegetation, consistent with accepted forest management practices pursuant to Section 6.1. Reasons for vegetation removal include: the desire to reduce nonnative vegetation, the desire to eliminate diseased or damaged vegetation; the desire to permit limited public access and maintain existing scenic vistas consistent with Section 1.0 and the objective of maintaining vegetated riparian buffers.
- E. Stream restoration projects and bank stabilization consistent with the objectives of this district, including stream cleanups and water quality monitoring intended to preserve and protect the water body.
- F. Stormwater outfall, provided that the discharge velocity from the terminal end of the pipe or the associated energy dissipation practice is non-erosive and that every reasonable effort is made to convert concentrated flow to uniform, shallow sheet flow, filter sediments and control erosion, to achieve a reduced discharge velocity for the two-year frequency storm event.

4.1.2 Conditional uses.

- A. Road crossing which is within 15° of perpendicular to the water body.
- B. Utility crossing.

- C. Recreational trails which are no wider than eight feet and which are not surfaced with impervious materials. Relocation of preexisting trails, where necessary, shall be at the discretion of the Town Council, with the advice of the Planning Commission.

4.2 Zone 2.

4.2.1 Permitted uses.

- A. Any use permitted in Zone 1.
- B. Agricultural uses excepting those that: require till, require chemical application or include the grazing of animals. In addition, agricultural operations must utilize soil conservation practices consistent with a Natural Resources Conservation Service (NRCS) approved conservation plan.
- C. Stormwater management facilities. In addition, discharge velocities from the terminal end of the pipe or the associated energy dissipation practice shall be non-erosive and every reasonable effort is made to convert concentrated flow to uniform, shallow sheet flow, filter sediments and control erosion, to achieve a reduced discharge velocity for the two-year frequency storm event.

4.2.2 Conditional uses.

- A. Any conditional use permitted in Subsection 4.1.2 of this section, when in accordance with the terms specified therein.
- B. Sewer and/or water lines and other utility transmission lines running parallel to the water body along the RBA, provided that any disturbance is, at a minimum, mitigated with the provisions of the RBA management plan. These lines shall be located as far from Zone 1 as practical.
- C. Passive recreational areas that contain no impervious cover and do not disturb vegetation.

**Section 5.0 STANDARDS FOR APPROVAL OF CONDITIONAL USES**

- 5.1 Any proposed construction or land disturbance activity within the RBA shall be in compliance with the uses permitted in Section 4.0.
- 5.2 In addition to the standards and procedures of this article, and the standards and procedures of Section 10 of the Zoning Code, relating to conditional use permits,

the Town Council shall require the following standards be met prior to granting approval of any conditional use permit:

- 5.2.1 The RBA is being proposed for land disturbance because no other alternative location within the site is feasible or practical for the proposed conditional use and the proposed conditional use is essential for the proposed development or use of the site.
- 5.2.2 The RBA management plan shall comply with the provisions of Section 6.0 this article. All uses and activities must be accomplished in accordance with the approved RBA management plan.
- 5.2.3 Earthmoving activities and vegetation removal will be conducted only to the extent necessary to accommodate proposed uses within the RBA and in a manner that will not cause excessive surface water runoff, erosion, sedimentation or unstable soil conditions.
- 5.2.4 The proposed development and the resultant disturbance to the land and existing vegetative cover will not cause runoff and/or related environmental problems off the site.

**Section 6.0 RIPARIAN BUFFER AREA MANAGEMENT PLAN REQUIREMENTS**

An RBA management plan shall be submitted for review and approval with submission of the construction improvement plan. In the case of a conditional use, the RBA management plan shall be submitted along with the application for a conditional use permit. All information relevant to site maintenance and guarantee pursuant to Section 10.0 shall be included in the management plan. In addition, the plan shall include the following:

- 6.1 A narrative describing the development of the subject property, a description of the features of the RBA within the subject property as field delineated on plan submissions, including the location of native and non-native vegetation, and the impacts within the delineated RBA.
- 6.2 Description and depiction on a planting plan of enhancements according to Section 8.0, including surface mulch, guy-wires staking, and grazing protection details based on accepted standards. The planting plan shall also depict the invasive species that exist on the site, a narrative description of how such species shall be managed and removed (including a removal schedule), and a clear depiction of the enhancements that shall occur in such areas. Also included shall be a clear statement describing how all enhancements meet the design standards contained in Section 9.0.

- 6.3 The number and placement of signs identifying the RBA and the need for minimal disturbance within RBA'S.
- 6.4 A narrative describing the significance of the RBA and the maintenance activities which will be performed. Such narrative shall include, but shall not be limited to, the following language:

"RBA's shall be inspected annually and following severe storms for evidence of sediment deposit, erosion or concentrated flow channels, as well as the reemergence of invasive exotics. Corrective action shall be taken to stop erosion and restore sheet flow."

"The following activities shall be prohibited in the RBA: excessive use of fertilizers, pesticides or other chemicals; vehicular traffic or excessive pedestrian traffic; litter; and removal or disturbance of vegetation that aids erosion control and buffering objectives."

"Zone 1 vegetation shall remain undisturbed except for removal of invasive exotics and individual trees presenting unusual hazards such as potentially blocking culverts, etc."

"Zone 2 vegetation adjacent to Zone 1 shall remain undisturbed except for removal of invasive exotics. Zone 2 vegetation on the outer edge of the RBA should be mowed semiannually (10-foot wide strip at the outside edge of the buffer). Vegetation should be inspected at least twice annually and remedial measures taken as necessary to maintain dense vegetation."

**Section 7.0 USES AND/OR STRUCTURES RENDERED NONCONFORMING BY ADOPTION OF DISTRICT**

Following adoption of this article, any use or structure which is situated within the boundaries of the RBA Conservation District which does not conform to the use provisions of Section 4.0 above shall become a nonconforming use or structure, regardless of its conformance to the district in which it is located without consideration of this district. Uses, structures and buildings that existed prior to the enactment of this ordinance that have not been discontinued and for which no expansion is anticipated may be continued without further regulation. The expansion or re-establishment of a nonconforming use or structure shall be governed by the requirements of Section 9-A of the Zoning Code; the Board of Adjustment shall ensure that the standards contained in this district are applied to the expansion or re-establishment of any nonconforming use or structure, as defined therein.

**Section 8.0 ENHANCEMENT STANDARDS FOR RIPARIAN BUFFER AREAS**

- 8.1 Emphasis shall be given to preserving existing native vegetation that conforms to the requirements of this section. Other than select planting of native vegetation



and management of riparian areas in accordance with this Code, disturbance of riparian areas shall be minimized. Planting of trees and shrubs within the RBA shall be performed in accordance with this section where vegetation is not present; quantities of plantings shall be sufficient to satisfy the requirements of this district.

- 8.2 All planting shall be done by zone. The zone closest to the stream, Zone 1, shall consist of species native to the riparian zone and selected for their value in stream bank stabilization. A mix of species that provides prolonged stable leaf fall necessary to meet energy and pupation needs of aquatic insects shall be selected. In Zone 2, plant species shall be matched to the existing native habitat. Species shall be selected to assist with sediment control and nutrient uptake at the outer edges of RBA's.
- 8.3 Combinations of trees, shrubs and grasses protect the stream more than any one species; as such, a variety of species shall be included in the planting plan. Overall design can be modified to fit the landscape, provided that the applicant supplements existing vegetation with additional native riparian trees and shrubs, where needed, to conform to the overall requirements of this section.
- 8.4 Planting standards.
  - 8.4.1 Zone 1. A minimum of eight canopy trees having a one-inch caliper and eight understory trees between five feet and six feet in height shall be planted per 1,000 square feet of open area. Where site conditions warrant, two shrubs may be substituted for each tree required, provided that no more than 10% of the trees required are replaced by shrubs. Planting requirements may be fully or partially waived where the applicant documents that existing vegetation substantially achieves this standard.
  - 8.4.2 Zone 2. A minimum of six canopy trees having a one-inch caliper and 10 shrubs of two to three feet in height shall be planted per 1,000 square feet of open area. Planting requirements may be fully or partially waived where the applicant documents that existing vegetation substantially achieves this standard.
- 8.5. Planting plans shall be prepared jointly by a Delaware-registered landscape architect with documented practical knowledge of riparian ecosystems. All planting plans shall include a planting schedule that summarizes the quantity, type, size and root condition of all plantings. All RBA enhancements shall be installed using practices accepted by the American Association of Nurserymen.

**Section 9.0 RIPARIAN BUFFER AREA DESIGN STANDARDS**

The locations, dimensions and spacing of required plantings shall be adequate for their proper growth and maintenance, considering the sizes of such plantings at maturity and

their present and future environmental requirements, such as soil, pH, moisture and sunlight. Site preparation should focus on the removal of nonnative species, such as honeysuckle and multiflora rose, if present. Weed control is essential during establishment of the RBA and for the survival and growth of trees and shrubs.

9.1 Zone 1.

9.1.1 The purpose of Zone 1 is to:

- A. To create a stable ecosystem adjacent to the water's edge;
- B. To provide a soil/water contact area to facilitate nutrient buffering processes;
- C. Provide shade to moderate and stabilize water temperature (and encourage the production of beneficial algal forms); and
- D. Contribute necessary detritus and large woody debris to the stream ecosystem.

9.1.2 Dominant vegetation shall be composed of a variety of native riparian tree and shrub species and such plantings as are important for streambank stabilization. A mix of species will provide prolonged stable leaf fall necessary to meet the energy and pupation needs of aquatic insects.

9.1.3 Management of Zone 1 shall be limited to bank stabilization and removal of invasive vegetation. Logging and other overland equipment shall be prohibited except for stream crossings and stabilization work.

9.2 Zone 2.

9.2.1 The purpose of Zone 2 is twofold: one, to provide sediment filtering and nutrient uptake by forest trees and shrubs, and two, to provide the space necessary to convert concentrated storm flows to uniform, shallow, sheet flow by devices such as diversions, basins and level spreaders.

9.2.2 Predominant vegetation in the area adjacent to Zone 1 shall consist of riparian trees and shrubs capable of stabilizing soil.

9.2.3 Predominant vegetation on the outer edge of this zone (10 foot wide strip at the outside edge of the buffer) shall consist of additional shrubs, dense grasses and forbs (including wildflower species) or turf grass for sediment control and nutrient uptake. The transition zone shall be designed to maintain sheet flow. Zone 2 vegetation on the outer edge of the RBA should be mowed not more than semiannually. Vegetation should be

inspected semiannually and remedial measures taken as necessary to maintain dense vegetation.

**Section 10.0 SITE MAINTENANCE AND GUARANTEE**

- 10.1 All landscape improvements to be provided in accordance with this district shall be installed and maintained by accepted practices as recognized by the American Association of Nurserymen. Planting and maintenance of vegetation shall include, as appropriate, but not necessarily be limited to provisions for surface mulch, guy-wires and stakes, irrigation, fertilization, insect and disease control, pruning, mulching, weeding, invasive species removal and watering. Documentation of adherence to the invasive species removal schedule specified in Section 6.0 shall be made available upon request. Fertilizers and pesticides shall not be applied unless absolutely necessary and only in concentrations minimally needed to achieve the desired goal.
  
- 10.2 The applicant shall make arrangements acceptable to the town that all landscape improvements installed in accordance with this chapter shall be guaranteed and maintained in a healthy and/or sound condition or otherwise be replaced once by equivalent improvements for a period of at least twenty-four (24) months following their acceptance by the town, except as otherwise required by the town Subdivision regulations. After installation and prior to town acceptance of the site improvements, representatives of the town shall perform an inspection of the finished site for compliance with the approved planting plan. Provided that the finished site is found to be acceptable, the twenty-four (24) month guarantee period shall commence five days from the date of inspection. Plants found to be in poor health or lacking normal growth habit shall be replaced with a substitute plant material determined by the town to be more suitable for the planting scheme. Replacement plants shall be inspected by representatives of the town after installation. All plants shall be in a vigorous and thriving condition at the end of the twenty-four month period as determined above. Final inspection of the site following the twenty-four month period will be made by representatives of the town and final approval given.
  
- 10.3 The applicant shall make arrangements acceptable to the town for the property's long-term landscape maintenance. The applicant shall provide the names, addresses and telephone numbers of those persons or organizations who will be assuming such responsibilities. Landscaping improvements required by this chapter or any other ordinance shall be subject to suitable restrictive covenants that run with the land and, if practicable, rules and regulations governing the use and maintenance of common lands and facilities, which covenants, rules and regulations shall be in form and substance acceptable to the town attorney and, in the case of covenants, rules and regulations, shall, without limiting the foregoing, require the maintenance and replacement and prohibit the destruction or removal of all landscaping materials and improvements depicted on the landscaping plan; empower the town to enforce said obligations; and prohibit the amendment or

termination of any of the mandatory terms thereof without the express approval of the town.

- 10.4 Where accidental damage or vandalism of plants occurs, the applicant shall replace the damaged plant material in accordance with the original or modified planting plan. In such cases, the twenty-four (24) month replacement policy required above may be waived, and any remaining time in the guarantee period shall be binding for repeat replacements.
- 10.5 At the town's discretion, the applicant may be required to escrow sufficient funds for the maintenance and/or replacement of the proposed vegetation during the twenty-four (24) month replacement period. In addition, an escrow may be required for the removal and replacement of specimen trees damaged during construction.

### **Section 11.0 ADMINISTRATION AND ENFORCEMENT**

It shall be contingent upon anyone proposing site disturbance activities as herein defined and described to consider the standards contained in this district. Unless otherwise directed herein, applications pursuant to the requirements of this district which are required as part of submissions pursuant to the Subdivision Regulations, shall conform to the provisions of said chapter for plan submission and review, inspections, fees, plan amendments, violations and penalties and appeals. All other applications shall be subject to the administrative and enforcement provisions of the Zoning Code.

#### Definitions

**Erosion:** The wearing away of soil by action of wind, water or other geologic agents.

**Hardship:** A circumstance or condition whereby there is no possibility that a property can be developed in strict conformity with the provisions of the town code or where no alternatives exist that would permit the viable use of the property or where an improvement required by the town code would present a documented financial burden.

**Intermittent stream:** A channel with banks and a bed within which concentrated water flows some of the time, e.g., the water table falls below the bottom of the water body at some time during the year.

**Floodplain:** A relatively flat or low-lying land area adjoining a river, stream or watercourse which is subject to periodic partial or complete inundation during the base flood. The base flood shall be the 100-year storm event and may be considered as those areas identified by the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) in effect at the time of the application.

**Forb:** An herbaceous plant other than a grass that is commonly found growing in meadows.

**Mean water level:** The observed limit of dry weather flow elevation in a watercourse or water body.

**Perennial stream:** A channel with banks and a bed within which concentrated water flows all of the time, e.g., the water table continually intersects the bottom of the water body.

**Riparian buffer area:** Land adjacent to a perennial or intermittent stream, lake, pond, or wetland. Riparian areas form the transition zone between the aquatic and the terrestrial environment and are fully defined in Section 3 of Article \_\_, Riparian Buffer Area (RBA) Conservation District.

**Site Disturbance:** Any activity which causes land on a given site to be exposed to the danger of erosion, including removal of vegetation, clearing, grading, filling, plowing and other types of earthmoving.

**Top of bank:** A point above the mean water surface of a watercourse which defines the maximum depth of channel flow in the watercourse. It is either determined visually or computed as an elevation using the peak rate of runoff from a two-year storm event

**Water body:** Any feature defined by a bank or shore in which water can be found.

**Watercourse:** A channel with banks and a bed within which concentrated water flows either continuously or intermittently, including, but not limited to, intermittent streams, perennial streams and natural drainage channels.

**Wetland:** Those areas inundated or saturated by surface or ground water at a frequency and duration sufficient to support and that under normal circumstances do support a prevalence of vegetation typically adapted for life in saturated soil conditions; or alluvial soils and certain hydric soils, as defined by the Natural Resources Conservation Service; or as further defined and delineated in accordance with the Federal Manual for Identifying and Delineating Jurisdictional Wetlands, dated January 10, 1989, and as may be amended from time to time; or as further defined and delineated by the United States Army Corps of Engineers, the United States Environmental Protection Agency or the Delaware Department of Natural Resources and Environmental Control (DNREC). Manmade wetlands intended to manage stormwater runoff are not considered wetlands; manmade wetlands intended for mitigation or other natural purposes are considered wetlands.