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**STREAM BUFFER
CONSERVATION ZONE
MODEL ORDINANCE**

For the Whippany River Watershed Action Committee

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STREAM BUFFER CONSERVATION ZONE MODEL ORDINANCE

1. PURPOSE

In recognition of the fact that natural features contribute to the welfare of residents, the following regulations have been enacted to provide reasonable controls governing the restoration, conservation, disturbance, and management of existing stream buffers for all perennial and intermittent streams and all lakes and ponds in the municipality by establishing designated Stream Buffer Conservation Zones. the specific purposes and intent of this article are to:

- A. Regulate the land use, siting, and engineering of all development to be consistent with the intent and objectives of this ordinance, accepted conservation practices, so as to respect the carrying capacity of existing natural resources as new development occurs.
- B. Reduce the amount of nutrients, sediment, organic matter pesticides, and other harmful substances that reach watercourses, wetlands, and other surface water bodies as well as subsurface waters by optimizing scientifically-proven processes including filtration, deposition, absorption, adsorption, plant uptake, biodegradation, denitrification through stabilizing concentrated flows and encouraging distributed sheet flow and by improving infiltration.
- C. Provide for shading (i.e., cooling) of the aquatic environment so as to moderate temperatures, protect fish habitat, retain more dissolved oxygen, and encourage the growth of diatoms, beneficial algae, and aquatic insects.
- D. Provide organic matter through leaf debris which falls into the stream and becomes trapped by woody debris (fallen trees and limbs) and rocks where such provides food and habitat for small bottom dwelling organisms (insects, amphibians, crustaceans, and small fish), essential to maintain the food chain.
- E. Increase stream bank stability and maintain natural fluvial geomorphology of the stream system, reducing streambank erosion and sediment production and protecting fish habitat.
- F. Conserve the natural features important to land and water resources (e.g., headwater areas, groundwater recharge zones, floodway, floodplain, springs, streams, wetlands, woodlands, prime wildlife habitats) and other features constituting high recreational value or containing amenities that exist on developed and undeveloped land.
- G. Conserve natural, scenic, and recreation areas within and adjacent to stream areas for the community's benefit, promoting the positive functions of greenways.
- H. Improve and maintain the safety, reliability and adequacy of the water supply for domestic, agricultural, commercial, industrial and recreational uses along with sustaining diverse populations of aquatic flora and fauna.
- I. Work with floodplain, steep slope, and other ordinances that regulate environmentally sensitive areas to minimize hazards to life, property, and stream

features.

- J. Assist in the implementation of pertinent state laws concerning erosion and sediment control practices.

2. DEFINITIONS

For the purposes of this ordinance the following definitions shall apply:

Stream - a natural watercourse containing flowing water for at least part of the year.

Perennial stream - a stream that flows continuously throughout the year in most years.

Intermittent stream - a stream that does not always have water in it, that has a drainage area of 50 acres or greater, or is portrayed as a dashed line on a USDA Soil Survey Map of the most recent edition, whichever is more restrictive.

3. ESTABLISHMENT OF THE STREAM BUFFER CONSERVATION ZONE

- A. The Stream Buffer Conservation Zone is defined as those areas surrounding municipally designated surface water bodies, including creeks, lakes and intermittent watercourses that intercept surface water runoff, wastewater, subsurface flow, and/or deep groundwater flows from upland sources and function to remove or buffer the effects of associated nutrients, sediment, organic matter, pesticides, or other pollutants prior to entry into surface waters. This area may also provide wildlife habitat, control water temperature, attenuate flood flow, and provide opportunities for passive recreation. This buffer area may or may not contain trees and other native vegetation at the time of ordinance enactment.

- B. Locational Applicability

The establishment of the Stream Buffer Conservation Zone applies to the following areas which are identified on the municipal stream buffer map:

1. Lands adjacent to municipally designated streams within the municipality.
2. Lands adjacent to municipally designated intermittent water courses within the municipality.
3. Lands at the margins of municipally designated lakes.

- C. Procedural Applicability

These provisions are intended to modify the location of development in relation to specified water resource areas but not to modify its overall intensity. These provisions apply to land disturbances resulting from or related to any activity or use requiring issuance of any of the following permits or approvals:

1. Building permit

2. Zoning variance
3. Special exception
4. Conditional use
5. Subdivision/land development approval
6. On any lot of record at the time of enactment of this ordinance, _____ may issue a permit for building activity in accordance with all applicable zoning and subdivision regulations where such building activity intrudes into the Stream Buffer Conservation Zone, subject to _____'s determination that the intrusion is limited to the minimum practicable extent necessary to accommodate the proposed building activity.
7. Where any applicant demonstrates to the satisfaction of _____ that strict adherence to these principles will render the lot or tract unusable or unsuitable for development in accordance with all applicable zoning and subdivision regulations, or demonstrates that alternative design provisions shall achieve comparable conservation objectives, _____ may waive compliance with these provisions. In so waiving compliance, _____ may require that land disturbance with the Stream Buffer Conservation Zone be limited to the maximum practicable extent necessary to accommodate lawful use of the lot or tract and/or may require that alternative means to achieve conservation objectives as listed above be incorporated into applicable plans.

D. Stream Buffer Conservation Zone Dimensions

The measurement of the Stream Buffer Conservation Zone shall extend a minimum of 75 feet from each defined edge of an identified watercourse or surface water body at bankfull flow or level, or shall equal the extent of the 100 year floodplain, whichever is greater. The District will consist of two distinct zones designated as:

1. Zone One: This zone will begin at each edge of an identified waterway (which can include wetlands and intermittent watercourses) and will occupy a margin of land with a minimum width of 25 feet measured horizontally on a line perpendicular to the edge of water at bankfull flow.
2. Where steep slopes (in excess of 25 percent) are located within 25 feet of a municipally designated watercourse, Zone One shall extend the entire distance of this sloped area. If the distance of this sloped area is greater than 75 feet, there will be no requirement for the establishment of Zone Two. If the distance is less than 75 feet, the width of Zone Two will be adjusted so that the total buffer width (Zone One and Zone Two) will be 75 feet maximum.
3. Zone Two: This zone will begin at the outer edge of Zone One and occupy a minimum width of 50 feet in addition to Zone One.
4. Where the 100-year floodplain extends greater than 75 feet from the

waterway, Zone One shall remain a minimum of 25 feet wide, and Zone Two shall extend from the outer edge of Zone One to the outer edge of the 100-year floodplain.

The developer, applicant, or designated representative shall be responsible for the initial width determination of the Stream Buffer Conservation Zone and for identifying this area on any plan that is submitted to the municipality for subdivision, land development, or other improvements that require plan submissions or permits. This initial determination shall be subject to review and approval by _____.

4. USES PERMITTED IN THE STREAM BUFFER CONSERVATION ZONE

In addition to regulated activities permitted by the State, provision for unpaved trail access, and selective removal of hazardous or invasive vegetative species, the following uses are permitted in the Stream Buffer Conservation Zone, either by right or after review and approval by _____. However, within any buffer, no construction, development, use, activity, or encroachment shall be permitted unless the activity is described in the Stream Buffer Management Plan as set forth below.

A. Zone One

1. Uses Permitted by Right

Open space uses that are primarily passive in character shall be permitted to extend into the area defined as Zone One, including:

- a. Wildlife sanctuaries, nature preserves, forest preserves, fishing areas, passive areas of public and private parklands, and reforestation in compliance with the guidelines of the Stream Buffer Management Plan.
- b. Streambank stabilization in compliance with the guidelines of the Stream Buffer Management Plan.

2. Uses Requiring Municipal Review and Approval

Zone crossings by farm vehicles and livestock, recreational trails, roads, railroads, centralized sewer and/ or water lines, and public utility transmission lines, and public utility transmission lines provided that any disturbance is offset by buffer improvements identified in the Stream Buffer Management Plan.

B. Zone Two

1. Uses Permitted By Right

The following primarily passive uses, which are primarily passive shall be permitted by right to extend into the area defined as Zone Two:

- a. Open space uses including wildlife sanctuaries, nature preserves, forest preserves, passive areas of public and private parklands, and recreational trails.

- b. Reforestation in compliance with appropriate guidelines as specified in the Stream Buffer Management Plan as set forth below.
- c. Minimum required front, side, and rear yards on private lots, provided that no yard may extend into Zone Two more than half the distance between the outer boundaries of Zone One and Zone Two.
- d. Agricultural uses existing at the time of adoption of this ordinance, provided that appropriate conservation techniques are being applied.

2. Uses Requiring Municipal Review and Approval

- a. New agricultural uses.
- b. Buffer crossings by farm vehicles and livestock, roads, railroads, centralized sewer and/or water lines, and public utility transmission lines provided that any disturbance is at a minimum, offset by buffer improvements identified in the Stream Buffer Management Plan.
- c. Centralized sewer and/or water lines and public utility transmission lines running along the buffer, provided that any disturbance is, at a minimum, offset by buffer improvements identified in the Stream Buffer Management Plan. These lines shall be located as far from Zone One as practical.
- d. Selective cutting of trees when removal is consistent with approved standards in the Stream Buffer Management Plan.
- e. Areas such as camps, campgrounds, picnic areas and golf courses. Active recreation areas such as ballfields, playgrounds, and courts provided these uses are designed in a manner that will not permit concentrated flow.
- f. Naturalized stormwater basins in compliance with the guidelines in the Stream Buffer Management Plan. The entire basin shall be located a minimum of 50 feet from the defined edge of identified watercourses.

5. USES SPECIFICALLY PROHIBITED IN THE STREAM BUFFER CONSERVATION ZONE

Any use or activity not authorized within Section 4 shall be prohibited within the Stream Buffer Conservation Zone. No woodland disturbance or other land disturbance shall be permitted within 25 feet of the outermost limit of any wetland or streambank, measure horizontally, except as noted in this ordinance. By way of example, the following activities and facilities are specifically prohibited:

- A. Clear-cutting of trees and other vegetation.
- B. Selective cutting of trees and/or the clearing of other vegetation within Zone One, except where such clearing is necessary to prepare land for a use permitted under Section 4 and where the effects of these actions are mitigated by revegetation, as specified under Section 8.
- C. Selective cutting of trees and/or the clearing of other vegetation within Zone Two, except where such clearing is necessary to prepare land for a use permitted by Section 4 and where the effects of these actions are mitigated by revegetation, as

specified under Section 8.

- D. Removal of trees in excess of selective cutting, except where such removal is necessary as a means to eliminate dead, diseased, or hazardous tree stands that jeopardize public safety or as part of a reforestation project, provided that the removal is in compliance with a Stream Buffer Management Plan approved by the municipal engineer, governing body, or its appointed representative.
- E. Removal or disturbance of vegetation in a manner that is inconsistent with erosion control and buffer protection.
- F. Storage of any hazardous or noxious materials.
- G. Use of fertilizers, pesticides, herbicides, and/or other chemicals in excess of prescribed industry standards or the recommendations of the Morris County Conservation District.
- H. Roads or driveways, except where permitted as buffer crossings in compliance with Section 4.
- I. Motor or wheeled vehicle traffic in any area not designed to accommodate adequately the type and volume.
- J. Parking lots.
- K. Any type of permanent structure, including fences, except structures needed for a use permitted in Section 4.
- L. Subsurface sewage disposal areas.
- M. Sod farming.

6. NONCONFORMING STRUCTURES AND USES IN THE STREAM BUFFER CONSERVATION ZONE

Nonconforming structures and uses of land within the Stream Buffer Conservation Zone shall be regulated under the provisions of the _____ Zoning Ordinance (existing nonconforming use regulations). The following additional regulations also shall apply:

- A. Existing nonconforming structures or uses within Zones One or Two that are not permitted under Section 4 may be continued but shall not have the existing building footprint or uses expanded or enlarged.
- B. Discontinued nonconforming uses may be resumed any time within one year from such discontinuance but not thereafter when showing clear indications of abandonment. No change or resumption shall be permitted that is more detrimental to the Stream Buffer Conservation Zone, as measured against the intent and objectives under Section 1, than the existing or former nonconforming use.
- C. This one year time frame shall not apply to agricultural uses which are following

prescribed Best Management Practices for crop rotation.

7. BOUNDARY INTERPRETATION, APPEALS PROCEDURES, INSPECTIONS

- A. When a landowner or applicant disputes the Zone (One or Two) boundaries of the Stream Buffer Conservation Zone or the defined edge of a watercourse, surface water body, the landowner or applicant shall submit evidence to _____ that describes the boundary, presents the landowner or applicant's proposed boundary, and presents all justification for the proposed boundary change.
- B. The _____ Engineer, or appointed representative, shall evaluate all material submitted and shall make a written determination within 45 days, a copy of which shall be submitted to _____ and landowner or applicant.
- C. Any party aggrieved by any such determination or other decision or determination under this section may appeal to the _____ under the provisions this ordinance. The party contesting the location of the district boundary shall have the burden of proof in case of any such appeal.
- D. Inspections
 - 1. Lands within or adjacent to an identified Stream Buffer Conservation Zone will be inspected by the municipal representative when:
 - a. A subdivision or land development plan is submitted.
 - b. A building permit is requested.
 - c. A change or resumption of nonconforming use is proposed.
 - 2. The Stream Buffer Conservation Zone may also be inspected periodically by the representatives from _____ if excessive or potentially problematic erosion is present, other problems are discovered, or at any time when the presence of an unauthorized activity or structure is brought to the attention of _____ officials.

8. MANAGEMENT OF THE STREAM BUFFER CONSERVATION ZONE

A. Stream Buffer Management Plan

Within any Stream Buffer Conservation Zone, no construction, development, use, activity, or encroachment shall be permitted unless the effects of such development are accompanied by preparation, approval, and implementation of a Stream Buffer Management Plan.

The landowner, applicant, or developer shall submit to _____, or its appointed representative, a Stream Buffer Management Plan prepared by a landscape architect, professional engineer or other qualified professional which fully evaluates the effects of any proposed uses on the Stream Buffer Conservation Zone. The Stream Buffer Management Plan shall identify the existing conditions (vegetation, 100-year floodplain, soils, slopes, etc.), all proposed activities, and all proposed management techniques, including any measures necessary to offset

disturbances to the Stream Buffer Conservation Zone. The Plan shall be approved by the _____ Engineer, or appointed representative, as part of the subdivision and land development process.

The Stream Buffer Conservation Plan should include management provisions in narrative and/or graphic form specifying:

1. The manner in which the Zone will be owned and by whom it will be managed and maintained.
 2. The conservation and/or land management techniques and practices which will be used to conserve and protect the Zone, as applicable.
 3. The professional and personnel resources that are expected to be necessary in order to maintain and manage the Zone.
- B. A Stream Buffer Management Plan is not required where the Stream Buffer Conservation Zone is not being disturbed.

9. VEGETATION SELECTION IN THE STREAM BUFFER CONSERVATION ZONE

To function properly, dominant vegetation in the Stream Buffer Management Plan shall be selected from a list of plants most suited to the Stream Buffer Conservation Zone, available at _____. Plants not included on the list may be permitted by the _____ Engineer, or its appointed representative, when evidence is provided from qualified sources certifying their suitability. _____ may require species suitability to be verified by qualified experts at the Morris County Conservation District, Natural Resources Conservation Service, NJ Department of Environmental Protection, the US Fish and Wildlife Service, or state and federal forest agencies.

- A. In Zone One, dominant vegetation shall be composed of a variety of native riparian zone tree, shrub, tall grasses and other appropriate species necessary for streambank stabilization.
- B. In Zone Two, dominant vegetation shall be composed of riparian zone trees and shrubs, with an emphasis on native species and appropriate plantings necessary to stabilize the soil.
- C. Disturbed areas shall be revegetated with riparian zone species, in compliance with an approved Stream Buffer Management Plan.
- D. Areas that cannot be revegetated shall be restored in compliance with an approved Stream Buffer Management Plan.