Attachment "A"

A RESOLUTION CONTINUING A PUBLIC HEARING ON A LAND USE ORDINANCE TEXT AMENDMENT DEALING WITH STREAM BUFFERS IN ACCORDANCE WITH JORDAN BUFFER RULE 15A NCAC 02B.0267
Resolution No. 22/2010-11

WHEREAS, the Carrboro Board of Aldermen seeks to provide ample opportunities for the public to consider modifications to existing policies and regulations; and

NOW, THEREFORE BE IT RESOLVED that the Board of Aldermen continues a public hearing to October 26, 2010 allow additional time for review by North Carolina Division of Water Quality staff of "AN ORDINANCE REVISING ARTICLE XVI OF THE CARRBORO LAND USE ORDINANCE DEALING WITH FLOOD DAMAGE PREVENTION, STORM WATER MANAGEMENT, AND WATERSHED PROTECTION."

AN ORDINANCE REVISING THE CARRBORO LAND USE ORDINANCE IN RELATION TO THE RIPARIAN BUFFER REQUIREMENTS OF THE JORDAN LAKE RULES

THE BOARD OF ALDERMEN OF THE TOWN OF CARRBORO ORDAINS:

Section 1. All references in this ordinance are to Chapter 15 of the Carrboro Town Code, the Carrboro Land Use Ordinance.

Section 2. Part III of Article XVI of the Carrboro Land Use Ordinance is rewritten to read as follows:

ARTICLE XVI

FLOOD DAMAGE PREVENTION, STORMWATER MANAGEMENT, AND WATERSHED PROTECTION

PART III. WATER QUALITY BUFFERS

Section 15-269 Findings, Purpose, and Applicability

(a) The Board finds that:

(1) Soil and pollutants carried overland from upstream land uses can be effectively trapped by leaving a relatively undisturbed strip of vegetation parallel and adjacent to a drainage feature.

(2) Properly managed overland water flow can be directed into this water quality buffer area in a manner that will minimize the concentration of flow and promote diffuse flow and infiltration of the water.

(3) Sediments and other pollutants carried by water will be reduced as a result of the dispersion and infiltration of flow and associated filtering, absorption, and uptake of pollutants.

(b) The purpose of this part is to protect, preserve, and enhance water quality buffers in order to maintain their pollutant removal functions and protect the quality of surface waters and water supplies. With regard to the Jordan Buffer Rules, it should be noted that nutrient removal is the primary function of riparian buffers. The NC Division of Water Quality shall administer the portion of these requirements of Rule 15 A NCAC 02B .0267 and .0268 (Jordan Water Supply Nutrient Strategy: Protection of Existing Riparian Buffers and Mitigation of Existing Riparian Buffers, respectively) for activities conducted under the authority of the State, the United States, multiple jurisdictions, or local units of governments, and forest harvesting and agricultural activities. The Town of Carrboro shall administer those provisions for all other landowners and shall administer the remaining

provisions of this Article for all other land disturbing activities and developments.

(c) Wetlands adjacent to surface waters or within 50 feet of surface waters shall be considered as part of the water quality buffers but are also regulated pursuant to other State and Federal regulations.

Section 15-269.1 Definitions

For purposes of this part, the following terms shall have the meaning as indicated:

(a) 'Access Trails' means pedestrian trails constructed of pervious or impervious surfaces, and related structures to access a surface water including boardwalks, steps, rails, signage.

(b) Archaeological Activities' means activities conducted by a Registered Professional Archaeologist (RPA).

(c) 'Buffer' means a water quality buffer, or an undeveloped area parallel and adjacent to a drainage feature to protect and enhance water quality.

(d) 'DBH' means diameter at breast height of a tree measured at 4.5 feet above ground surface level.

(e) 'Development' means the same as defined in Rule 15A NCAC 2B .0202(23).

(f) 'Diffuse flow' means flow that generally moves down slope via sheet flow rather than concentrating in rills, gullies, and ditches and in doing so is able to infiltrate into the soil and plant root zone.

(g) 'Ditch' means a man-made channel other than a modified natural stream

(h) 'Ephemeral stream' means a drainage feature that carries only surface runoff in direct response to precipitation. An ephemeral stream may or may not have a well-defined channel and the stream bed is always above the water table. An ephemeral stream lacks the biological, hydrological, and physical characteristics commonly associated with perennial or intermittent streams.

(i) 'Existing development' means development, other than that associated with agricultural or forest management activities, that meets one of the following criteria:

1. It either is built or has established a vested right based on statutory or common law as interpreted by the courts, for projects that do not require a state permit, as of the effective date of either local new 34/34 development stormwater programs implemented under Rule 15A NCAC 2B .0265 (Jordan Water Supply Nutrient Strategy: Stormwater Management for New Development) or, for projects requiring a state permit, as of the applicable compliance date established in Rule 15A NCAC 2B .0271 (Jordan Water Supply Nutrient Strategy: S tormwater Management for New Development), Items (5) and (6); or

2. It occurs after the compliance date set out in Sub-Item (4)(d) of Rule .0265 (Jordan Water Supply Nutrient Strategy: Stormwater Management for New Development) but does not result in a net increase in built-upon area.

(j) 'Greenway / Hiking Trails' means pedestrian and bicycle trails constructed of pervious or impervious surfaces and related structures including but not limited to boardwalks, steps, rails, and signage and that generally run parallel to the shoreline.

(K) 'High Value Tree' means a tree that meets or exceeds the following standards: for pine species, 14-inch DBH or greater or 18-inch or greater stump diameter; or for hardwoods and wetland species, 16-inch DBH or greater or 24-inch or greater stump diameter.

(l) 'Intermittent stream' means a well-defined channel that contains water for only part of the year, typically during winter and spring when the aquatic bed is below the water table. The flow may be heavily supplemented by stormwater runoff. An intermittent stream often lacks the biological and hydrological characteristics commonly associated with the continuous conveyance of water.

(m) 'New development,' for the purpose of this Article, means any development project that does not meet the definition of existing development set out in this Ordinance.

(n) 'Perennial stream' means a well-defined channel that contains water year round during a year of normal rainfall with the aquatic bed located below the water table for most of the year. Groundwater is the primary source of water for a perennial stream, but it also carries stormwater runoff. A perennial stream exhibits the typical biological, hydrological, and physical characteristics commonly associated with the continuous conveyance of water.

(o) For purposes of this Article only, 'Public utility' means any governmental entity, nonprofit organization, corporation, or any entity defined as a public utility for any purpose by Section 62.3 of the North Carolina General Statutes that is engaged in the production, generation, transmission, delivery, collection, or storage of water, sewage electricity, gas, oil, or electronic signals

(p) 'Riparian buffer enhancement' is defined as the process of converting a non-forested riparian area, where woody vegetation density is greater than or equal to 100 trees per acre but less than 200 trees per acre, to a forested riparian buffer area. The enhanced, forested riparian buffer area shall include at least two native hardwood tree species planted at a density sufficient to provide 320 trees per acres at maturity, and diffuse flow through the riparian buffer shall be maintained.

(q) 'Riparian buffer restoration' is defined as the process of converting a non-forested riparian area, where woody vegetation density is less than 100 trees per acre, to a forested riparian buffer area. The restored, forested riparian buffer area shall include predominately

native hardwood tree species planted at a density sufficient to provide 320 trees per acres at maturity, and diffuse flow through the riparian buffer shall be maintained.

(r) 'Shoreline stabilization' is the in-place stabilization of an eroding shoreline. Stabilization techniques which include "soft" methods or natural materials (such as root wads or rock vanes) may be considered as part of a restoration design. However, stabilization techniques that consist primarily of "hard" engineering, such as concrete line channels, riprap or gabions, while providing bank stabilization, shall not be considered stream restoration.

(s) 'Stream' means a body of concentrated flowing water in a natural low area or natural channel on the land surface.

(t) 'Stream restoration' is defined as the process of converting an unstable, altered or degraded stream corridor, including adjacent riparian zone and flood-prone areas to its natural or referenced, stable conditions considering recent and future watershed conditions. This process also includes restoring the geomorphic dimension, pattern, and profile as well as biological and chemical integrity, including transport of water and sediment produced by the stream's watershed in order to achieve dynamic equilibrium. 'Referenced' or 'referenced reach' means a stable stream that is in dynamic equilibrium with its valley and contributing watershed. A reference reach can be used to develop natural channel design criteria for stream restoration projects.

(u) 'Stump diameter' means the diameter of a tree measured at six inches above the ground surface level.

(v) 'Surface waters' means any ephemeral, intermittent, or perennial stream, lake, pond, or reservoir. and including waters of the state as defined in G.S. 143-212 except underground waters"

(w) 'Temporary road' means a road constructed temporarily for equipment access to build or replace hydraulic conveyance structures or water dependent structures, or to maintain public traffic during construction.

(x) 'Tree,' for the purposes of this Part, means a woody plant with a DBH equal to or exceeding five inches or a stump diameter exceeding six inches.

(y) 'Water dependent structures' are those structures for which the use requires access or proximity to or siting within surface waters to fulfill its basic purpose, such as boat ramps, boat houses, docks and bulkheads.

Section 15-269.2 Required Buffers

(a) Subject to the remaining provisions of this part, the water quality buffer areas described in this section are hereby designated as described below. The width of these buffers shall be as prescribed in Section 15-269.3. Disturbance of the area within

, or outside causing hydrologic impacts upon, these buffers is restricted or prohibited as provided in Sections 15-269.4 and 15-269.5

(b) Buffers shall be established adjacent to all surface waters designated as such on either the most recent version of the soil survey map prepared by the Natural Resources Conservation Service of the United States Department of Agriculture, ii the most recent version of the 1:24,000 scale (7.5 minute) quadrangle topographic maps prepared by the United States Geologic Survey (USGS), or iii other more accurate mapping approved by the Geographic Information Coordinating Council (GICC) and the N.C. Environmental Management Commission (EMC). Prior to approving a map under item iii., the EMC shall provide a 30-day public notice and opportunity for public comment.

(1) If surface water is not designated as such on any of the foregoing maps, then the buffer requirements of this article applicable to perennial streams, intermittent streams, lakes, or ponds that are shown on such maps shall not apply, but buffers applicable to ephemeral streams may apply.

(2) Where the specific origination point of a stream is in question, a publication of the N.C. Division of Water Quality entitled *Identification Methods for the Origins of Intermittent and Perennial Streams* shall be used by town representatives who have successfully completed the Division's Surface Water Identification Training Certification course to establish that point.

(3) When a landowner or other affected party believes that surface waters shown on the above described maps have been innacurately depicted as perennial streams, intermittent stream, lakes or ponds, then such landowner or other affected party may have an on-site evaluation completed by a party who has successfully completed the NC Division of Water Quality *Surface Water Identification Training Certification* course, its successor, or other equivalent training curriculum approved by the Division, and submit the results of that evaluation to the town. Any disputes over onsite determinations made according to this Item shall be referred to the Director of the Division of Water Quality c/o the 401 Oversight Express Permitting Unit, or its successor, in writing. The Director's determination is subject to review as provided in Articles 3 and 4 of G.S. 150B.

(c) Buffers shall also be established adjacent to all ephemeral streams and ponds not shown on the above described maps that have a contributing drainage area that is at least five acres in size, as depicted in the Town's GIS database.

(1) When a landowner or other affected party believes that the designation of an area by the town as an ephemeral stream or pond with a contributing drainage area of at least five acres is in error, such landowner or other affected party may request that Town staff perform an onsite visit and/or submit to the Town data sufficient to make this case. Upon request, Town staff shall make a site visit and consider the information

submitted by the landowner or other affected party as well as other relevant information.

(2) The decision as to the existence of an ephemeral stream or pond with a contributing drainage area of at least five acres shall be made by the permit issuing authority when it makes a final decision on the issuance of the permit.

(d) The administrator may require that the precise location of any surface water be surveyed and accurately shown on development plans whenever necessary to ensure that a proposed development complies with the provisions of this article.

Section 15-269.3 Width of Buffers

(a) ZONES OF THE RIPARIAN BUFFER. The protected riparian buffer shall have two zones as follows:

(1) A streamside zone ("Zone 1') shall consist of an undisturbed area except as provided for in Section 15-269.5. The function of the streamside zone is to protect the physical and ecological integrity of the stream ecosystem, and filter runoff received from Zone 2. The desired vegetation for Zone 1 is mature forest. The location of Zone 1 shall be as follows:

a. Zone 1 shall begin at the most landward limit of the top of the bank. Zone 1 shall extend landward on either side of perennial and intermittent stream, and ephemeral streams with clearly defined streambanks, as indicated in Table 1, measured horizontally on a line perpendicular to a vertical line marking the origin of the buffer as defined above. For ephemeral streams without clearly defined streambanks, Zone 1 shall be measured from the centerline of the stream.

b. For ponds, lakes and reservoirs, Zone 1 shall begin at the most landward limit of the normal water level and extend landward as indicated in Table 1, measured horizontally on a line perpendicular to a vertical line marking the edge of the surface water.

(2) Zone 2 shall consist of an undisturbed area except as provided for in Section 15-269.5. The functions of this zone are to: protect the streamside zone, to filter runoff from upland development, and deliver runoff to Zone 1 in a dispersed fashion. Grading and revegetating Zone 2 is allowed provided that the health of the vegetation in Zone 1 is not compromised. Zone 2 shall begin at the outer edge of Zone 1 and extend landward as indicated in Table 1 as measured horizontally on a line

perpendicular to the surface water. The desired vegetation for this zone is mature native vegetation; forest cover is encouraged.

(3) The total buffer width shall be the sum of the widths of the two zones, as indicated in Table 1, and shall extend on all sides of the waterbody.

Table 1: Required Minimum Buffer Width (*)

Waterbody type	Zone 1 width		Zone 2 width		Total width	
	Watershed	Outside of Watershed	Watershed	Outside of Watershed	Watershed	Outside of Watershed
Perennial Streams, Ponds, Lakes, Reservoirs	100'	50'	--	50'	100'	100'
Intermittent Streams, Ponds	60'	30'	--	30'	60'	60'
Ephemeral Streams, Ponds	--	--	30'	15'	30'	15'

* "Watershed" means within the University Lake Watershed, and "Outside of watershed" means the remainder of the Town's planning jurisdiction. For streams, the width indicated is in one direction from the stream channel; the total width is therefore twice the width indicated.

(4) Notwithstanding the other provisions of this section, in no case shall the width of any buffer be less extensive than the special flood hazard area for the same stream, pond, or lake drainage feature designated in accordance with the provisions of Part I of this article.

Section 15- 269.4 Diffuse Flow Requirement

Concentrated runoff from new ditches or man-made conveyances shall be converted to diffuse flow at non-erosive velocities before the runoff enters the buffer, and maintained in the buffer by dispersing runoff that has concentrated into rills, gullies, and ditches, and reestablishing vegetation where concentrated flow has displaced vegetation Corrective action to restore diffuse flow shall be taken if necessary to impede the formation or expansion of erosion rills or gullies. Where site conditions constrain the ability to ensure diffuse flow through both Zones 1 and 2, emphasis will be placed on ensuring diffuse flow through Zone 1, as provided for in 15-269.3. No new engineered

stormwater devices or conveyances are allowed in the buffers except as provided for in Section 15-269.5. **Section 15-269.5 Exempt and Allowable Activities**

(a) The table set forth in subsection (d) below sets out the activities and their designation under this part as exempt, allowable, or allowable with mitigation, except as provided for in 15-269.2. All activities not designated as exempt, allowable, or allowable with mitigation are prohibited within the buffer unless a variance is granted pursuant to Section 15-269.8.

(b) Activities designated in the table below as exempt, allowable, and allowable with mitigation shall be subject to the following requirements. All activities shall be designed, constructed and maintained to minimize soil and vegetation disturbance and to provide the maximum water quality

protection practicable, including construction, monitoring, and maintenance activities. Activities designated in the table as allowable and allowable with mitigation require written authorization from the Town.

(1) Exempt. Activities designated as exempt are allowed within the buffer. In addition, exempt uses shall meet the requirements listed in the table and the accompanying notes for the specific use

(2) Allowable. Activities designated as allowable are permissible within the buffer provided that there are no practical alternatives to the requested use as determined in accordance with Section 15-269.6.

(3) Allowable With Mitigation. Activities designated as allowable with mitigation are permissible within the buffer provided that there are no practical alternatives to the requested use as determined in accordance with Section 15-269.6, and an appropriate mitigation strategy has been approved pursuant to Section 15-269.7.

(c) For public utilities as defined in this Article, the activities and their designation as set forth in the table in subsection (d) apply to expansions and extensions. The requirements do not apply to routine or emergency maintenance and repairs.

(d) Table of Exempt and Allowable Activities in Water Quality Buffers

Activity	Exempt	Allowable	Allowable with Mitigation
Drainage, Stormwater, Erosion Control, and other Water-based activities			
Dam maintenance activities: • Dam maintenance activities that do not cause additional buffer disturbance beyond the footprint of the existing dam or those covered under the U.S. Army Corps of Engineers Nationwide Permit No. 3 • Dam maintenance activities that do cause additional buffer disturbance beyond the footprint of the existing dam or those not covered under the U.S. Army Corps of Engineers Nationwide Permit No. 3	X	X	
Drainage ditches, roadside ditches and stormwater conveyances through buffers: • New stormwater flows to existing drainage ditches, roadside ditches, and stormwater conveyances provided that flows do not alter or result in the need to alter the conveyance and are managed to minimize the sediment, nutrients and other pollution that convey to surface watersRealignment of roadside drainage ditches retaining the design dimensions provided that no additional travel lanes are added and the minimum required roadway typical section is used based on traffic and safety considerations. • New or altered drainage ditches, roadside ditches and stormwater outfalls provided that a stormwater management facility is installed to control nutrients and attenuate flow before the conveyance discharges through the riparian buffer. • New drainage ditches, roadside ditches and stormwater conveyances applicable to linear projects that do not provide a stormwater management facility due to topographic constraints provided that other practicable BMPs have been employed.	X	X	X X

Activity	Exempt	Allowable	Allowable with Mitigation
Ponds created by impounding streams and not used as stormwater BMPs: • New ponds in Zone 2 only provided that a riparian buffer meeting the requirements of Section 15-269.3 and 15-269.4 is established adjacent to the pond • All other new ponds		X	X
Scientific studies and stream gauging	X		
Stormwater BMPs: • Constructed wetlands in Zone 1, if not closer than 30' to surface waters and diffuse flow is provided into the remainder of Zone 1. • Wet detention, bioretention, and constructed wetlands in Zone 2 if diffuse flow of discharge is provided into Zone 1		X X	
See Wetland, stream and buffer restoration			
Shoreline stabilization, including armoring of stream banks with rip rap or retaining walls			X

Activity	Exempt	Allowable	Allowable with Mitigation
Temporary sediment and erosion control devices provided that the disturbed area is restored to preconstruction topographic and hydrologic conditions and comparable vegetation is replanted immediately after construction is complete. Tree planting may occur during the dormant season; the restored buffer shall comply with Section 15-269.7(g) within five years: • In Zone 2, provided that the vegetation in Zone 1 is not compromised, that discharge is released as diffuse flow in accordance with Section 15-269.5 , and that ground cover is established within time frames required by the Sedimentation and Erosion Control Act In Zones 1 and 2 to control impacts associated with uses approved by the Town or that have received a variance provided that sediment and erosion control for upland areas is addressed, to the maximum extent practical, outside the buffer. • In-stream temporary erosion and sediment control measures for work within a stream channel that is authorized under Sections 401 and 404 of the Federal Water Pollution Control Act. • In-stream temporary erosion and sediment control measures for work within a stream channel.	X X	X X	
Water dependent structures where installation and use result in disturbance to ripariam buffers.		X	
Water wells • Single family residential water wells • All other water wells	X	X	

Activity	Exempt	Allowable	Allowable with Mitigation
Wetland, stream and buffer restoration that results in impacts to the riparian buffers: • Wetland, stream and buffer restoration that requires DWQ approval for the use of a 401 Water Quality Certification • Wetland, stream and buffer restoration that does not require DWQ approval for the use of a 401 Water Quality Certification	X	X	
Miscellaneous			
Archaeological activities	X		
Fences: • Fences provided that disturbance is minimized and installation does not result in removal of trees as defined in Section 15-316 • Fences provided that disturbance is minimized and installation results in removal of trees as defined in Section 15-316	X	X	
Grading and revegetation in Zone 2 only provided that diffuse flow and the health of existing vegetation in Zone 1 is not compromised and disturbed areas are stabilized until they are revegetated		X	
Maintenance access on modified natural streams: a grassed travel way on one side of the water body where less impacting alternatives are not practical. The width and specifications of the travel way shall be only that needed for equipment access and operation. The travel way shall be located to maximize stream shading.		X	

Activity	Exempt	Allowable	Allowable with Mitigation
Mining activities: • Mining activities that are covered by the Mining Act provided that new buffers that meet the requirements of this section are established adjacent to the relocated channels		X	
• Mining activities that are not covered by the Mining Act OR where new buffers that meet the requirements of this section are not established adjacent to the relocated channels			X
• Wastewater or mining dewatering wells with approved NPDES permit	X		
Preservation or maintenance of historic or cultural sites	X		
Protection of existing structures, facilities and stream banks when this requires additional disturbance of the riparian buffer or the stream channel		X	
Removal of previous fill or debris provided that diffuse flow is maintained, a stabilizing ground cover sufficient to restrain erosion is established, and any woody vegetation removed is restored		X	
Wildlife passage structures		X	
Recreation			
Access trails: Pedestrian access trails leading to the surface water, docks, fishing piers, boat ramps and other water dependent activities: • Pedestrian access trails that are restricted to the minimum width practicable and do not exceed 4 feet in width of buffer disturbance, and provided that installation and use does not result in removal of trees as defined in Section 15-316 and no impervious surface is added to the buffer	X		
• Pedestrian access trails that exceed 4 feet in width of buffer disturbance, the installation or use results in removal of trees as defined in this Section or impervious surface is added to the buffer		X	

Activity	Exempt	Allowable	Allowable with Mitigation
Canoe Access provided that installation and use does not result in removal of trees as defined in Section 15-316 and no impervious surface is added to the buffer.	X		
Greenway / hiking trails[1] designed, constructed and maintained to maximize nutrient removal and erosion protection, minimize adverse effects on aquatic life and habitat, and protect water quality to the maximum extent practical		X	
Playground equipment: • Playground equipment on single family lots provided that installation and use does not result in removal of vegetation • Playground equipment installed on lands other than single-family lots or that requires removal of vegetation	X	 X	
Transportation			
Bridges		X	
Driveway crossings of streams and other surface waters subject to this Section: • Individual driveway crossings that disturb equal to or less than 25 linear feet or 2,500 square feet of buffer • Individual driveway crossings that disturb greater than 25 linear feet or 2,500 square feet of buffer • Multiple driveway crossings in any development that cumulatively disturbs equal to or less than 150 linear feet or one-third of an acre of buffer • Multiple driveway crossings in any development that cumulatively disturbs greater than 150 linear feet or one-third of an acre of buffer • Driveway impacts other than crossing of a stream or other surface waters subject to this Section	X	 X X	 X X

[1] To the extent practicable, greenway easements shall be located a minimum of 10 feet from the top of bank; surfaces shall be a minimum of 15 feet from the top of bank

Activity	Exempt	Allowable	Allowable with Mitigation
Railroad impacts other than crossings of streams and other surface waters subject to this Part.			X
Railroad crossings of streams and other surface water drainage features subject to this Part: • Railroad crossings that impact equal to or less than 40 linear feet of riparian buffer • Railroad crossings that impact greater than 40 linear feet but equal to or less than 150 linear feet or one-third of an acre of riparian buffer • Railroad crossings that impact greater than 150 linear feet or one-third of an acre of riparian buffer	X	X	X
Road relocation: Relocation of existing private access roads associated with public road projects where necessary for public safety: • Less than or equal to 2,500 square feet of buffer impact • Greater than 2,500 square feet of buffer impact		X	X
Temporary roads, provided that restoration activities, including re-establishment of pre-construction topographic and hydrologic conditions and replanting with comparable vegetation occur immediately after construction. Tree planting may occur during the dormant season; the restored buffer shall comply with Section 15-269.7(g) within five years: • Less than or equal to 2,500 square feet of buffer disturbance • Greater than 2,500 square feet of buffer disturbance • Associated with culvert installation of bridge construction or replacement	X	X X	

Activity	Exempt	Allowable	Allowable with Mitigation
Transportation (vehicular, bike) crossings of streams and other surface waters subject to this Section: • Transportation crossings that impact equal to or less than 40 linear feet of riparian buffer • Transportation crossings that impact greater than 40 linear feet but equal to or less than 150 linear feet or one-third of an acre of riparian buffer • Transportation crossings that impact greater than 150 linear feet or one-third of an acre of riparian buffer	X	X	X
Transportation impacts other than crossings of streams and other surface waters subject to this Section			X
Vehicle access roads and boat ramps leading to the surface water, docks, fishing piers, and other water dependent activities, but not crossing the surface water and having a minimum practicable width of not more than 10 feet. •		X	
Utilities			
Electric utility, aerial, perpendicular crossings[2,3,4]: • Disturb equal to or less than 100 linear feet of buffer • Disturb greater than 100 linear feet of buffer	X	X	

[2] Provided that within 30 feet of surface waters, all of the following BMPs for overhead utility lines are used. If all of these BMPs are not used, then the overhead utility lines shall require a no practical alternative evaluation by the Administrator as defined in Section 15-269.6.

• A minimum zone of 10 feet wide immediately adjacent to the water body shall be managed such that only vegetation that poses a hazard or has the potential to grow tall enough to interfere with the line is removed.

• Woody vegetation shall be cleared by hand. No land grubbing or grading is allowed.

• Vegetative root systems shall be left intact to maintain the integrity of the soil. Stumps shall remain where trees are cut.

• Riprap shall not be used unless it is necessary to stabilize a tower.

• No fertilizer shall be used other than a one-time application to re-establish vegetation.

Activity	Exempt	Allowable	Allowable with Mitigation
Electric utility, aerial, other than perpendicular crossings[3]: • Impacts greater than 50 feet from surface waters • Impacts within 30-50 feet of surface waters • Impacts within 30 feet of surface waters [2,45]	X	X	X
Electric utility, underground, perpendicular crossings[3,4,6]: • Disturb less than or equal to 40 linear feet of buffer • Disturb greater than 40 linear feet of buffer	X	X	

• Construction activities shall minimize the removal of woody vegetation, the extent of the disturbed area, and the time in which areas remain in a disturbed state.
• Active measures shall be taken after construction and during routine maintenance to ensure diffuse flow of stormwater through the buffer.
• In wetlands, mats shall be utilized to minimize soil disturbance.

[3] Perpendicular crossings are those that intersect the surface water at an angle between 75 degrees and 105 degrees.

[4] Provided that poles or aerial infrastructure shall not be installed within 10 feet of a water body unless the Administrator completes a no practical alternative evaluation as defined in Section 15-269.6

[5] Provided that:

- No heavy equipment is used within 30 feet of surface waters.
- Vegetation in unddistrubed portions of the buffer is not compromised.
- Felled trees are removed by chain.
- No permanent felling of trees occurs in protected buffers or streams.
- Stumps are removed only by grinding.
- At the completion of the project the disturbed area is stabilized with native vegetation.
- The condition and use of the area within 50 feet of surface waters is consistent with Sections 15-269.3 and 15-269.4.

[6] Provided that, within 30 feet of surface water, all of the following BMPs for underground utility lines are used. If all of these BMPs are not used, then the underground utility line shall require a no practical alternative evaluation by the Administrator, as defined in Section 15-269.6.
• Woody vegetation shall be cleared by hand. No land grubbing or grading is allowed.
• Vegetative root systems shall be left intact to maintain the integrity of the soil. Stumps shall remain, except in the trench created for the line installation.
• Underground cables shall be installed by vibratory plow or trenching.
• The trench shall be backfilled with the excavated soil material immediately following cable installation.
• No fertilizer shall be used other than a one-time application to re-establish vegetation.
• Construction activities shall minimize the removal of woody vegetation, the extent of the disturbed area, and the time in which areas remain in a disturbed state.

- In wetlands, mats shall be utilized to minimize soil disturbance.

Activity	Exempt	Allowable	Allowable with Mitigation
Electric utility, underground, other than perpendicular crossings [3,6]: • Impacts greater than 50 feet from surface waters • Impacts within 30-50 feet of surface waters • Impacts within 30 feet of surface waters [5]	X	X	X
Non-electric utility, perpendicular crossings[3,5]: • Disturb equal to or less than 40 linear feet of buffer with a maintenance corridor equal to or less than10 feet in width • Disturb equal to or less than 40 linear feet of buffer with a maintenance corridor greater than 10 feet in width • Disturb greater than 40 linear feet but equal to or less than 150 linear feet of buffer with a maintenance corridor equal to or less than 10 feet in width • Disturb greater than 40 linear feet but equal to or less than 150 linear feet of buffer with a maintenance corridor greater than 10 feet in width • Disturb greater than 150 linear feet of buffer	X	X X	X X
Non-electric utility, other than perpendicular crossings [3,5]: • Impacts greater than 50 feet from surface waters • Impacts within 30-50 feet of surface waters • Impacts within 30 feet of surface waters	X	X	X
Vegetation Management			
Forest harvesting – See Section 15-319.1			
Fertilizer application: • One-time fertilizer application to establish vegetation	X		

Activity	Exempt	Allowable	Allowable with Mitigation
Vegetation management:			
• Emergency fire control measures provided that topography is restored	X		
• Mowing and harvesting of plant products in Zone 2 only	X		
• Planting vegetation to enhance the riparian buffer	X		
• Pruning forest vegetation provided that the health and function of the forest vegetation is not compromised	X		
• Removal of individual trees which are dead, diseased, or damaged, are in danger of causing damage to dwellings, other structures or human life, or are imminently endangering the stability of the streambank	X		
• Removal of poison ivy	X		
• Removal of invasive exotic vegetation as defined in Smith, Cherri L., 1998 *Exotic Plant Guidelines*. DENR, Division of Parks and Recreation. Raleigh, N.C. Guideline # 30, or a more recent version or alternative reference approved by the NC EMC.			

(e) Additional Setback Requirements for Specific Water Pollution Hazards

The following activities are designated as potential water pollution hazards, and must be set back from any stream or waterbody by the required buffer width provided in 15-269.3 or the distance indicated below, whichever is greater:

Activity	**Setback**
Above or below ground storage of hazardous substances, petroleum or biofuels	150 feet
Animal feedlot operations	250 feet
Land application of biosolids	100 feet
Solid waste landfills or junkyards	300 feet

(f) Because it is not the intent of this part to render undevelopable lots of record on the effective date of this part, intrusions into the protective buffer are permitted in the event that a lot of record would otherwise be made undevelopable by the provisions of this part, to the extent necessary for the lot in question to be developed as permitted by the underlying zoning designation and in such a manner as to minimize the disruption of the protective buffer.

(g) No new lot may be created through a major or minor subdivision process that would

be undevelopable under the provisions of this part because of the amount or dimensions of protective buffer land included in it, unless such lot has already been developed, or it plainly appears that such lot is intended to be devoted to permanent open space use.
(h) Areas set aside as protective stream buffers as required by this part may be counted towards required open space as set out in Sections 15-198, so long as they meet all the provisions of that section.
(i) Nothing in this part shall prevent a single family residence (including a mobile home) from being located within the required protective stream buffer areas if such home: 1) replaces a home that had been located within such buffer prior to the effective date of this part and is located on the same location as the previous home; or 2) is located on a mobile home pad or foundation that was in existence on the effective date of this part.
(j) Nothing in this part shall prevent the expansion of an existing single family detached residence (including an attached garage) into any buffer area that adjoins an ephemeral stream, if and to the extent that such area was not a regulated stream buffer under the provisions of this chapter in effect prior to the effective date of this section.

Section 15-269.6 Determination of "No Practical Alternatives"

(a) Persons who wish to undertake uses designated as allowable or allowable with mitigation under Section 15-269.5 or wish to meet a mitigation requirement provided under Section 15-269.7(g) shall submit a written request to the permit issuing authority for a "no practical alternatives" determination. The applicant shall certify that the criteria identified in subsection (b) are met and may submit any information deemed relevant to the permit issuing authority determination, in addition to the plans and other information submitted as part of the application for a permit under Article IV of this chapter. .

(b) The permit issuing authority shall make a "no practical alternatives" determination if, after reviewing the project plans and any other applicable information, it concludes that:

(1) The basic project purpose cannot be practically accomplished in a manner that would better minimize disturbance, preserve aquatic life and habitat, and protect water quality, and;

(2) Best management practices shall be used if necessary to minimize disturbance, preserve aquatic life and habitat, and protect water quality.

(c) Requests for a "no practical alternatives" determination shall be reviewed and either approved or denied. The permit issuing authority shall issue the decision in writing.

(d) If the "no practical alternatives" determination is issued in the context of a zoning permit, then the determination is to be made within 60 days of the submission of a completed application, unless:**(1)** The applicant agrees, in writing, to a longer period;

(2) The local government determines that the applicant has failed to furnish requested information necessary to the local government's decision;

(3) The applicant refuses access to its records or premises for the purpose of gathering information necessary to the local government's decision.

(e)Any appeals of determinations regarding determinations of "no practical alternatives" shall be referred to the Director of DWQ. The Director's decision is subject to review as provided in G.S. 150B Articles 3 and 4.

Section 15-269.7 Mitigation for Water Quality Buffers

(a) PURPOSE. The purpose of this section is to set forth the mitigation requirements for water quality buffer protection in relation to either a use shown in Section 15-269.5(d) as "allowable with mitigation" or a use for which a variance has been granted pursuant to Section 15-92(j).

(b) THE AREA OF MITIGATION. Staff shall determine the required area of mitigation, which shall apply to all mitigation options identified in this section, according to the following:

(1) The impacts in square feet to each zone of the buffer shall be determined by adding the area of the footprint of the activity causing the impact to the riparian buffer, including any clearing and grading within the buffer necessary to accommodate other activities, and the area of any ongoing maintenance corridors within the buffer associated with the activity.

(2) The required area of mitigation shall be determined by applying the following multipliers to the impacts determined in subsection (b)(1) to each zone of the riparian buffer:

a. Impacts to Zone one of the riparian buffer shall be multiplied by three;

b. Impacts to Zone two of the riparian buffer shall be multiplied by one and one-half.

(c) THE LOCATION OF MITIGATION. The mitigation effort shall be located within the Town's planning jurisdiction, and as close to the location of the impact as feasible.

(d) OPTIONS FOR MEETING THE MITIGATION DETERMINATION. The mitigation determination may be met through one of the following options:

(1) Payment of a compensatory mitigation fee to to the Riparian Buffer Restoration Fund (pursuant to 15NCAC 02B .0269, Jordan Water Supply Nutrient Strategy: Riparian Mitigation Fees to the NC Ecosystem Enhancement Program and contingent upon acceptance of payments by the NC Ecosystem Enhancement Program), to the Town's Water Quality Enhancement Fund, or to a private mitigation bank so long as the mitigation programs alternative to the Riparian Buffer Restoration Fund comply with the most current banking requirements of the US Army Corps of Engineers and the most current applicable trading criteria associated with water quality mitigation.

(2) Donation of real property or of an interest in real property pursuant to subsection (e) of this Section;

(3) Riparian buffer enhancement, or riparian buffer restoration. This shall be accomplished by the applicant after submittal and approval of a restoration plan pursuant to Item (f) of this Section.

(e) PAYMENT TO THE WATER QUALITY ENHANCEMENT FUND. Persons who choose to satisfy their mitigation determination by paying a compensatory mitigation fee to the Water Quality Enhancement Fund as allowed here shall use the following procedure:

(1) The Town shall establish annually, and include on the Miscellaneous Fees and Charges Schedule, a per square foot buffer mitigation fee. The fee shall be based upon a reasonable estimate of the per square foot cost of accomplishing riparian buffer restoration.

(2) The amount of the compensatory mitigation fee due shall be determined by multiplying the area in square feet of mitigation calculated in accordance with subsection (b) by the per square foot buffer mitigation fee.

(3) The required fee shall be submitted to the Town prior to construction plan approval.

(f) DONATION OF PROPERTY. Persons who choose to satisfy their mitigation determination by donating real property or an interest in real property to the Town shall meet the following requirements:

(1) The donation of real property interests may be used to either partially or fully satisfy the payment of a compensatory mitigation fee to the Riparian Buffer Restoration Fund, the Water Quality Enhancement Fund, or another alternative, private mitigation bank. The value of the property interest shall be determined by an appraisal performed in accordance with subsection (f)(4)d of this Section. The donation shall satisfy the mitigation determination if the appraised value of the donated property interest is equal to or greater than the required fee. If the appraised value of the donated property interest is less than the required fee, the applicant shall pay the remaining balance due.

(2) The donation of conservation easements to satisfy compensatory mitigation requirements shall be accepted only if the conservation easement is granted in perpetuity.

(3) Donation of real property interests to satisfy the mitigation determination shall be accepted only if such property meets all of the following requirements:

a. The property shall be located within an area that is identified as a priority for restoration in, or is otherwise consistent with the goals of the Basinwide Wetlands and Riparian Restoration Plan for the Cape Fear River Basin developed by the NC Division of Water Quality.

b. The property shall contain riparian buffers not currently protected by the State's riparian buffer protection program that are in need of restoration.

b. The restorable riparian buffer on the property shall have a minimum length of 1000 linear feet along a surface water and a minimum width of 50 feet as measured horizontally on a line perpendicular to the surface water.

c. The size of the restorable riparian buffer on the property to be donated shall equal or exceed the acreage of riparian buffer required to be

mitigated under the mitigation responsibility determined pursuant to Item (b) of this Section.

d. The property shall not require excessive measures for successful restoration, such as removal of structures or infrastructure. Restoration of the property shall be capable of fully offsetting the adverse impacts of the requested use.

e. The property shall be suitable to be successfully restored, based on existing hydrology, soils, and vegetation.

f. The estimated cost of restoring and maintaining the property shall not exceed the value of the property minus site identification and land acquisition costs.

g. The property shall not contain any building, structure, object, site, or district that is listed in the National Register of Historic Places established pursuant to Public Law 89-665, 16 U.S.C. 470 as amended.

h. The property shall not contain any hazardous substance or solid waste.

i. The property shall not contain structures or materials that present health or safety problems to the general public. If wells, septic, water or sewer connections exist, they shall be filled, remediated or closed at owner's expense in accordance with state and local health and safety regulations.

j. The property and adjacent properties shall not have prior, current, and known future land use that would inhibit the function of the restoration effort.

k. The property shall not have any encumbrances or conditions on the transfer of the property interests.

(4) At the expense of the applicant or donor, the following information shall be submitted to the Town with any proposal for donations or dedications of interest in real property:

a. Documentation that the property meets the requirements laid out in subsection (f)(3) of this Section;

b. USGS Survey 1:24,000 scale topographic map, county tax map, USDA Natural Resource Conservation Service County Soil Survey Map, and county road map showing the location of the property to be donated along with information on existing site conditions, vegetation types, presence of existing structures and easements;

c. A current property survey performed in accordance with the procedures of the North Carolina Department of Administration, State Property Office as identified by the State Board of Registration for Professional Engineers and Land Surveyors in "Standards of Practice for Land Surveying in North Carolina." Copies may be obtained from the North Carolina State Board of Registration for Professional Engineers and Land Surveyors, 3620 Six Forks Road, Suite 300, Raleigh, North Carolina 27609;

d. A current appraisal of the value of the property performed in accordance with the procedures of the North Carolina Department of Administration, State Property Office as identified by the Appraisal Board

in the "Uniform Standards of Professional North Carolina Appraisal Practice." Copies may be obtained from the Appraisal Foundation, Publications Department, P.O. Box 96734, Washington, D.C. 20090-6734; and

e. A title certificate from a licensed NC attorney.

(g) RIPARIAN BUFFER RESTORATION OR ENHANCEMENT. Persons who choose to meet their mitigation requirement through riparian buffer restoration or enhancement shall meet the following requirements:

(1) The applicant may restore or enhance a non-forested riparian buffer if either of the following applies:

a. The area of riparian buffer restoration is equal to the required area of mitigation determined pursuant to subsection (b) of this Section; or

b. The area of riparian buffer enhancement is three times larger than the required area of mitigation determined pursuant to subsection (b) of this Section.

(2) The location of the riparian buffer restoration or enhancement shall comply with the requirements in subsection (d) of this Section.

(3) The width of the riparian buffer restoration or enhancement site shall comply with Section 15-269.3 as measured horizontally on a line perpendicular to the surface water.

(4) The applicant shall submit a restoration or enhancement plan for approval. The restoration or enhancement plan shall contain the following:

a. A map of the proposed restoration or enhancement site;

b. A vegetation plan. The vegetation plan shall include a minimum of at least two native hardwood tree species planted at a density sufficient to provide 320 trees per acre at maturity;

c. A grading plan. The site shall be graded in a manner to ensure diffuse flow through the riparian buffer;

d. A fertilization plan; and

e. A schedule for implementation.

(5) Within one year after the permit issuing authority has approved the restoration or enhancement plan, the applicant shall present proof that the riparian buffer has been restored or enhanced. If proof is not presented within this timeframe, then the person shall be in violation of the riparian buffer protection program.

(6) The mitigation area shall be placed under a perpetual conservation easement that will provide for protection of the property's nutrient removal and other water quality enhancement functions.

(7) The applicant shall submit annual reports for a period of five years after the restoration or enhancement showing that the trees planted have survived and that diffuse flow through the riparian buffer has been maintained. The applicant shall replace trees that do not survive and restore diffuse flow if needed during that five-year period.

(h) The Town may determine that the option described in 15-269.7(e) does not apply to a public utility as defined in this Article if the mitigation options specified above in 15-269.7(f) and (g) are found to not be feasible.

Section 269.8 Permits and Enforcement of Buffer Requirements.

Like the other requirements of this chapter, the provisions of Part III of Article XVI (water quality buffers) shall ordinarily be enforced by requiring compliance as development permits (i.e., zoning, special use, or conditional use permits) are issued. Accordingly, a determination as to whether a proposed disturbance of a buffer is exempt, allowable, or allowable with mitigation will ordinarily be made in the context of the review process for such a development permit. To the extent that the activities identified in the Table of Exempt and Allowable Activities (set forth in Subsection 15-269.5(d) above) are proposed to be conducted or undertaken under circumstances where no such development permit is likely to be required (e.g., archeological activities or the installation of playground equipment), such activities may not be conducted or undertaken until a buffer disturbance permit has been issued by the zoning administrator. Such permit shall be issued if the administrator concludes, based upon the information submitted with the application for such permit, that the proposed disturbance will be consistent with the requirements of this article.

Section 3. Subsection 15-92 (j) is rewritten to read as follows:

(j) If the board votes to grant a major variance from any of the provisions of Part III (Water Quality Buffers) of Article XVI, the administrator shall forthwith prepare and send to the Environmental Management Commission a record of the proceedings before the board. The variance shall not be issued until it is approved by the EMC. For purposes of this subsection, a major variance is one that pertains to prohibited activities that will impact that portion of Zone One of the riparian buffers that lies within 30 feet of the surface waters subject to buffer requirements of the Jordan Reservoir.

Section 4. This ordinance shall become effective when it has been both approved by the North Carolina Environmental Management Commission and adopted by the Carrboro Board of Aldermen.