

CITY ZONE CHANGE

Petition No. 2000-53
Central Piedmont Community College

ORDINANCE NO. 1542-Z

ZONING REGULATIONS

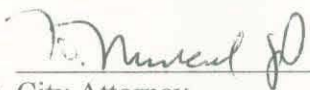
BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF CHARLOTTE:

Section 1. That Section 1.104 of the City of Charlotte Zoning Ordinance is hereby amended by changing the property identified as approximately 14 acres located on the east side of East W.T. Harris Boulevard, south of Grier Road and north of Plaza Road Extension (tax parcel 105-091-06) from R-20MF to R-3 on the Official Zoning Map, City of Charlotte, N.C.

SEE ATTACHED MAP


Section 2. That this ordinance shall become effective upon its adoption.

APPROVED AS TO FORM:

Sr. Dep 
City Attorney

I, Brenda R. Freeze City Clerk of the City of Charlotte, North Carolina, DO HEREBY CERTIFY that the foregoing is a true and exact copy of an Ordinance adopted by the City Council of the City of Charlotte, North Carolina, in regular session convened on the 18th day of May, 2000, the reference having been made in Minute Book 114, and recorded in full in Ordinance Book 50, Page(s) 318-319.

WITNESS my hand and the corporate seal of the City of Charlotte, North Carolina, this the 24th day of August, 2000.


Brenda R. Freeze, CMC, City Clerk

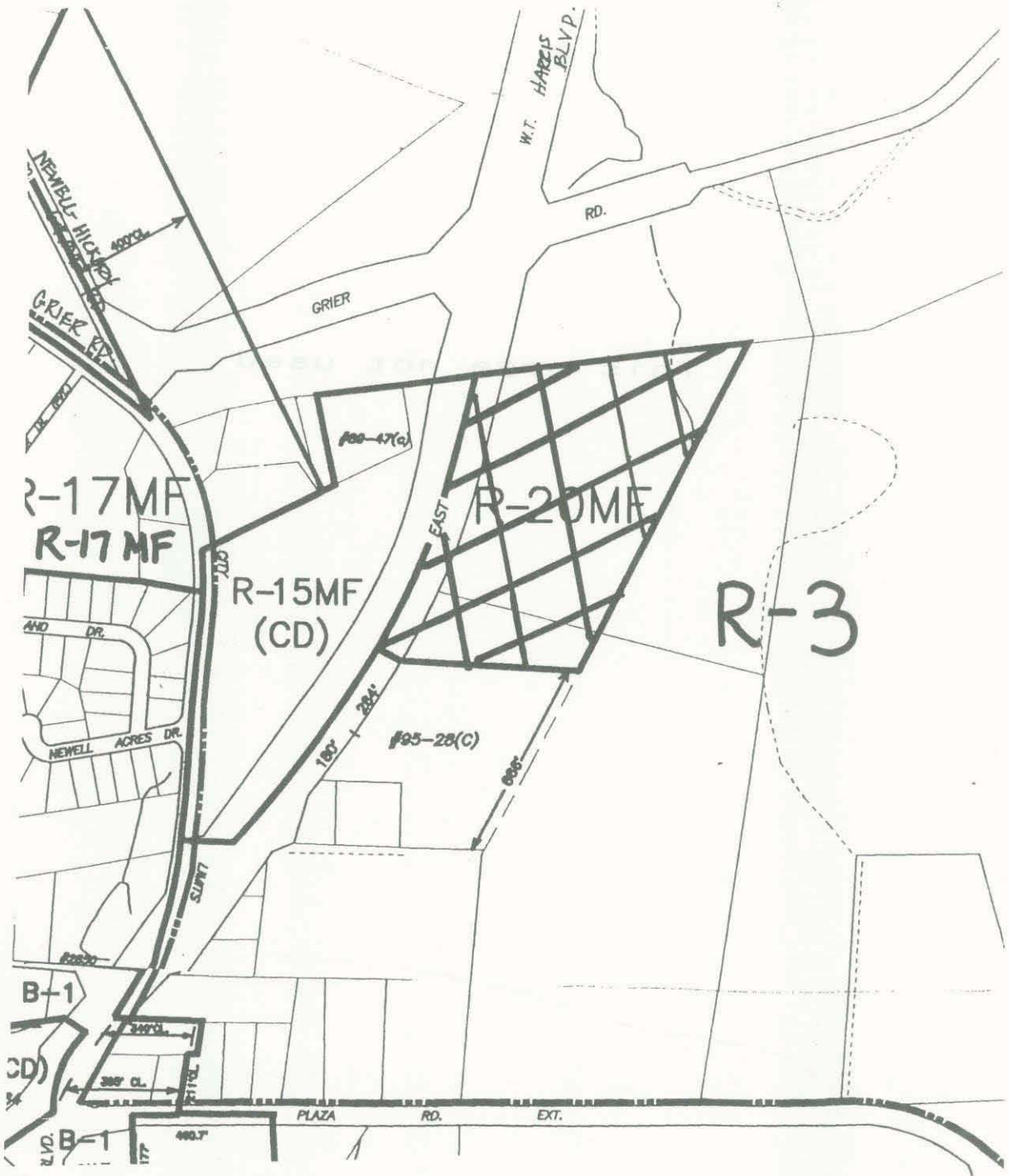
Petitioner: Central Piedmont Community College

Hearing Date: April 17, 2000

Classification (Existing): R-20MF

Zoning Classification (Requested): R-3

Location: Approximately 14 acres located on the east side of East W. T. Harris Boulevard, south of Grier Road and north of Plaza Road Extension.



Zoning Map #(s): 76

Scale: No Scale

12/01/1999
Revised: 12/13/1999

Petition No. 2000-62
Petitioner: Charlotte-Mecklenburg Planning Commission

**ORDINANCE NO. 1543 AN ORDINANCE AMENDING APPENDIX A
OF THE CITY CODE - ZONING ORDINANCE**

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF CHARLOTTE:

Section 1. Appendix A, "Zoning" of the Code of the City of Charlotte is hereby amended as follows:

1. Amend CHAPTER 12: DEVELOPMENT STANDARDS OF GENERAL APPLICABILITY, PART 1: SUPPLEMENTAL DEVELOPMENT STANDARDS, Section 12.108 "Height Limitations", (8), as follows:
 - a. Add the following sentence to (8) after the first existing sentence:

All wireless communications transmission facilities located in a residential district (residential districts: R-3, R-4, R-5, R-6, R-8, MX-1, MX-2, MX-3, R-MH, R-8MF, R-12MF, R-17MF, R-22MF, R-43MF, UR-1, UR-2, UR-3, and all of their parallel conditional districts plus any parallel conditional residential districts approved prior to January 1, 1992) or within 400 feet of a residential zoning district shall conform to the concealment standards specified in Section 12.108.(8)(j).
 - b. Add the following sentence to the end of (8)(c):

Any such facility as well as the associated antennae located in a residential district or within 400 feet of a residential district must be indiscernible from the rest of the building or structure.
 - c. Add the following language to the end of the last sentence (8)(i):

and are not required to conform to the concealment measures of Section 12.108(8)(j).

The entire revised sentence will read thusly:

Such facilities do not trigger the notification provisions or the separation or yard requirements, and are not required to conform to the concealment measures of Section 12.108(8)(j).

- d. Insert a new section (8)(j) as follows and re-designate the existing (j), (h) and (l) as (k), (l) and (m) accordingly.

(j) All new wireless communication transmission facilities located in or within 400 feet of a residential zoning district are subject to the following additional standards:

1. The tower must be designed, constructed or integrated into or as a structure in such a manner that it no longer appears to be a wireless communication tower, for example, locate in other towers on buildings, in steeples or be disguised as trees.
2. The tower must have indiscernible antennae.
3. Concealment measures used on any given facility (tower, antennae, and building structures at base) must blend into the character of the area or neighborhood by using architectural treatment similar in design to existing structures.
4. The use of a flagpole as the concealment measure shall only be applicable on a site used for institutional or non-residential uses.

Any wireless communication transmission facility lawfully operating as a conforming use shall not be rendered a non-conforming use by the subsequent rezoning to a residential district within 400 feet of such facility. This subsection (j) shall not apply to Section 12.108 (8) (d) and (e).

Section 2. That this ordinance shall become effective upon its adoption.

Approved as to form:

H. M... J.
Sr. Dep. City Attorney

I, Brenda R. Freeze City Clerk of the City of Charlotte, North Carolina, DO
HEREBY CERTIFY that the foregoing is a true and exact copy of an Ordinance adopted by the City
Council of the City of Charlotte, North Carolina, in regular session convened on the 18th day of
May, 2000, the reference having been made in Minute Book 114, and recorded in full in
Ordinance Book 50, Page(s) 321-323.

WITNESS my hand and the corporate seal of the City of Charlotte, North Carolina, this the
24th day of August, 2000.

Brenda R. Freeze, CMC

Brenda R. Freeze, CMC, City Clerk

Petition No. 2000-63SUB
Petitioner: Mecklenburg County
Department of Environmental Protection

AMENDING CHAPTER 20

ORDINANCE NO. 1544

AN ORDINANCE AMENDING CHAPTER 20, (SUBDIVISION REGULATIONS) OF THE CODE OF THE CITY OF CHARLOTTE:

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF CHARLOTTE, NORTH CAROLINA:

Section 1. Chapter 20, is hereby amended as follows:

Section 7.200. Design Standards for Lots

11. Lots Within Catawba River/Lake Wylie Watershed Protection Area, BUFFER AREA REQUIREMENTS, is amended by crossing through wording to be deleted and underlining additions in the text as follows:

No permanent structures, built upon areas, septic tanks systems or any other disturbance of existing vegetation shall be allowed within the buffer except as follows:

- a. No trees larger than 2 caliper are to be removed except for dead or diseased trees. Trees less than 2 inch caliper and undergrowth may be removed to replaced by an effective stabilization and filtering ground cover based upon the Watershed Buffer Guidelines for Mecklenburg County contained in Appendix B and as approved by the County Environmental Protection Department.
- b. Streambank or shoreline stabilization is allowed as approved on a plan submitted to the applicable Engineering Department and the County Environmental Protection Department.
- c. Water dependent structures and public projects such as road crossings

and greenway paths are allowed where no practical alternative exists. These activities should minimize built-upon surface area, direct run off away from surface waters, and maximize the utilization of nonstructural BMP's and pervious materials.

d. During new development or the expansion of existing development the County can require enhancement of the existing vegetation in the buffer if necessary so that the buffer can effectively perform its filtering and absorption functions based on the Watershed Buffer Guidelines for Mecklenburg County contained in Appendix B.

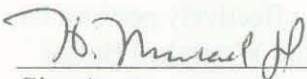
e. In the protected areas, non-impervious recreational development and non-impervious pedestrian trails may be allowed in the required buffer if located a minimum of 30' from the stream bank.

f. Mitigation of disturbed buffers required.

Should existing vegetation within the buffer be disturbed (except as allowed by this Ordinance) or should vegetation which was added to a buffer pursuant to the requirement that existing vegetation in the buffer be disturbed (except as allowed by this Ordinance), the Zoning Administrator shall require that any vegetation remaining in the buffer be enhanced in accordance with the Watershed Buffer Guidelines for Mecklenburg County contained in Appendix B so that the buffer can effectively perform its filtering and absorption functions.


Section 2. This ordinance shall become effective upon adoption.

Approved as to form:

Sr. Dep. 
City Attorney

I, Brenda R. Freeze City Clerk of the City of Charlotte, North Carolina, DO
HEREBY CERTIFY that the foregoing is a true and exact copy of an Ordinance adopted by the
City Council of the City of Charlotte, North Carolina, in regular session convened on the 18th day
of May, 2000, the reference having been made in Minute Book 114, and recorded in full in
Ordinance Book 50, Page(s) 324-325A.

WITNESS my hand and the corporate seal of the City of Charlotte, North Carolina, this the
24th day of August, 2000.


Brenda R. Freeze, CMC, City Clerk

Petition #: 2000-64

Petitioner: Mecklenburg County Department of Environmental Protection

AN ORDINANCE AMENDING APPENDIX A
OF THE CITY CODE - ZONING ORDINANCE

ORDINANCE NO. 1545

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF CHARLOTTE:

Section 1. Appendix A, "Zoning" of the Code of the City of Charlotte is hereby amended as follows:

1. Amend CHAPTER 10: OVERLAY DISTRICTS, PART 6: as follows:

(a) By deleting existing PART 6 and replacing it with new Part 6 as follows:

PART 6: CATAWBA RIVER/LAKE WYLIE WATERSHED OVERLAY

Section 10.601. Purpose.

The purpose of the Catawba River/Lake Wylie Watershed Overlay District is to provide for the protection of public water supplies as required by the N.C. Water Supply Watershed Classification and Protection Act (G.S. 143-214.5) and regulations promulgated thereunder. The Catawba River/Lake Wylie Watershed Overlay may be an overlay in any district established in Chapters 9 and 11. The Catawba River/Lake Wylie Watershed Overlay District supplements the uses or development requirements of the underlying zoning district within the Catawba River/Lake Wylie Watershed Protection Area to ensure protection of public water supplies. All other uses and regulations for the underlying district shall continue to remain in effect for properties classified under the Catawba River/Lake Wylie Watershed Overlay District.

The Catawba River/Lake Wylie Watershed Protection Area is that area within Mecklenburg County which contributes surface drainage into that portion of the Catawba River known as Lake Wylie and its tributaries. The Catawba River/Lake Wylie Watershed Protection subareas are specifically defined on the City of Charlotte Zoning Maps.

Section 10.602. General Definitions.

For the purposes of Chapter 10 Part 6, the following words and phrases shall be defined as specified below.

Agricultural Use. The use of waters for stock watering, irrigation, and other farm purposes.

Best Management Practices (BMP's). A structural or nonstructural management-based practice used singularly or in combination to reduce non-point source input to receiving waters in order to achieve water quality protection goals.

Non-structural BMP's. Non-engineered methods to control the amount of non-point source pollution. These may include land-use controls and vegetated buffers.

Structural BMP's. Engineered structures that are designed to reduce the delivery of pollutants from their source or to divert contaminants away from the water supply. Structural BMP's allowed for use under the High Density Option are those which have been approved by the North Carolina Division of Water Quality and City of Charlotte. These include wet detention ponds, extended dry detention ponds, and grass swales.

Buffer. A natural or vegetated area through which stormwater runoff flows in a diffuse manner so that the runoff does not become channelized and which provides for infiltration of the runoff and filtering of pollutants. The buffer is measured landward from the normal pool elevation of impounded structures and from the top of the bank of each side of streams or rivers.

Built-upon area (B.U.). Built-upon areas shall include that portion of a development project and/or lots that are covered by impervious or partially impervious cover including buildings, pavement, gravel roads, recreation facilities (e.g. tennis courts), etc. (Note: wooden slatted decks and the water area of a swimming pool are considered pervious.)

Critical Area. The area adjacent to a water supply intake or reservoir where risk associated with pollution is greater than from the remaining portions of the watershed.

Discharge. The addition of any man induced waste effluent either directly or indirectly to N.C. surface waters.

Existing Development. Existing development, as defined for the purposes of this Part, means projects for which a certificate of compliance has been issued, projects for which a building permit has been issued, property which has been subdivided by a recorded instrument, or projects which have obtained vested rights under Section 1.110 as of the date of adoption of the amendment incorporating this subpart into this Ordinance.

Existing Lot (Lot of Record). A lot which is part of a subdivision, a plat of which has been recorded in the Office of the Register of Deeds prior to the adoption of this ordinance, or a lot described by metes and bounds, the description of which has been so recorded prior to the adoption of this ordinance.

Hazardous Material. Any substance listed as such in: SARA section 302, Extremely Hazardous Substances, CERCLA Hazardous Substances, or Section 311 of CWA (oil and hazardous substances).

Industrial Discharge. The discharge of industrial process treated wastewater or wastewater other than sewage and includes:

- (1) wastewater resulting from any process of industry or manufacture, or from the development of any natural resource;
- (2) wastewater resulting from processes of trade or business, including wastewater from laundromats and car washes, but not wastewater from restaurants;
- (3) stormwater will not be considered to be an industrial wastewater unless it is contaminated with

- (4) wastewater discharged from a municipal wastewater treatment plant requiring a pretreatment program.

Nonresidential Development. All development other than residential development, agriculture and silviculture.

Normal Pool Elevation. The Catawba River, Lake Wylie normal pool elevation as determined by United States Geological Survey (U.S.G.S.) Datum.

Perennial Stream. A stream or creek containing a continuous natural flow of water throughout the year except possibly under exceptionally dry conditions. Such streams are identified on United States Geological Survey Quadrangle Maps.

Protected Area. The area adjoining and upstream of the Critical Area of water supply watersheds where risk of water quality degradation from pollution while still greater than non watershed designated areas, is less than in the Critical Area.

Septic Tank System. A ground absorption sewage disposal system consisting of a holding or settling tank and a ground absorption field.

State Standard. A quality standard for an applicable WS classification as established by the North Carolina Environmental Management Commission.

Subdivider. Any person, firm or corporation who subdivides or develops any land deemed to be a subdivision as herein defined.

Subdivision. A subdivision will include all divisions of a tract or parcel of land into two or more lots, building sites, or other divisions for the purpose, whether immediate or future, of sale, or building development of any type, including both residential and nonresidential multiple building site and multi-site projects even if there is no division of the underlying land into separate parcels which is to be recorded with the Register of Deeds and also includes all divisions of land involving the dedication of a new street or a new street right-of-way or a change in existing streets; provided, however, that the following will not be included within this definition nor be subject to the requirements of this ordinance:

1. The combination or recombination of portions of parcels created and recorded prior to January 1, 1988, or portions of lots platted in compliance with this ordinance after January 1, 1988, where the total number of parcels or lots is not increased and the resultant parcels are equal to the standards of this ordinance.
2. The division of land into parcels greater than 5 acres where no street right-of-way dedication is involved.
3. The creation of strips of land for the widening or opening of streets or the location of public utility rights-of-way.
4. The division of a tract in single ownership whose entire area is no greater than two acres into not

more than three lots, where no street right-of-way dedication is involved and where the resultant lots are equal to or exceed the standards of the appropriate zoning classification.

5. The division of land plots or lots for use as a cemetery.
6. Creation of a separate lot or building site by a less than fee simple instrument, such as a ground lease, when the property interest created is divided from the original parcel for ten years or less, including options to renew.
7. The lease of space or other area within a building owned by the landlord.
8. Easements for the purposes of utilities, driveways, parking, footpaths, trails or other similar purposes.
9. The division of a tract or parcel into separate tracts or parcels, or the creation of interests in lots or parcels, by means of (a) a deed of trust, mortgage, or similar security interest solely for the purpose of securing any bona fide obligation (including transfers of such parcels or tracts pursuant to foreclosure or deeds in lieu of foreclosure) and (b) releases from the liens and operation of such deeds of trust, mortgages, or similar security interests.
10. Proceedings to partition interests in lots or parcels pursuant to Chapter 46 of the North Carolina General Statutes (or any successor statute) resulting in the division of a lot or parcel into two or more lots or parcels except where the partition proceeding is brought to circumvent the provisions of this Ordinance.
11. Transfers of tracts or parcels by inheritance or bona fide gift.
12. Condemnation or deed in lieu of condemnation, by either a public or private condemnor; provided, however, that the condemnor must comply with the requirements of this ordinance as to the property acquired, either prior to the commencement of any development of the property acquired, or prior to the issuance of any building permit on the property acquired, or within six months following the date of acquisition, whichever date first occurs.

Variance, Local Watershed. A variance from the requirements of this part which would not result in the relaxation of any State Standard.

Variance, Major Watershed. A variance from the requirements of this part that would result in the relaxation of a State Standard and any one or more of the following:

- (1) The relaxation, by a factor greater than ten (10%) percent, of any management requirement under the low density option.
- (2) The relaxation, by a factor greater than five (5%) percent, of any buffer, density, or built-upon area requirement under the high density option.
- (3) Any variation in the design, maintenance, or operation requirements of a wet detention pond or other approved stormwater management system.

Variance, Minor Watershed. A variance from the minimum statewide watershed protection rules that results in a relaxation, by a factor of up to and including five (5) percent, of any buffer, density, or

built-upon area requirement under the high density option; or that results in a relaxation, by a factor of up to and including ten (10) percent, of any management requirement under the low density option.

Water Dependent Structures. 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, piers, bulkheads and similar structures. Ancillary facilities such as restaurants, outlet for boat supplies, parking lots, and commercial boat storage areas are not water dependent structures.

Watershed. The entire land area contributing surface drainage into a stream, creek, lake or other body of water.

Section 10.603. Exceptions to Applicability.

1. Existing Development, as defined in this part is not subject to the requirements of this part. Expansion to structures classified as existing development must meet the requirements of this part, however, the built upon area of the existing development is not required to be included in the calculations.
2. An existing lot, as defined in this Part, owned prior to the effective date of this ordinance, regardless of whether or not a vested right has been established, may be developed for single family residential purposes subject only to the buffer requirements of Section 10.608 of this part; however, this exemption is not applicable to multiple contiguous lots under single ownership.
3. Existing public utilities may expand without being subject to the restrictions of this part provided that:
 - a. Such expansion complies with all applicable laws and regulations of the State of North Carolina and the United States of America, including the minimum statewide water supply watershed management requirements adopted by the Environmental Management Commission ("EMC"); and
 - b. Discharges associated with the existing public utilities may be expanded, however the pollutant load shall not be increased beyond presently permitted levels.

Section 10.604. Catawba River/Lake Wylie Watershed Overlay District Subareas established.

1. Critical Area. The Critical Area extends one-half mile (1/2) inland from the normal pool elevation of Lake Wylie from Mountain Island Dam to the upstream side of the Paw Creek Arm ("Paw Creek Cove"), as shown more specifically on the City of Charlotte Zoning Maps.
2. Protected Area. The Protected Area extends from the outer boundaries of the Critical Area to approximately five (5) miles from the Lake upstream in the Long Creek drainage basin as shown more specifically on the City of Charlotte Zoning Maps.

Section 10.605. Uses and Standards established.

1. Critical Area

The intent is to require higher standards in the Critical Area because of the greater risk of water quality degradation from pollution. The following uses and standards apply to the Critical Area and shall be permitted if they meet the standards of this Part and all other requirements of this ordinance.

(A) Uses Permitted By Right

All those permitted in the underlying zoning district except as provided in Section 10.605.1(D)

(B) Uses Permitted Under Prescribed Conditions

Those listed below and all those permitted in the underlying zoning district except as provided in Section 10.605.1(D)

1. Storage of Hazardous Materials, subject to the filing of a spill/failure containment plan with the City of Charlotte Fire Marshall.
2. Structural BMP's, where allowed under the High Density Option subject to the regulations of Section 10.609.

(C) Permitted Accessory Uses and Structures

All those permitted in the underlying zoning district, except as provided in Section 10.605.1(D).

(D) Prohibited Uses

1. Landfills, sanitary
2. Petroleum Contaminated Soils, Treatment or Disposal
3. Sludge Applications
4. Wastewater Treatment Plants, new privately owned or operated for domestic waste requiring NPDES permit.

2. Protected Area

The intent is to allow development with fewer restrictions in the protected area than in a critical area because the risk of water quality degradation from pollution is less in the protected area than in a critical area. These uses and standards shall apply to the protected area and shall be permitted if they meet the standards of this Part and all other requirements of this ordinance.

(A) Uses Permitted By Right

All those permitted in the underlying zoning district except as provided in Section 10.605.2(D).

(B) Uses Permitted under Prescribed Conditions

Those listed below and all those permitted in the underlying zoning district except as provided in Section 10.605.2(D).

1. Storage of Hazardous Materials, subject to the filing of a spill/failure containment plan with the City of Charlotte Fire Marshall.

2. Structural BMP's, where allowed under the High Density Option, subject to regulations of Section 10.609

(C) Permitted Accessory Uses and Structures

All those permitted in the underlying zoning district except as provided in Section 10.605.2(D).

(D) Prohibited Uses

1. Wastewater Treatment Plants, new privately owned or operated for domestic waste requiring NPDES permit.

Section 10.606. Development Standards for the Catawba River/Lake Wylie Watershed Overlay.

All uses permitted in the Catawba River/Lake Wylie Watershed Overlay shall meet the applicable development standards established in this section and all other requirements of these regulations.

1. Critical Area

A. Area, yard, and bulk regulations shall be as follows:

1. Maximum Residential Density (D.U./AC.)

Maximum allowed in underlying district

2. Minimum lot area

Minimum required in underlying district

3. Maximum Allowable Built Upon Area (% B.U.)

a. Residential

1. low density option - 24%
2. high density option (1) - 50%

b. Non-Residential

1. low density option - 24%
2. high density option (1) - 50%

2. Protected Area

A. Area, yard, and bulk regulations shall be as follows:

1. Maximum Residential Density (D.U./AC)

Maximum allowed in underlying district

2. Minimum lot area

Minimum required in underlying district

3. Maximum Allowable Built Upon Area (% B.U.)

a. Residential

- 1. low density option - 24%
- 2. high density option (1) - 70%

b. Nonresidential

- 1. low density option - 24%
- 2. high density option (1) - 70%

Footnote to Chart 10.606.1(A3) and 10.606.2(A3)

- (1) High Density Option - See Section 10.609

Section 10.607. Cluster Development.

Cluster Development, as defined in Section 2.201(C6) is permitted in the Critical and Protected Areas in accordance with the following regulations.

- 1. Subject to all the cluster requirements of the underlying zoning district.
- 2. % B.U. shall not exceed the allowed % B.U. for the watershed area. [Section 10.606.1(A3) and Section 10.606.2(A3)]
- 3. The remainder of the tract shall remain in a vegetated or natural state as common open space except that non-impervious recreational uses are permitted provided that they are located a minimum of 30 feet from the stream bank. Impervious recreational uses are permitted if they are located outside of any required buffer and do not exceed the allowable percentage built upon for the project.
- 4. Subject to the buffer area requirements of Section 10.608.

Section 10.608. Buffer areas required.

Vegetative buffers are required along the shoreline of the Catawba River/Lake Wylie measured from the normal pool elevation and along each side of all perennial streams measured from the top of bank.

1. Critical Area

In the critical area the minimum buffer areas are as follows:

- a. low density option - 100'
- b. high density option - 100'

2. Protected Area

In the protected area the minimum buffer areas are as follows:

- a. low density option - 40'
- b. high density option - 100'

3. Additional buffer requirements:

No permanent structures, built upon areas, septic tanks systems or any other disturbance of existing vegetation shall be allowed within the buffer except as follows:

- a. No trees larger than 2 inch caliper are to be removed except for dead or diseased trees. Trees less than 2 inch caliper and undergrowth may be removed to be replaced by an effective stabilization and filtering ground cover based upon Mecklenburg County Environmental Protection Department guidelines and as approved by the County Environmental Protection Department.
- b. Streambank or shoreline stabilization is allowed as approved on a plan submitted to the applicable Engineering Department and the County Environmental Protection Department.
- c. Water dependent structures and public projects such as road crossings, sewer lines and greenway paths are allowed where no practical alternative exists. These activities should minimize built-upon surface area, direct run off away from surface waters, and maximize the utilization of nonstructural BMP's and pervious materials.
- d. During new development or the expansion of existing development the City can require enhancement of the existing vegetation in the buffer if necessary so that the buffer can effectively perform its filtering and absorption functions based on Mecklenburg County Environmental Protection Department guidelines.
- e. Non-impervious recreational development and non-impervious pedestrian trails may be allowed in the required buffer if located a minimum of 30 feet from the stream bank.

4. Diffuse flow requirement

Diffuse flow of runoff shall be maintained in the buffer by dispersing concentrated flow and reestablishing vegetation. Techniques for providing diffuse flow are specified in the Charlotte-Mecklenburg Land Development Standards Manual.

- (a) Concentrated runoff from ditches or other manmade conveyances shall be converted to diffuse flow before the runoff enters the buffer.
- (b) Periodic corrective action to restore diffuse flow shall be taken by the property owner as necessary to prevent the formation of erosion gullies.

5. Ponds

Ponds which intersect the stream channel shall have the same buffers as the original stream measured from the top of the bank of the pond. Buffer requirements shall not apply to wet ponds used as structural BMPs.

6. Buffer delineation

The following buffer delineations are required:

- a. Streams and buffer boundaries including all buffer zones must be clearly delineated on all construction plans, including grading and clearing plans, erosion, drainage and sediment control plans and site plans.
- b. Outside buffer boundaries must be clearly marked on-site prior to any land disturbing activities.
- c. The outside boundary of the buffer must be permanently marked at highway stream crossings.
- d. Streams and buffer boundaries including the delineation of each buffer zone must be specified on all surveys and record plats.

Section 10.609. High Density Option.

The High Density Option allows for a greater development density provided engineered controls (Structural BMP's) are used to manage stormwater runoff. Structural BMP's are required under the High Density Option. High density development shall meet the requirements of this section, the Land Development Standards Manual and other published standards of the City Engineering Department.

1. High Density Permit Application.

A. A High Density Development Permit shall be required for new development exceeding the requirements of the low density option.

B. Application for a High Density Development Permit shall be submitted as follows:

1. Development plans subject to the Subdivision Ordinance and the Sediment and Erosion Control Ordinance and reviewed through the Charlotte-Mecklenburg Planning Commission will submit the High Density Development Permit to the Subdivision Administrator as part of the subdivision review application process.

2. Development plans not subject to the Subdivision Ordinance will submit the High Density Development Permit to the City Engineer as part of the Sediment and Erosion Control requirements of the building permit application process.

3. Applications for the High Density Option shall be made on the proper form and shall include the following information:

a. A completed High Density Development Permit Application signed by the owner of the property. The signature of the consulting engineer or other agent will be accepted on the application only if accompanied by a letter of authorization.

b. Required number of development plans and specifications of the stormwater control structure.

c. Submittal of a sediment and erosion control plan to the appropriate agency.

d. Permit application fees.

2. Structural BMP's

- A. All Structural BMP's shall be designed and stamped by either a North Carolina registered professional engineer or landscape architect.
- B. Structural BMP's shall be designed for specific pollutant removal according to modeling techniques approved by the North Carolina Division of Water Quality. Specific requirements for these systems shall be in accordance with the design criteria and standards contained in the Land Development Standards Manual.
- C. Qualifying areas of the Structural BMP's may be considered pervious when computing total built-upon area. However, if the structure is used to compute the percentage built-upon area for one site, it shall not be used to compute the built-upon area for any other site or area.
- D. The design of the Structural BMP's shall include the appropriate easements for ingress and egress necessary to perform inspections, maintenance, repairs and reconstruction.

3. Installation of Structural BMP's

A. SUBDIVISIONS - Posting of Financial Security Required

- a. When Structural BMP's (Structural BMP's) are required under the High Density Option for subdivisions, the approval of the High Density Development Permit will be subject to the owner filing a surety bond or letter of credit or making other financial arrangements which are acceptable to the City Engineering Department in an amount to be determined by the City Engineering Department in consultation with other agencies, such as the Environmental Protection Department, in a form which is satisfactory to the City Attorney, guaranteeing the installation and maintenance of the required Structural BMP's until issuance of certificates of occupancy for seventy-five percent (75%) of all construction which might reasonably be anticipated to be built within the area which drains into the Structural BMP's, allowing credit for improvements completed prior to the submission of the final plat. Upon issuance of certificates of occupancy for seventy-five percent (75%) of all anticipated construction relative to the required Structural BMP's, written notice thereof must be given by the owner to the City Engineering Department. The City Engineering Department will arrange for an inspection of the Structural BMP's and if found satisfactory, will within 30 days of the date of notice notify the owner in writing.

B. Property Other Than SUBDIVISIONS - Civil Penalties

- a. Any person who fails to install or maintain the required structural BMP in accordance with this chapter, shall be subject to a civil penalty of not more than \$500. No penalties shall be assessed until the person alleged to be in violation has been notified of the violation by registered or certified mail, return receipt requested, or other means which are reasonably calculated to give actual notice. The notice shall describe the violation with reasonable particularity, specify a

reasonable time period within which the violation must be corrected, and warn that failure to correct the violation within the time period will result in the assessment of a civil penalty or other enforcement action. Each day that the violation continues shall constitute a separate violation.

4. Maintenance Responsibility of Structural BMP's

- A. For single family developments, the owner may petition the City Council for acceptance of maintenance responsibilities of the Structural BMP's. The City will accept maintenance responsibilities if the Structural BMP's have been built according to standards contained in the Land Development Standards Manual or other published standard of the City Engineer and are functioning as designed, provided, however, that the City Council may attach reasonable conditions to its acceptance of maintenance responsibilities including requiring the granting of appropriate easements for ingress and egress.
- B. Maintenance of Structural BMP's other than those in single family developments which have been accepted by the City shall be the responsibility of the property owner. The property owner may apply for a credit to the property's storm water fee according to the policies of Charlotte-Mecklenburg Storm Water Services to compensate for this responsibility. The property owner will be responsible for the on-going maintenance of the Structural BMP's. If at any time the BMP's are not properly maintained, the credit will be suspended.

5. Additional Requirements

- A. An Occupancy Permit shall not be issued for any building within the permitted development until the City Engineering Department has approved the stormwater control structure, as provided in Section 10.609.3(A).

Section 10.610. Appeals and Variances.

- A. Any appeal to reverse or modify the order, decision, determination, or interpretation of the Zoning Administrator shall be subject to Chapter 5, Appeals and Variances, of these regulations.
- B. A petition for a local watershed variance, as defined in this part, shall comply with all the procedures and standards of Chapter 5, Appeals and Variances, of these regulations. The Board of Adjustment shall have the authority to grant or to deny a local watershed variance based upon § 5.108, "Standards for granting a variance". Any appeal of the Board's decision shall be pursuant to Chapter 5 and G.S. § 160A-388(e).
- C. A petition for a minor watershed variance or a major watershed variance, as defined in this part, shall comply with all the procedures and standards of Chapter 5, Appeals and Variances, of these regulations, with the following additions:
 - 1. In addition to the notification requirement of Chapter 5, the Zoning Administrator shall mail a written notice to each local government having jurisdiction in the watershed where the subject property is located and/or any entity utilizing the receiving waters of the watershed as a water supply at least ten (10) working days prior to the public hearing.

The applicant for the variance shall provide a list of those local governments and/or entities that must be notified. The notice shall include a description of the variance being requested. Recipients of the notice of the variance request may submit comments at least three (3) working days prior to the scheduled hearing date by the Board of Adjustment. Such comments, properly filed, shall become part of the record of proceedings.

2. The Board of Adjustment shall have the authority to grant or deny a minor watershed variance based upon § 5.108 "Standards for granting a variance". Any appeal of the Board's decision shall be pursuant to Chapter 5 and G.S. § 160A-388(e).
3. The Board of Adjustment shall make a recommendation to grant or a decision to deny a major watershed variance based upon § 5.108, "Standards for granting a variance" of these regulations and the standard provided for in 15A NCAC 2B .0104(r), which states that a major watershed variance is to be determined on a case-by-case basis, when necessary to accommodate important social and economic development.
 - a. If the Board of Adjustment recommends that the major variance be granted, the Zoning Administrator shall within thirty (30) working days forward a preliminary record of the Board's hearing to the North Carolina Environmental Management Commission ("EMC") for final decision in accordance with the State's rules and regulations. The preliminary record of the hearing shall include:
 - (a) The variance application;
 - (b) The hearing notices;
 - (c) The evidence presented;
 - (d) Motions, offers of proof, objections to evidence, and rulings on them;
 - (e) Proposed findings and exceptions;
 - (f) The proposed decision, including all conditions proposed to be added to the permit.
 1. When the EMC approves or denies the variance, the EMC will prepare an EMC decision and send it to the Board. The Board shall then prepare a final decision granting or denying the proposed variance. If the EMC approves the variance with condition and stipulations, the Board shall prepare a final decision, including such conditions and stipulations, granting the proposed variance.

The EMC decision shall constitute the final decision on the major variance request and the applicant shall be notified of the decision by the Zoning Administrator.
 2. Any further appeal of the EMC's decision of a major watershed variance shall be pursuant to the authority and enabling legislation of the EMC.
- b. If the Board of Adjustment makes a decision to deny the major variance, then the record of the Board's hearing, findings, and conclusions shall not be forwarded to the North Carolina Environmental Management Commission. Any appeal of the Board's denial of a major watershed variance shall be pursuant to Chapter 5 and

4. The Zoning Administrator shall keep a record, including a description of each project receiving a variance and any reasons stated for granting the variance, of all approved major and minor watershed variances. The Zoning Administrator shall submit a record of the variances granted during the previous calendar year to the North Carolina Division of Environmental Management on or before January 1 of the following year. This record shall provide a description of each project receiving a variance and the reasons for granting the variance.

Section 2. That this ordinance shall become effective upon its adoption.

Approved as to form:

J. B. Marshall Jr.
Sr. Dep. City Attorney

I, Brenda R. Freeze, City Clerk of the City of Charlotte, North Carolina, DO HEREBY CERTIFY that the foregoing is a true and exact copy of an Ordinance adopted by the City Council of the City of Charlotte, North Carolina, in regular session convened on the 18th day of May, 2000, the reference having been made in Minute Book 114, and recorded in full in Ordinance Book 50, Page(s) 326-339.

WITNESS my hand and the corporate seal of the City of Charlotte, North Carolina, this the 24th day of August, 2000.

Brenda R. Freeze, CMC
Brenda R. Freeze, CMC, City Clerk

Petition No. 00-65
Petitioner: Mecklenburg County Department
of Environmental Protection

**AN ORDINANCE AMENDING APPENDIX A
OF THE CITY CODE - ZONING ORDINANCE**
ORDINANCE NO. 1546

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF CHARLOTTE:

Section 1. Appendix A, "Zoning" of the Code of the City of Charlotte is hereby amended as follows:

1. **CHAPTER 10: OVERLAY DISTRICTS, PART 6: CATAWBA RIVER/LAKE WYLIE WATERSHED OVERLAY,**

A. Section 10.606. Development Standards for the CATAWBA RIVER/LAKE WYLIE WATERSHED OVERLAY, 2, PROTECTED AREA, A. Area, Yard, and bulk regulations, 3. Maximum allowable Built Upon Area (%B.U.), Footnote to Chart 10.606.2 (A3), by making the word "Footnote" plural to "Footnotes" and adding footnote (2) as follows:

(2) Percentages apply on an individual lot basis for lots of record established on or before June 21, 1993. Lots of record established thereafter will be subject to these percentages unless otherwise specified on a recorded plot or on a subdivision plan approved by the Planning Commission.

B. The following section is amended by crossing through wording to be deleted and underlining additions in the text;

Section 10.608. Buffer Areas Required.

Vegetative buffers are required along the shoreline of The Catawba River/Lake Wylie measured from the normal pool elevation and along all perennial streams measured from the top of bank on each side of the stream.

1. (No change)
2. (No change)

3. Additional buffer requirements:

No permanent structures, built upon areas, septic tanks systems or any other disturbance of existing vegetation shall be allowed within the buffer except as follows:

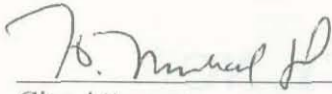
- a. No trees larger than 2 inch caliper are to be removed except for dead or diseased trees. Trees less than 2 inch caliper and undergrowth may be removed to be replaced by an effective stabilization and filtering ground cover based upon the Watershed Buffer Guidelines for Mecklenburg County contained in Appendix 5 and as approved by the County Environmental Protection Department. (Appendix 5 attached)
- b. Streambank or shoreline stabilization is allowed as approved on a plan submitted to the applicable Engineering Department and the County Environmental Protection Department.
- c. Water dependent structures and public projects such as road crossings and greenway paths are allowed where no practical alternative exists. These activities should minimize built-upon surface area, direct run off away from surface waters and maximize the utilization of nonstructural BMP's and previous materials.
- d. During new development or the expansion of existing development the City can require enhancement of the existing vegetation in the buffer if necessary so that the buffer can effectively perform its filtering and absorption functions based on the Watershed Buffer Guidelines for Mecklenburg County contained in Appendix 5.
- e. Non-impervious recreational development and non-impervious pedestrian trails may be allowed in the required buffer if located a minimum of 30' from the stream bank.

4. Mitigation of disturbed buffers required.

Should existing vegetation within the buffer be disturbed (except as allowed by this Ordinance) or should vegetation which was added to a buffer pursuant to the requirement that existing vegetation in the buffer be enhanced be disturbed (except as allowed by this Ordinance), the Zoning Administrator shall require that any vegetation remaining in the buffer be enhanced in accordance with the Watershed Buffer Guidelines for Mecklenburg County contained in Appendix 5 so that the buffer can effectively perform its filtering and absorption functions.

Section 2. That this ordinance shall become effective upon its adoption.

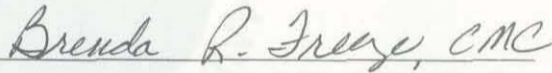
Approved as to form:



S. D.
City Attorney

I, Brenda R. Freeze, City Clerk of the City of Charlotte, North Carolina, DO
HEREBY CERTIFY that the foregoing is a true and exact copy of an Ordinance adopted by the City
Council of the City of Charlotte, North Carolina, in regular session convened on the 18th day of
May, 2000, the reference having been made in Minute Book 114, and recorded in full in
Ordinance Book 50, Page(s) 340-342M.

WITNESS my hand and the corporate seal of the City of Charlotte, North Carolina, this the 24th
day of August, 2000.



Brenda R. Freeze, CMC, City Clerk

APPENDIX 5

WATERSHED BUFFER GUIDELINES
for
MECKLENBURG COUNTY, NC



Revised: July, 1998

**ENVIRONMENTAL MANAGEMENT DIVISION
WATER QUALITY SECTION
700 NORTH TRYON STREET
CHARLOTTE, NORTH CAROLINA 28202-2236**

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For more information concerning buffers or general watershed protection, please call the Water Quality Section of the Mecklenburg County Department of Environmental Protection at (704) 336-5500.

MECKLENBURG COUNTY, NORTH CAROLINA

WATERSHED BUFFER GUIDELINES

Mecklenburg County, the City of Charlotte and the Towns of Cornelius and Huntersville subdivision and zoning ordinances require water quality protection buffers for the county's regulated water supply watersheds. These ordinances further require the Mecklenburg County Department of Environmental Protection (MCDEP) to develop guidelines and approve plans for any activities that would disturb the buffers. The Watershed Buffer Guidelines for Mecklenburg County (Guidelines) fulfill that requirement setting forth minimum desirable standards and will be used on a case by case basis to direct plan approval. (Note: The zoning and subdivision ordinances of Davidson require buffers but do not reference these guidelines.) Plans will be required under the ordinances in the following situations to include but not limited to:

- 1) when streambank or shoreline stabilization is proposed;
- 2) when removal of existing trees is proposed for access to the lake or stream;
- 3) during new development or the expansion of existing development if the buffer requires enhancement;
- 4) when any disturbance of existing vegetation is proposed within the buffer; and
- 5) when any land disturbance occurs within the buffer (i.e. grading, filling, soil tilling, etc.). Plan approval will be based on the direct application of these Guidelines as appropriate and on the ability of the buffer to protect water quality as explained in the purpose statement.

Purpose: The primary intent of these Guidelines is to maintain or establish and maintain an effective, natural, forested, low maintenance ecosystem which will function as described below. Watershed buffers are undeveloped areas between perennial streams or lakes, and development. These buffers serve a specific purpose of reducing the volume of runoff, thereby reducing erosion and pollutants coming from an area of more intensive land use to a waterbody. The reduction of erosion and pollutants occurs through natural mechanisms such as deposition, infiltration, adsorption, filtration and decomposition. Natural forested areas have the best capacity for collecting and storing nutrients and other pollutants. The tree canopy also protects the soil from erosion and provides shading which can reduce water temperatures and enhance aquatic habitats. (Shallow rooted grasses requiring ongoing maintenance do not fulfill this purpose.)

I. GENERAL REQUIREMENTS AND PROHIBITIONS

1. Applicability

- a. **Mountain Island Lake:** These guidelines are applicable to property in the Mountain Island Lake watershed as defined in the applicable local subdivision ordinances as follows:
 - i. All new subdivisions of land with property adjacent to the lake or a perennial stream, approved in Mecklenburg County after March 8, 1993, in Charlotte after June 21, 1993, in Cornelius after September 20, 1993 and in Huntersville after October 1, 1993,

unless prior approval had been granted as specified in the applicable subdivision ordinances (i.e. "they have been grandfathered").

- ii. All new or improved lots adjacent to the lake or a perennial stream in Mecklenburg County and Charlotte, commencing construction after June 21, 1993, in Cornelius after September 20, 1993, and in Huntersville after October 1, 1993, unless prior approval had been granted as specified in the applicable zoning ordinances (i.e. "they have been grandfathered").
- b. **Lake Norman:** These guidelines are applicable to property in the Lake Norman watershed as defined in the applicable local subdivision ordinances as follows:
- i. All new subdivisions of land with property adjacent to the lake or a perennial stream, approved in Mecklenburg County after June 6, 1994, and in Cornelius after September 20, 1993, unless prior approval had been granted as specified in the applicable subdivision ordinances (i.e. "they have been grandfathered").
 - ii. All new or improved lots adjacent to the lake or a perennial stream in Mecklenburg County commencing construction after June 6, 1994, and in Cornelius after September 20, 1993, unless prior approval had been granted as specified in the applicable zoning ordinances (i.e. "they have been grandfathered").
 - iii. For buffer guidance in the portion of the watershed under the jurisdiction of the Town of Davidson, refer to its local zoning and subdivision ordinances which became effective October 1, 1993.
- c. **Lake Wylie:** These guidelines are applicable to property in the Lake Wylie watershed as defined in the applicable local subdivision ordinances as follows:
- i. All new subdivisions of land with property adjacent to the lake or a perennial stream, approved in Mecklenburg County after June 20, 1994, and in Charlotte after June 21, 1993, unless prior approval had been granted as specified in the applicable subdivision ordinances (i.e. "they have been grandfathered").
 - ii. All new or improved lots adjacent to the lake or a perennial stream in Mecklenburg County commencing construction after June 20, 1994, and in Charlotte after June 21, 1993, unless prior approval had been granted as specified in the applicable zoning ordinances (i.e. "they have been grandfathered").

2. Requirements/Allowances

- a. When a site specific buffer plan is needed, (required or voluntary enhancement) each subdivision or lot shall provide to MCDEP a plan for approval. Plans shall be submitted individually or in conjunction with erosion control and/or subdivision/building review plans. A Sample Site Specific Buffer Plan is provided in Appendix A.
- b. Slope shall be addressed in each individual buffer plan as to the number and density of tree cover and other plant material in order to adequately protect the shoreline. In general, the steeper the slope grade, the greater the density of trees and vegetation required to control the runoff. All erosion control devices should be located along the upland side of the buffer. To address any erosion caused by the construction of accessways or shoreline stabilization, temporary erosion control measures may occur in the buffer with approval from MCDEP.
- c. If concentrated flow from a subdivision or a lot begins above a buffer, it should be

dispersed as it flows into the buffer to promote shallow and uniform flow. Storm water ditches and pipes shall stop prior to the buffer allowing water to sheet flow across the buffer thus minimizing channelization of storm water flow.

- d. Shoreline stabilization is allowed as long as minimal disturbance of the existing buffer occurs. Other required permits for shoreline maintenance, dredging or filling, and dock construction (401/404 State permits, Duke Power, Building Standards) need to be obtained prior to construction.
- e. Land clearing is allowed on a limited, conditional basis as explained under "Maintenance of Existing Buffer Vegetation" #3 on page 4.
- f. Openings to provide access to the lake and dock areas are allowed, but are limited to a maximum width of 10 feet for boats and 6 feet for walkways. Access to streams is limited to a maximum width of 6 feet for walkways. Pervious materials should be used as base material or elevated boardwalks can be used. Paths should be constructed to effectively control runoff and erosion. Where slopes exceed 15%, lake or stream access methods must receive prior approval, unless they are above ground (boardwalks).
- g. Temporary disturbances of the buffer are allowed with prior approval from MCDEP and shall be evaluated on a case by case basis taking into consideration the primary intent of these Guidelines.
- h. Utility right-of-ways are allowed in the buffer provided they are revegetated in accordance with these Guidelines.
- i. Pumps for irrigation are allowed in the buffer provided they are electrically operated. No gasoline engines are allowed.

3. Prohibitions

- a. Turf grass, as a permanent landscape feature, is not permitted within the buffer. Turf grass used for temporary erosion control measures as part of an approved plan is allowable (e.g. rye).
- b. Impervious structures such as driveways and boat houses on land are not permitted within the buffer.
- c. Septic tanks, drain fields and repair areas are not permitted within the buffer. Repairs to existing septic systems, that involve no increase in capacity, shall be considered on a case by case basis.
- d. Structural best management practices are not allowed in the buffer.
- e. Clearing or grading within the buffer is not allowed. If the existing buffer is disturbed in any way, the buffer must be replanted in accordance with these Guidelines.

II. MAINTENANCE OF EXISTING BUFFER VEGETATION

1. Ground cover

Existing, trees, shrubs, ground covers, natural grasses or perennials should be left in place. Where there is not enough vegetation to control runoff and erosion, a mulch cover of 2 inch minimum depth should be maintained over the entire buffer area. This should be, whenever possible, made up of natural leaf litter as is typically found in an undisturbed wooded area. Where this natural

litter is not present at a sufficient depth, it should be supplemented with a natural organic mulch such as leaves, leaf mold, wood chips, tree bark or pine needles. Removal of natural leaf fall from within the buffer is prohibited as natural leaf litter provides beneficial results such as enriching the soil, protecting tree roots and absorbing water runoff. Perennial ground cover as specified under "VEGETATION IN THE BUFFER" Section 4 on page 5 can be used in place of mulch as approved by MCDEP.

2. Existing Tree Cover

Except as otherwise provided in these Guidelines, existing tree cover should be retained at a minimum density of at least 12 healthy trees of a minimum 6 inch caliper per 1000 square feet of buffer area. This minimum tree density should be more or less uniformly distributed over the entire buffer area with the exception of approved openings. Pruning of trees within the buffer will be limited to the removal of only lateral limbs from no more than the lower 50 percent of the tree's total height. Topping is not allowed. The Subdivision Ordinances state that "No trees larger than 2 inch caliper are to be removed except for dead or diseased trees." Combinations of larger and smaller trees can also provide an effective buffer. For example, where an adequate density of natural tree cover exists, but there are too few trees of the minimum 6 inch diameter size class, then two trees of at least a 1 1/2 inch caliper may be counted for each deficiency of a larger tree. (As an example, if a buffer contained 2500 square feet, the normal standard would be a minimum of 30, six inch trees. If the buffer had only 10 trees over six inches and the rest were smaller, then the standard would be met with the 10 six inch trees and 40 (2x20) trees above 1 1/2 inches in caliper.)

3. Land Clearing

The removal of some native vines, shrubs, ground covers and small trees to facilitate a better view or a more aesthetically pleasing natural landscape may be allowed. This thinning operation must be done with hand tools and/or minimal use of approved herbicides. No grubbing of tree stumps is allowed; however, their removal with a stump grinding machine which causes minimal soil disturbance is allowed. Natural leaf litter, humus and soil should remain.

4. Exceptions

- i. Some tree thinning may be permissible with approval where thick cover exists and it is desirable to promote a healthy tree cover and produce the most effective buffer.
- ii. The minimum desired tree density standard may be reduced in order to reduce crowding to below 12 trees per 1000 square feet, if the buffer contains a majority of large diameter trees. For every three trees that have a diameter at chest height of over 12 inches, the total number of trees desired within the buffer is reduced by one tree. As an example, if a buffer is 2500 square feet, it should contain a minimum of 30 healthy trees of a minimum six inch diameter. Should 15 of these trees be 12 inches in diameter or above, then the minimum desired standard would drop to 25 trees with the lower density being found in the area where the larger trees were predominant.

III. PLANTING NEW/ADDITIONAL VEGETATION IN THE BUFFER

1. New or Enhanced Tree Cover

In areas of the buffer where the density of trees is less than the minimum, it is desirable to plant new trees. Where new or replacement trees are installed to satisfy the minimum standards set forth in these Guidelines, they should be planted to a density of 12 trees per 1000 square feet and have a minimum caliper of 1 1/4 inches measured at 6 inches above the rootball. Equivalent combinations of permanent tree, shrubs and ground covers may be substituted following MCDEP's approval of a buffer plan (see Appendix A).

2. Shrubs and Ground covers

Planting of additional shrubs, ground covers and perennials may be approved if done so with minimal disturbance to root systems of existing trees. Addition of nutrients (fertilizers) into these buffer areas is prohibited except at planting time when mixing nutrients and soil amendments with the backfill soil is acceptable.

IV. VEGETATION IN THE BUFFER

1. Benefits of a Vegetated Buffer

A healthy vegetative cover within the buffer area can provide a stable land surface which absorbs rainfall, cuts down on heat reflectance and noise, and absorbs pollutants washing across the land. Dense, vigorous vegetation protects the soil from raindrop impact, a major force in dislodging soil particles and moving them down slope. The shielding effect of a plant canopy is augmented by roots and rhizomes that hold the soil, improve its physical condition, and increase the rate of infiltration. Plants also reduce the moisture content of soil through transpiration, thus increasing its capacity to absorb water. Undisturbed buffer areas can provide low-maintenance landscaping, shade, and privacy screening. Large trees and carefully designed buffers may dramatically increase property value.

2. Site Considerations

Species selection should be based on site characteristics including soils, slope, aspect, climate, and expected management of that area.

- a. **Soils:** Piedmont soils are generally low in organic matter and have subsoils high in clay. Deeper subsoils are typically silts, silt loams, and sandy loams. Surface soils vary from sandy loam to clay loam, and subsoils are commonly thick with heavy clay texture. Topography is mostly rolling hills with well developed drainage patterns. Piedmont soils generally support a wide variety of plants, including both cool and warm season species.
- b. **Slope:** Slope describes the degree of steepness of the topography on a parcel of land. The steeper the slope, the more essential is a vigorous vegetative cover. This vigorous vegetative cover will help protect accelerated runoff due to the steep slope by slowing down the velocity of the water running across that surface.

- c. **Aspect:** Aspect is the actual direction in which the property or specific site faces. Aspect affects soil temperature and available soil moisture. South and West facing slopes tend to be warmer and drier, while North and East facing slopes tend to be cooler and more moist. On South and West facing slopes, mulch is essential to retain moisture and drought tolerant species are recommended. South and West facing slopes may also be subject to occasional frost heaving due to repeated cycles of freezing and thawing.
- d. **Climate:** The regional climate must be considered when selecting well adapted species. Climatic differences determine the appropriate plant selections based on such factors as cold hardiness, tolerance to high temperatures and high humidity, and resistance to insects and disease. Mecklenburg County lies in the southern Piedmont region of the Carolinas, situated between the Coastal Plain to the east and the Foothills and Mountains to the West. Winter temperatures in the southern Piedmont average 47 degrees. The average low is 30 degrees with temperatures sometimes dropping below 0 degrees. The average Summer temperature is 70 degrees. The average high is 87 degrees and sometimes tops 100 degrees. The southern Piedmont region receives an average of about 45 inches of rainfall annually with the majority of rain occurring during the late winter and spring months. Drought conditions may occur during the summer months and must be considered when selecting appropriate species for buffer area planting.
- e. **Management:** Buffer areas should be established for low to no maintenance. Effective buffers should mimic as closely as possible true natural conditions. Native plants or species that are well adapted to this region should be selected. Longevity of a species is an important consideration, as well as resistance to disease, drought, infestations from pests, etc. Plant species selected should also require no fertilization on a regular basis.

3. **Approved Plants for Watershed Buffers**

The following species lists are approved for the Carolinas region in general and need to be matched with local site conditions. This species list is not considered comprehensive and variations from these lists may be permitted with prior approval from MCDEP. The criteria discussed above will be used when determining non-listed species for buffer suitability.

a. Native Trees for Buffer Area Planting

Ailanthus
Arborvitae
Ash - Green, White
Bald Cypress
Basswood
Beech
Birch - River, Sweet, Yellow
Blackgum
Black Walnut
Box Elder
Buckeye
Catalpa
Cedar - Eastern Red, Atlantic White
Cherry - Black, Red
Chinese Chestnut

Cottonwood - Eastern
Dogwood
Elm - Slippery, Winged (Not American due to Dutch Elm disease)
Hawthorn
Hackberry
Hemlock
Hickory - Bitternut, Shagbark, Mockernut, Pignut
Holly
Hop-Hornbeam
Locust - Honey, Black
Magnolia
Maple - Sugar, Silver, Red
Mulberry
Oak - White, Post, Chestnut, Live, N.Red, S.Red, Cherrybark, Black, Willow, Scarlet, Water, Pin
Persimmon
Pine - Shortleaf, Loblolly, Virginia, Longleaf, White
Poplar - Yellow
Redbud
Sassafras
Service Berry
Silverbell
Sourwood
Sweetgum
Sycamore
Willow - Black, Weeping
Witch-hazel

b. Native Shrubs for Buffer Area Planting

Alder
American Elder (Elderberry)
Arnot Bristly Locust
Autum Olive
Azalea
Bankers Dwarf Willow
Bayberry
Beauty berry
Blackberry
Blueberry
Buttonbush
Chinquapin
Choke berry
Crape Myrtle
Dogwoods - Rodosier, Greystem, Silky, Red Twig
Fetterbush
Groundsel tree
Holly - Dwarf Inkberry, Gallberry, Winterberry
Horsesugar
Huckleberry
Indigo Bush

Lespedeza
Meadowsweet
Mimosa
Mountain Laurel
Paw Paw
Pepperbush
Privet
Purpleosier Willow
Rhododendron
Rose
Snowbell
Spicebush
Strawberrybush
Sumac (non-poisonous)
Sweet Fern
Viburnum
Wax Myrtle
Winter Jasmine
Yaupon

c. Ground Cover for Buffer Area Planting

Bearberry
Bigleaf Winter Creeper
Daylily
English Ivy
Ferns
Honeysuckle
Juniper
Pachysandra
Periwinkle
St. Johnswort
Virginia Creeper

d. Non-Turf Grasses for Buffer Area Planting

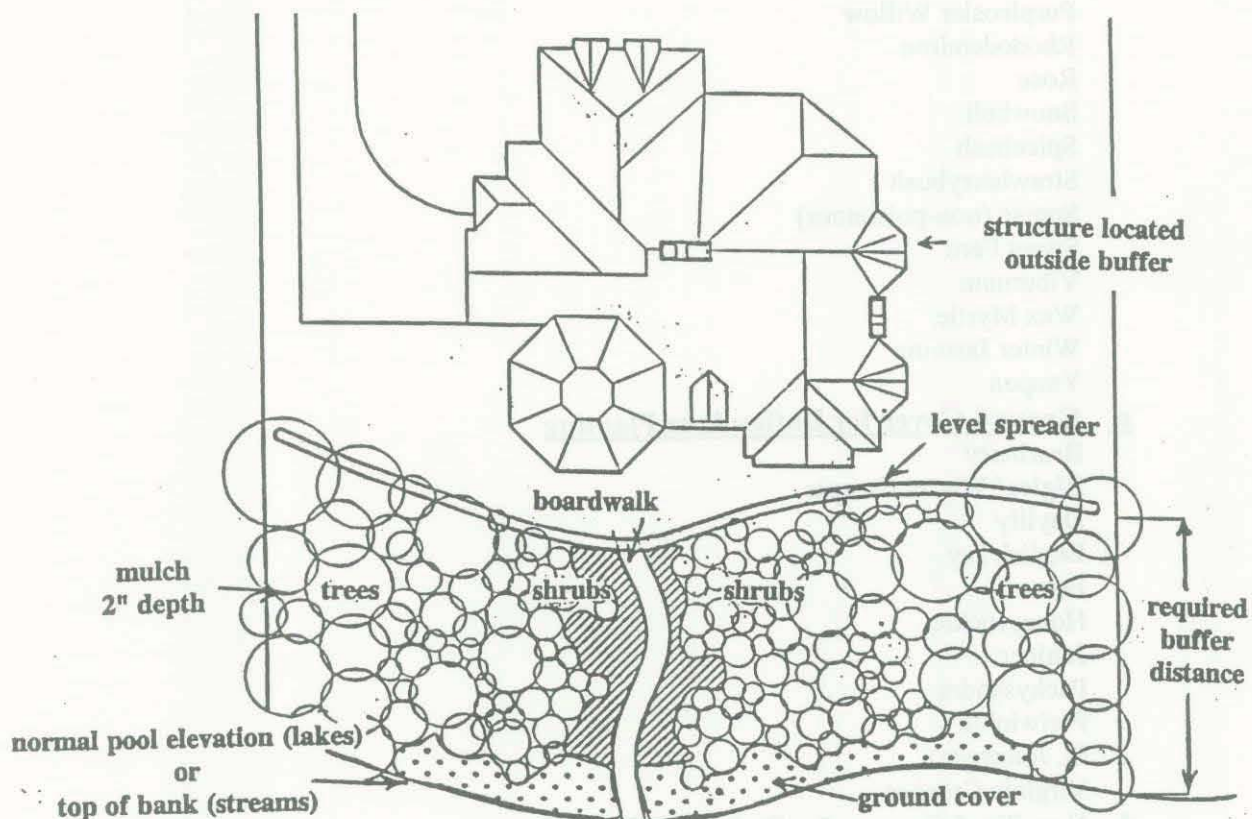
Bluestem - Big, Little
Broomsedges
Deertongue
Indiangrass
Ironweed
Jerusalem Artichoke
Joe Pye Weed
Liriope
Swamp Milkweed
Switchgrasses

Species list compiled by MCDEP Water Quality staff with assistance from Mecklenburg County Storm Water Services, Mecklenburg County Cooperative Extension Service, Mecklenburg County Soil and Water Conservation District, and the City of Charlotte Landscape Management Division.

APPENDIX A

SAMPLE BUFFER PLAN

July 29, 1998



Specifications Which Must Be Included In The Buffer Plan:

- All plant species to be placed in the buffer must be identified.
- The distances between the different plantings must be specified.
- All plantings must comply with the "Watershed Buffer Guidelines for Mecklenburg County, NC" Section III entitled Planting New/Additional Vegetation In Buffer which is located on page 5.
- All plantings should be of a variety specified in the "Watershed Buffer Guidelines for Mecklenburg County, NC" Section IV entitled Vegetation In The Buffer which is located on pages 5 through 8.
- Mulch should be specified at a minimum depth of 2 inches.

APPENDIX B

SUBDIVISION PLAN REQUIREMENTS FOR BUFFERS

July 29, 1998

A separate Buffer Plan must be included in the Subdivision Plan package. It should be listed on the Master Plan's index as Buffer Plan. The Buffer Plan must contain the following:

1. The entire buffer area clearly marked or shaded.
2. The point from which the buffer was measured.
3. Any activity or disturbance in the buffer should be identified and "blown up" on the Buffer Plan. Specific details should be given on pathways, boardwalks, boat ramps, etc.
4. If a disturbance is proposed in the buffer (such as a boat ramp or sewer line ROW), a restoration plan showing replantings should be included as part of the Buffer Plan. The restoration should follow the guidelines stated in the Watershed Buffer Guidelines for Mecklenburg County, NC. Specifics should be stated such as tree/ bush types and planting densities.

The Buffer Plan MUST CLEARLY STATE the following:

1. No disturbance whatsoever is allowed in the buffer.
2. No sediment basins, open channels, or piped storm water is allowed in or through the buffer. Drainage areas should be designed to allow water to sheet flow across the buffer to filter out pollutants. Plunge pools, level spreaders, diversion devices or wetland flow should be used to provide this sheet flow.
3. No heavy equipment is allowed in the buffer.
4. The buffer will be clearly marked by flagging or fencing prior to any construction at the site.
5. Any activity in the buffer will comply with the Watershed Buffer Guidelines for Mecklenburg County, NC.
6. The Mecklenburg County Department of Environmental Protection (MCDEP) will be notified of any changes to the approved Buffer Plan.
7. The buffer will be permanently marked on each individual lot using iron stakes in concrete.

8. Buffer restrictions will be placed on each individual deed.
9. Educational materials concerning the buffer will be distributed to each homeowner and builder prior to construction or occupancy.
10. All sub contractors will be notified of the buffer regulations prior to development.
11. MCDEP will be notified following the completion of construction activities in order that an inspection of the buffer can be performed. Certificates of Occupancy will not be released until MCDEP has verified that the buffer complies with all applicable ordinances and guidelines.