

Article 12. Natural Resources

30-12-1 Tree Conservation

30-12-1.1 Purpose

The tree conservation regulations of this section are intended to help preserve the city's remaining tree canopy. By doing so, the regulations help:

- A. maintain and enhance the visual character of the city and contribute to economic growth and prosperity;
- B. control surface water runoff;
- C. improve air quality;
- D. moderate temperatures;
- E. provide wildlife habitat; and
- F. conserve water.

30-12-1.2 Applicability

The tree conservation requirements of this section apply to all of the following unless expressly exempted pursuant to [30-12-1.3](#). In addition, a tree disturbance permit or an approved plan, per [30-4-26.3](#), is required in association with all of the following:

- A. principal buildings or open uses of land developed, constructed, reconstructed, or established after October 17, 2000;
- B. changes in use that result in an increase of 2 or more in the Land Use Classification number, in which case the tree conservation requirements of this section apply to the entire zone lot;
- C. All expansions of buildings, parking areas, or open uses of land, except the first 3,000 square feet of expansion to buildings, parking areas, or open uses of land existing on October 17, 2000 (Note: the tree conservation requirements of this section are applicable only to the expansion).

30-12-1.3 Exemptions

All of the following land disturbing activities are exempt from the tree conservation requirements of this section and the tree disturbance permit requirements of [30-4-26.3](#):

- A. Single-family detached, two-family attached, or duplex dwellings on their own lots.
- B. Multi-family developments containing 8 or fewer dwelling units on a single zone lot.
- C. Properties within or surrounded by the CB, Central Business district.
- D. Tree removal involving the disturbance of 3,000 square feet or less of critical root zone that is not inconsistent with any plan previously approved by the city or county. The Planning and Community Development Director is authorized to require reasonable documentation that such removal is not associated with a forthcoming development proposal and will not be inconsistent with any plan previously approved by the city or county. Willful violations of the requirement to provide such documentation may result in the assessment of tree disturbance penalties in accordance with [30-5-5.5](#).
- E. Property covered by an active forestry management plan written by a North Carolina Registered Forester, provided documentation has been furnished to the Planning and Community Development Director.

Commentary: For the purposes of this section the housing types "Traditional House" and "Zero Lot Line" are considered single-family detached, the housing type "Twin Home" is considered two-family attached, and the housing type "Townhouse" is considered multi-family.

30-12-1.4 Conservation of Existing Trees

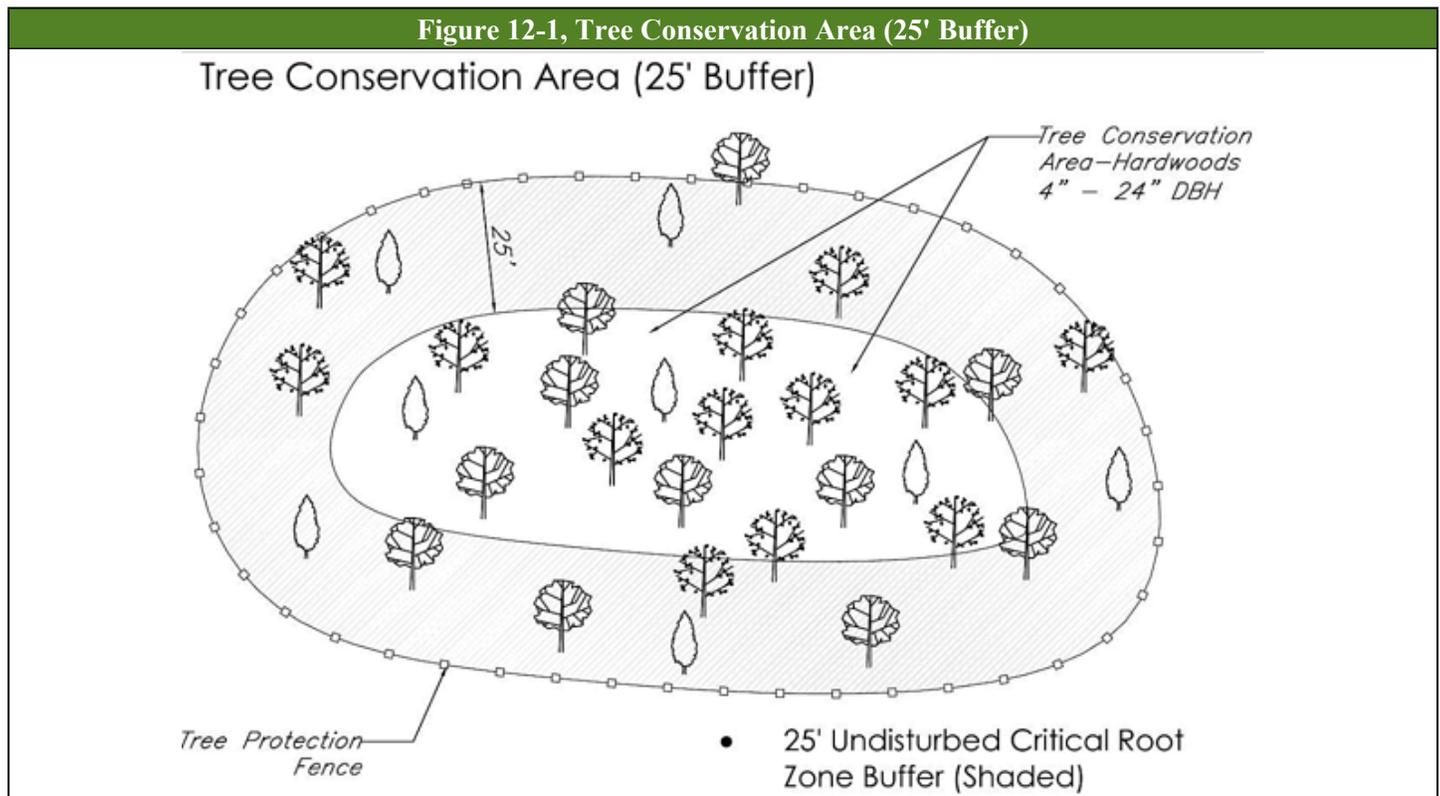
A. General

Any existing tree or group of trees that meets or exceeds the standards of this subsection may be used to satisfy the tree conservation requirements of this section. The conservation of stands of trees is strongly encouraged. The conservation of individual trees is only recommended when saving a specimen tree.

B. Standards

To receive tree conservation credit, trees must be protected from direct and indirect root, trunk and crown damage or disturbance. The following standards apply:

1. The tree conservation area includes land within the critical root zone. In cases where a tree inventory has not been submitted, the critical root zone area of the tree conservation area is unknown. In this case, the critical root zone area of the tree conservation area may be protected by an undisturbed buffer at least 25 feet in width or as otherwise approved by the Planning and Community Development Director. The 25-foot undisturbed buffer shall be measured from the trunk of the outermost trees.



2. Construction site activities such as parking, material storage, dirt stockpiling, concrete washout and other similar activities are prohibited within the tree conservation area.
3. Changes to the grade of soil that compromise the tree conservation area by increasing or decreasing soil moisture content must be avoided.
4. A reasonable effort must be made to have utility line trenches and similar uses avoid the tree conservation area. Due to certain site conditions, where disturbance within the tree conservation area is unavoidable, underground tunneling or directional boring of utilities is preferred. Trenching, with the approval of the Planning and Community Development Director, may be used only as the last alternative and root pruning equipment specifically designed for that purpose must be used.

5. Protective fencing must be installed around the tree conservation area before any tree disturbing activities. Such fences must be at least 4 feet in height and must consist of orange polyethylene safety fencing. Where the tree protection fence and the soil erosion control fence run congruent, the soil erosion control fence may be substituted for the tree protection fence. Fencing must remain in place until construction is complete and other landscaping has been installed, and the Planning and Community Development Director has approved its removal.
6. The tree conservation area must be designated as such with "Tree Conservation Area" signs posted visibly on the outside of the fenced-in area. Signs may not be posted on trees.

C. Evaluation of Specimen Trees and Stands of Trees

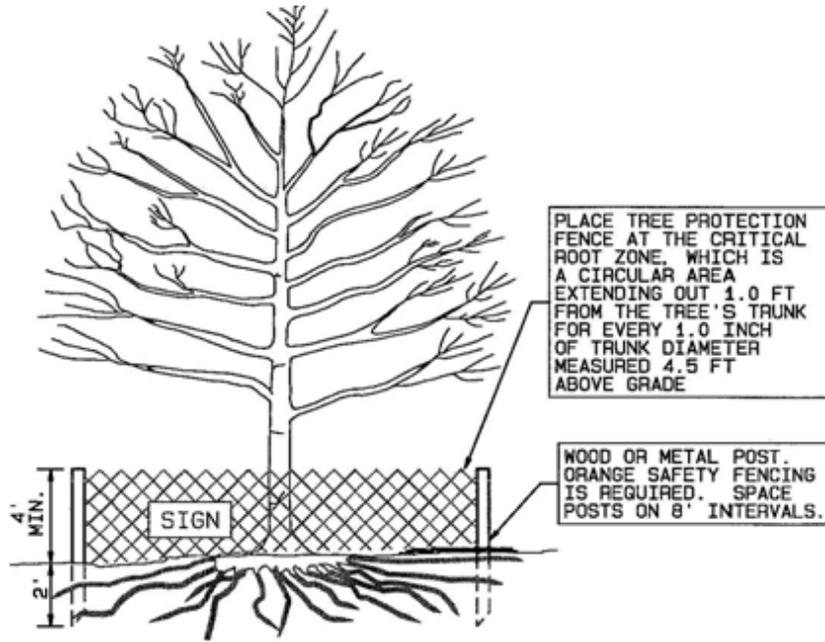
Existing specimen trees and stands of trees must meet all of the following conditions to be considered for the tree conservation area:

1. a life expectancy of greater than 10 years;
2. a relatively sound and solid trunk with no extensive decay; and
3. no major insect or pathological problems.

D. Dead or Unhealthy Trees

1. No tree conservation credit will be allowed for any dead tree, any tree in poor health, or any tree subjected to grade alterations.
2. Maintenance of the tree conservation area is the responsibility of the property owner and/or the owners' association. All dead, dying, or substantially damaged trees shall be replaced at the rate specified in [30-5-5.5](#), Table 5-2.
3. The Planning and Community Development Director may require trees left standing outside of the tree conservation area to be removed if improperly protected or determined to be hazardous.

Figure 12-2, Tree Conservation Area



NOTES:

1. SEE PLANS FOR LOCATION OF ALL TREE PROTECTION FENCES.
2. ALL TREE PROTECTION DEVICES MUST BE INSTALLED PRIOR TO LAND DISTURBANCE, INCLUDING THE CUTTING OF ANY TREES, AND MUST BE INSPECTED BY THE URBAN FORESTER OR HIS DESIGNEE.
3. NO GRADING, TRENCHING, FILLING OR STORING OF MATERIALS IS TO OCCUR IN THE TREE PROTECTION AREA.
4. TREE PROTECTION FENCE MAY NOT BE REMOVED WITHOUT THE APPROVAL OF THE URBAN FORESTER OR HIS DESIGNEE.
5. THE TREE CONSERVATION AREA SHOULD BE DESIGNATED WITH "TREE CONSERVATION AREA" SIGNS POSTED VISIBLY ON THE OUTSIDE OF THE FENCED-IN AREA. SIGNS MAY NOT BE POSTED ON THE TREES. SEE EXAMPLE BELOW.



EXAMPLE SIGN

16" X 12" SIGN
 1" BLOCK LETTERS
 BLACK LETTERS ON WHITE BACKGROUND
 1/4" BLACK BORDER
 ALL WEATHER MEDIA
 100' SUGGESTED SPACING BETWEEN SIGNS

30-12-1.5 Tree Conservation Area Determination

A. Extent of TCA

Minimum tree conservation area requirements are determined according to parcel size, as set forth in the following table:

Table 12-1: Tree Conservation Area Requirements

Area of Parcel (acres)	Required TCA for New Development	Required TCA for Expansions
0 – 1.260	1% of lot size	1% of disturbed area
1.261 – 5	5% of lot size	5% of disturbed area

Table 12–1: Tree Conservation Area Requirements

Area of Parcel (acres)	Required TCA for New Development	Required TCA for Expansions
Greater than 5	10% of lot size	10% of disturbed area

Commentary: *When development is proposed on a site that does not contain the minimum tree conservation area, the minimum requirement is to preserve all existing trees. The 50% reforestation option still applies. On a 10 acre site with only 0.50 acres of existing trees, for example, the owner is responsible only for preserving the half-acre of trees that do exist, not for planting another half-acre of trees. Furthermore, the owner could elect to preserve all of the trees or preserve half and reforest the other half.*

B. Trees to be Saved

If trees of 4 inches or greater DBH exist within or partially within tree conservation areas, such trees must be saved to the extent possible. The area will be designated TCA and may not be disturbed, except as expressly allowed under this section.

C. Smaller Trees

Trees less than 4 inches DBH within the TCA may be preserved at the landowner’s option.

D. Other Provisions

The requirements of this section may be modified to permit the establishment of the TCA pursuant to [30-12-1.6](#).

E. TCA Selection

In selecting which existing stands of trees are to be designated as TCA, the landowner must give due consideration to building, parking lot, driveway, street and utility locations as they relate to the practicality of tree conservation and must use the following tree conservation priority list:

- 1. First Priority for Conservation**
Existing stands of hardwoods growing in or adjacent to stream protection buffers as highest priority
- 2. Second Priority for Conservation**
Existing stands of hardwoods growing on upland sites
- 3. Third Priority for Conservation**
Existing specimen trees (as determined by the Planning and Community Development Director).
- 4. Fourth Priority for Conservation**
Existing stands of hardwoods and pine mix.
- 5. Fifth Priority for Conservation**
Existing stands of pine trees.

F. Activities Allowed in TCA

The following are permitted in the required TCA with prior approval of the Planning and Community Development Director, provided there is no disturbance to the critical root zone of the preserved trees.

1. Landscaping features including planting boxes, sculpture, arbors, trellises, birdbaths and wood fences, provided they are installed by hand (no motorized vehicles).
2. Outdoor furniture, ornamental entry columns and gates, flagpoles, lampposts, address posts, mailboxes, or similar structures.
3. Cornices, steps, canopies, overhanging eaves and gutters, window sills, bay windows or similar architectural features, fire escapes, fire balconies, and fire towers which project not more than 2.5 feet into any required TCA.
4. Wheelchair ramps except for porches, walkways, sidewalks, and landings.
5. Steps not connected to any above-grade structure.

6. Trails and greenways, provided they are constructed to minimize disturbance and impacts on the TCA critical root zone area.
7. Disturbance within the critical root zone will be allowed only on one side of the trees to be saved. Disturbance to the critical root zone may not exceed 25% of the tree's total critical root zone area.

G. Tree Removal Inside the Critical Root Zone (TCA)

Trees less than 4 inches DBH not being preserved, undergrowth and plant material in poor condition may be removed from the TCA. No roots may be removed from the TCA. Stumps may be removed only by grinding. All requests for tree removal within the TCA must have prior approval by the Planning and Community Development Director pursuant to the provisions of this section. However, in an emergency situation due to storm damage; to alleviate an imminent hazard to the health, safety and welfare of the citizens; or to repair property damage, prior approval for tree removal in previously approved designated areas is not required.

H. Certification

All allowed vegetation removal must be done or supervised by an experienced urban forester, landscape architect or certified arborist, who will certify that the tree and root removal or pruning was done in accordance with standard arboricultural practices.

30-12-1.6 Tree Conservation Flexibility Standards

A. Undisturbed Stream Buffers

Properties that are required to maintain an undisturbed stream buffer may use some or all the stream buffer area to satisfy the required TCA if that undisturbed stream buffer contains trees that are a minimum of 4 inches in diameter at breast height.

B. Land Dedications

Land that is dedicated to the city as open space or drainageway that is contiguous to the property being developed may be credited towards meeting a site's tree conservation requirements if the dedicated land contains trees that are a minimum of 4 inches in diameter at breast height. Land contained within dedicated utility easements may not be credited toward TCA requirements.

C. Reforestation Credits

In situations where TCA requirements cannot be met based on site conditions and when approved by the Planning and Community Development Director, reforestation efforts on the property can be used to satisfy up to 50% of the required TCA. See Table 5-2.

D. Alternate Methods of Compliance

See [30-4-11.3\(C\)](#) and [30-4-11.5\(B\)1](#).

E. Reduction of Required Parking

See [30-11-13.7\(F\)](#).

30-12-1.7 Penalties

See [30-5-5.5](#).

30-12-1.8 Modifications

The Technical Review Committee is authorized to approve Type 2 Modifications of the standards of this section in accordance with [30-4-11](#).

(Amended by Ord. 12-114 on 10/2/12)

30-12-1.9 Utility Vegetation Management

A. Purpose and Intent

1. The purpose of 30-12-1.9 through 30-12-1.15 of this Ordinance is to establish guidelines for the routine trimming, pruning, cutting and removal by utility companies of trees and vegetation (sometimes referred to herein as "vegetation maintenance" or "vegetation management") on public streets or rights-of-way, City-owned or controlled property, and private property within the City limits and to encourage the promotion of an urban tree canopy on property within the City limits by ensuring the following:
 - a. That the Public safety is protected from any and all trees, limbs and shrubbery which threaten life and property.
 - b. That the integrity, structural or otherwise, of individual trees within the City's tree canopy is preserved and retained.
 - c. That the detrimental impact to individual trees within the City's tree canopy is kept to a minimum by virtue of vegetation maintenance activities in accordance with the most reasonable, environmentally safe, and approved International Society of Arborist (ISA) arboricultural practices under the circumstances.
 - d. That communication with respect to vegetation management is enhanced between utility companies, on one hand, and the City, communities and owners or residents of any occupied public or private property ("Occupied Property"), on the other hand.
 - e. That maintained or landscaped, occupied public or private property (referred to hereinafter as "Occupied Maintained Property") receive certain protections with respect to the removal of trees from those properties.
 - f. That the provision of safe and reliable overhead utility service is promoted.
 - g. That overhead utilities are protected while decreasing the potential for service interruptions.

B. Duties of Urban Forester

For the purposes of carrying out the provisions of 30-12-1.9 through 30-12-1.15 of this Ordinance, the Urban Forester shall be the responsible party to oversee and coordinate utility vegetation management activities on all trees and vegetation growing within the City limits and the planting, removal, care, maintenance, and protection thereof. The Urban Forester shall advise on all City-initiated construction projects in an effort to plan for and manage the City's vegetative resources.

C. Exceptions

Although it is anticipated that the bulk of utility vegetation maintenance that will occur within the City will be of a routine nature that is governed by the provisions of 30-12-1.9 through 30-12-1.15 of this Ordinance, there are certain limited types of vegetation maintenance, as set forth below, that are excepted from coverage under 30-12-1.9 through 30-12-1.15 of this Ordinance:

1. Although 30-12-1.9 through 30-12-1.15 of this Ordinance apply to overhead electrical distribution lines, said sections do not apply to nor prohibit vegetation management activities pertaining to:
 - a. underground electrical distribution lines.
 - b. electrical transmission lines, or

The term "transmission lines" as it is used herein means electric utility lines in the Duke Energy Carolinas' service territory energized at voltages greater than 44,000 volts and typically carried on steel poles or towers; however, some lower voltage transmission lines may be on wood pole structures.

2. 30-12-1.9 through 30-12-1.15 of this Ordinance do not apply to nor prohibit vegetation management activities pertaining to non-routine vegetation management which includes, without limitation, customer requested work (such as construction projects where new service lines are requested or projects where lines need to be relocated or extended), maintenance of overhead facilities (such as changing out transformers, other pole-mounted equipment or damaged or rotten poles), North Carolina Department of Transportation related work, addressing public safety incidents, or restoring the utility service following emergencies or any other unanticipated interruption or outage.
3. 30-12-1.9 through 30-12-1.15 of this Ordinance shall not apply to nor prohibit the vegetation maintenance of any tree or shrub on public or private property within the City limits, if such vegetation maintenance is done in order to repair or replace the same as a result of damage or deterioration as a result of accident, casualty, or natural elements such as wind, rain, ice, electrical storm, or the like.

D. Legality of Chapter or Parts Thereof

Should any section, clause or provision of 30-12-1.9 through 30-12-1.15 of this Ordinance be declared by the courts to be invalid, the same shall not affect the validity of any other provision of 30-12-1.9 through 30-12-1.15 of this Ordinance.

E. Violations; Stop Work Orders

If a utility does not comply with 30-12-1.9 through 30-12-1.15 of this Ordinance, then the Urban Forester is authorized to issue a stop work order to the utility.

(Amended by Ord. 13-73 on 6/18/13)

30-12-1.10 Annual Vegetation Management Plan

- A. Each utility company shall submit an annual vegetative management plan to the Urban Forester of the City on or before January 1st of each year prior to the start of any overhead utility vegetation maintenance activities within the City limits or upon any City-owned or controlled property, which vegetative management plan shall:
1. depict the general areas involved in the maintenance plan, and
 2. set forth the maintenance schedule for vegetation line maintenance within the City's limits.

If the vegetative management plan is timely submitted and the vegetative management plan sets forth the information required in this sub-section, then the vegetative management plan shall be accepted within 10 business days following the submission of it to the City.

- B. If a utility company desires to amend its vegetative management plan at any time during the year, the utility company shall submit an amended annual vegetative management plan to the Urban Forester of the City, which amended vegetative management plan shall:
1. depict the general areas involved in the maintenance plan, and
 2. set forth the maintenance schedule for vegetation line maintenance within the City's limits.

If the amended vegetative management plan sets forth the information required in this sub-section, then the amended vegetative management plan shall be accepted within 10 business days following the submission of it to the City.

C. Operational Plan

1. If a utility desires to perform vegetation maintenance within the City limits or upon any City-owned or controlled property, then the utility company shall obtain the acceptance of an operational plan before commencing any such desired vegetation maintenance. After the submission of an annual vegetative management plan, each utility company shall submit an operational plan to the Urban Forester of the City depicting in specific detail the circuits, locations, and timing involved in the line maintenance 60

days prior to commencement of work, unless a shorter period of time is mutually agreed upon by the City and the utility company. In connection with the submission of the operational plan to the Urban Forester of the City, it is required that there be a meeting between the utility company and the Urban Forester of the City for the purpose of reviewing the operational plan before it is accepted. If the operational plan is timely submitted, the aforementioned meeting occurs, and the operational plan sets forth specific detail required in this sub-section, then the operational plan shall be accepted within 10 business days following the submission of it to the City.

2. If a utility company desires to amend its operational plan at any time during the year, the utility company shall submit an amended operational plan to the Urban Forester of the City depicting in specific detail the circuits, locations, and timing involved in the line maintenance 60 days prior to commencement of work, unless a shorter period of time is mutually agreed upon by the City and the utility company. In connection with the submission of the amended operational plan to the Urban Forester of the City, it is required that there be a meeting between the utility company and the Urban Forester of the City for the purpose of reviewing the amended operational plan before it is accepted. If the amended operational plan is timely submitted, the aforementioned meeting occurs, and the amended operational plan sets forth specific detail required in this sub-section, then the amended operational plan shall be accepted within 10 business days following the submission of it to the City.

(Amended by Ord. 13-73 on 6/18/13)

30-12-1.11 Vegetation Management Communication

A. Communication Between City and Utilities

Each utility company shall communicate with the City regarding vegetation maintenance as required herein in connection with the annual vegetative maintenance plan, the operational plan, and the vegetation maintenance annual review.

B. Communication Between Communities and Utilities

1. Community Notification

The utility company shall notify the Greensboro Neighborhood Congress or comparable organization as identified by City staff, at least 45 days prior to the date vegetation maintenance is to commence. Said notice shall also include information on how to request a community information session if desired. The Neighborhood Congress of the City or comparable organization shall notify an applicable community, neighborhood association or homeowner's association, if any, to the extent one reasonably can be identified, which potentially might be impacted by the vegetation maintenance activity.

2. Community Information Session

The utility company shall make reasonable efforts to hold and attend any requested community information session in a reasonable location that shall be made available through the assistance of the City. The community information session shall occur at least 30 days prior to the date vegetation maintenance activities are to commence unless the timing of the request reasonably requires a shorter time period. A community information session may consist of information stations staffed by subject matter experts, and citizens may address comments or questions to those representatives of the utility company who are attending the community information session.

C. Communication Between Utilities and Owners or Residents of Occupied Property

1. Notification To Owners Or Residents Of Occupied Property

Prior to the performance of vegetation maintenance by a utility on Occupied Property, the utility shall make reasonable efforts to provide prior notification of such activities to the owner or resident of Occupied Property. In addition to the posting of information on the City of Greensboro's official website if the City elects to post information, such prior notification may include, but is not limited to, either of the following methods:

- a. door hangers; and
- b. automated outbound telephone calling.

Such prior notification shall be attempted at least 7 calendar days prior to the date that the vegetation maintenance is scheduled to commence, unless circumstances reasonably require a shorter time period.

2. Meeting With Owners Or Residents Of Occupied Property

If an owner or resident of Occupied Property requests a meeting with a utility regarding vegetation maintenance that is to occur on said property, then the utility shall make reasonable efforts to meet with the owner or resident of said property to discuss which trees will be impacted and which methods will be utilized by the utility in connection with the vegetation maintenance.

3. Provision of Authority

If an owner or resident of Occupied Property so requests, a utility subject to the jurisdiction of the North Carolina Utilities Commission shall provide a copy of written authority to perform vegetation maintenance on the property. Acceptable written authority may include, but not be limited to, pertinent service regulations on file with the North Carolina Utilities Commission.

(Amended by Ord. 13-73 on 6/18/13)

30-12-1.12 Vegetation Management Standards, Requirements and Prohibited Practices

A. Methods of Pruning, Trimming and Cutting; Prohibited Practices

- 1. To the extent the utility files a vegetative management plan with the North Carolina Utilities Commission, then the vegetative management plan, including the Old Design Urban Circuits, which was filed with the North Carolina Utilities Commission on April 30, 2013 as a supplement to its vegetative management plan, and any revisions to the vegetation management plan required by the North Carolina Utilities Commission shall constitute the standards to be adhered to by the utility when performing vegetation management activities within the City limits. The most recent utility vegetation management plan, including the Old Design Urban Circuits which was filed with the North Carolina Utilities Commission on April 30, 2013 as a supplement to its vegetative management plan filed with the North Carolina Utilities Commission, may be found by accessing the links below:

Utility's Vegetation Management Plan: <http://ncuc.commerce.state.nc.us/cgi-bin/webview/senddoc.pgm?dispfmt=&itype=Q&authorization=&parm2=CAAAA16221B&parm3=000138905>

Old Design Urban Circuits: <http://ncuc.commerce.state.nc.us/cgi-bin/webview/senddoc.pgm?dispfmt=&itype=Q&authorization=&parm2=LAAAA12131B&parm3=000138905>

The utility shall provide the City of Greensboro's City Attorney with notice of any proposed revision to its vegetative management plan, including the Old Design Urban Circuits, which was filed with the NCUC on April 30, 2013 as a supplement to its vegetative management plan, that would impact its distribution system at the same time that it files such proposed revision with the North Carolina Utilities Commission.

- 2. Regardless of whether a utility files a vegetative management plan with the North Carolina Utilities Commission, a utility shall comply with the following in connection with any vegetation maintenance within the City limits:
 - a. No obvious "hangers" shall be left in the trees after performing line clearance activities. The term hanger limb, as used herein, means a cut limb that is left in a tree after pruning operations are complete.

- b. Limbs shall be pruned back to an appropriate new leader, heading away or around the lines. In no circumstances are stubs or abruptly pruned limbs to be left by the pruning. The term leader, as used herein, means a dominant upright stem which is usually the main trunk of a tree.
- c. Utility companies shall use natural pruning which requires all cuts to be made at laterals (limb junctions). These lateral limbs shall be no less than one-third the diameter of the limb removed at the point of removal. The term lateral limb, as used herein, means a subordinate limb originating from a main branch or stem.
- d. For the removal of a limb the triple cut method shall be used if there is a possibility that the limb may tear out from the trunk if a single cut is made.
- e. When virulent disease is prevalent, as per written notification of the Urban Forester, the Urban Forester will work with the utility to develop a reasonable plan to properly prune or remove the subject tree. This plan will be designed to prevent the spread of disease as a result of line clearance activities.
- f. Under normal circumstances, no more than one-fourth of a tree's crown shall be removed per year. If reduction of more than one-fourth or 25 percent of a tree's crown is needed for safety and reliability clearances, or if the tree is otherwise a danger tree, the tree should be evaluated by the utility company for removal. The term danger tree, as it is used in 30-12-1.9 through 30-12-1.15 of this Ordinance, means a tree that has the potential of adversely impacting utility service by falling into a utility line as a result of being cut, blown into, or otherwise falling, by virtue of its physical condition.
- g. The use of "tree paint", "wound dressing", and the like is not recommended.
- h. Climbing irons, spurs, or spikes are not to be used unless in accordance with the ANSI A300 standard.
- i. Topping and rounding over of trees is prohibited.
- j. Vegetation maintenance shall be done using the "ANSI A300 method" (part 1) BMP manual compiled by the International Society of Arboriculture, and subsequent revisions.

B. Determinations by Utility Companies That a Tree Is To Be Removed; Appeal Process

- 1. Nothing in this subsection shall be construed to preclude, prevent, or impair any property owner, resident, the City or utility from pursuing its legal remedies before the North Carolina Utilities Commission or from requesting the assistance of the Public Staff of the North Carolina Utilities Commission formally or informally at any time pursuant to the procedures set forth by those agencies.
- 2. If a utility company determines that a tree must be removed in its entirety from Occupied Maintained Property within the City limits, then the utility company shall make reasonable efforts to seek the consent of the owner or resident of the Occupied Maintained Property. Reasonable efforts by a utility company to seek the consent of the owner or resident of the Occupied Maintained Property may include any of the following, without limitation:
 - a. a request for consent to remove a tree set forth on a door hanger;
 - b. a request for consent to remove a tree made in a communication with said owner or resident;
 - c. a request for consent to remove a tree set forth in a message left on the answering machine or voicemail of said owner or resident;
 - d. a request for consent to remove a tree set forth in a letter served by mail to said owner or resident;
 - e. a request for consent to remove a tree made during a meeting with said owner or resident on the affected property; or

- f. a request for consent to remove a tree served by email to said owner or resident.

If an owner or resident of Occupied Maintained Property expresses verbally or in writing to the utility company that said owner or resident does not consent to the tree removal intended by the utility company, then the utility company shall not remove the subject tree unless permitted to do so by the Urban Forester or the North Carolina Utilities Commission or through resolution of the matter through the involvement of the Consumer Services Division of the Public Staff of the North Carolina Utilities Commission, as provided for herein below.

3. If:

- a. an owner or resident of the Occupied Maintained Property expresses in writing or verbally that said owner or resident does not consent to removal of the tree desired to be removed by the utility company, or
- b. said owner or resident fails to express verbally or in writing a position with respect to consent within 5 business days of when the utility company first made its reasonable efforts to seek consent, unless a shorter time is reasonably necessary in light of the immediate danger and/or interference to the overhead utility lines posed by the subject tree; then, in either situation, the utility company may request that the Urban Forester issue a written determination as to whether a tree in dispute on public or private property shall be removed, and the following shall govern the process and determination by the Urban Forester:
 - i. The Urban Forester shall rule that the tree in dispute shall be removed if the Urban Forester determines that the tree is a danger tree as defined above in [30-12-1.12\(A\) 2\) e](#)).
 - ii. The utility company shall serve a written request for determination to the Urban Forester (the "Written Request for Determination to the Urban Forester"), which Written Request for Determination to the Urban Forester may be a letter or email addressed to the Urban Forester, and which written request for determination shall include at least the following:
 - a. The address of the property where the tree in dispute is located;
 - b. A reasonable identification of the tree in dispute;
 - c. The approximate date that the utility company communicated to the owner or resident of the Occupied Maintained Property that the tree had been determined to be required to be removed;
 - d. The approximate date that the owner or resident of the Occupied Maintained Property communicated that consent for removal was not being provided, if any such request was provided.
 - iii. Within 5 business days of the request by the utility company, unless a shorter time is reasonably necessary in light of the immediate danger and/or interference to the overhead utility lines posed by the subject tree, the Urban Forester shall conduct a meeting with the owner or resident of the Occupied Maintained Property and utility company at the property where the tree in dispute is located. The date and time of the meeting shall be determined by and communicated by the Urban Forester by telephone or by written notice served by mail, email or hand-delivery. At the meeting, the utility company may explain why the tree in dispute should be removed and the owner or the resident of the Occupied Maintained Property may explain why the tree should not be removed.
 - iv. Regardless of when a meeting is conducted or whether a meeting actually is conducted, the Urban Forester shall make a written determination of whether the tree in dispute shall be removed within 5 business days of service of the initial Written Request for Determination to the Urban Forester (the "5 Day Deadline for the Urban Forester to Make a Determination").

- v. A written determination by the Urban Forester (the "Written Determination of the Urban Forester"), setting forth the basis for his decision, shall be served by mail, email or hand-delivery to the owner or resident of the Occupied Maintained Property and the utility company, and the Written Determination of the Urban Forester shall include at least the following:
 - a. The address of the property where the tree in dispute is located;
 - b. A reasonable description of the tree in dispute;
 - c. The names of the owner or resident of the Occupied Maintained Property and the utility company involved in the tree removal dispute;
 - d. The date of the meeting at the property. If a meeting was not conducted, then the Urban Forester shall briefly explain why a meeting was not conducted.
 - e. A written statement that the tree in dispute shall or shall not be removed.
 - f. If an owner or resident of the Occupied Maintained Property or a utility company desires to appeal the Written Determination of the Urban Forester, then the appealing party may file a formal complaint with the North Carolina Utilities Commission pursuant to [G.S. §62-73](#) or [G.S. §62-74](#). Complaints to the North Carolina Utilities Commission may be addressed to the Chief Clerk, North Carolina Utilities Commission, 4325 Mail Service Center, Raleigh, NC 27699-4325. Prior to filing a formal complaint with the North Carolina Utilities Commission, said party may request informal resolution of the issue through the involvement of the Consumer Services Division of the Public Staff of the North Carolina Utilities Commission. If said owner or resident appealing an adverse Written Determination of the Urban Forester does not file said formal complaint with the North Carolina Utilities Commission or, in the alternative, request informal resolution of the issue through the involvement of the Public Staff of the North Carolina Utilities Commission within 7 business days of service of the Written Determination of the Urban Forester, the utility may proceed to remove the tree in question.
 - g. If a party opts to request informal resolution of the issue through the involvement of the Public Staff of the North Carolina Utilities Commission, such request shall be served on the Consumer Services Division of the Public Staff of the North Carolina Utilities Commission and the adverse party (i.e., the utility company or the property owner) within 7 business days of the service of the Written Determination of the Urban Forester. Service on the Consumer Services Division of the Public Staff of the North Carolina Utilities Commission may be made by using any of the following: the mailing address of Public Staff, Consumer Services Division, 4326 Mail Service Center, Raleigh, North Carolina 27699; the fax number of (919) 733-4744; or the email address of consumer.services@psncuc.nc.gov. The request for informal resolution to the Consumer Services Division of the Public Staff of the North Carolina Utilities Commission shall include at least the following:
 - 1. A clear statement that the appealing party is seeking review by and assistance from the Public Staff of the North Carolina Utilities Commission with respect to the Written Determination of the Urban Forester.
 - 2. A copy of the Written Determination of the Urban Forester.
 - 3. Contact information for the party sending the Written Appeal to the Public Staff of the North Carolina Utilities Commission (name, address, telephone number, email if available).
 - h. If the involvement of the Consumer Services Division of the Public Staff of the North Carolina Utilities Commission does not result in resolution of the issue in a manner that is satisfactory to the owner, resident, or utility, then said party may file a formal complaint with the North Carolina Utilities Commission pursuant [G.S. § 62-73](#) or [G.S. § 62-74](#) and the

North Carolina Utilities Commission's rules and regulations. If said complaint is not filed at the North Carolina Utilities Commission within 7 business days of the conclusion of the Public Staff's involvement, the utility may proceed to remove the tree in question.

- i. If the utility company desires to appeal the failure of the Urban Forester to rule within the 5 Day Deadline for the Urban Forester to Make a Determination, then the utility may file an expedited, formal complaint to the North Carolina Utilities Commission pursuant to [G.S. § 62-74](#).
- j. With respect to all written documents served in this [30-12-1.12\(B\)](#):
 1. In addition to service upon the Urban Forester, the North Carolina Utilities Commission, or the Consumer Services Division of the Public Staff of the North Carolina Utilities Commission, when applicable, service of said written documents shall be contemporaneously made upon the adverse party (i.e., the owner or resident of the Occupied Maintained Property or the utility company).
 2. Service by mail of a written document shall be complete upon deposit of the paper enclosed in a post-paid, properly addressed wrapper in a post office or official depository under the exclusive care and custody of the United States Postal Service.
 3. Service by email of a written document shall be complete upon the act of sending the electronic correspondence to a proper address regularly used by the recipient of the electronic correspondence.
 4. Service by fax shall be complete upon the sending of a written document to the intended recipient by a confirmed fax transmission to a proper fax number regularly used by the recipient of the fax transmission, as further evidenced by a fax receipt confirmation.
 5. Service by hand-delivery of the written document shall be complete upon handing it to the following when applicable:
 1. The owner or resident of the Occupied Maintained Property;
 2. A representative of the utility company who is involved in the subject tree dispute;
 3. The Urban Forester.

(Amended by Ord. 13-73 on 6/18/13)

30-12-1.13 Supervision and Oversight of Contractors

Any utility company desiring to engage in vegetation maintenance operations on public streets or rights-of-way, City-owned or controlled property, and private property within the City limits shall be responsible for oversight of its contractors in the performance of all work and will ensure that contractors adhere to ordinance provisions and proper vegetation maintenance practices. As part of the Operational Plan, the utility will identify a certified arborist for each project who will be involved in the oversight of the crews and serve as a primary contact to the Urban Forester and owner or resident of Occupied Property.

(Amended by Ord. 13-73 on 6/18/13)

30-12-1.14 Vegetation Management Clean-Up

- A. All debris from vegetation maintenance shall be cleaned up each day, or within a reasonable amount of time, as described below, unless permission is given by the Urban Forester or owner or resident of the Occupied Property to do otherwise. The clean-up required by this sub-section includes the following:
 1. Impacted lawn areas shall be cleaned of debris.

2. Impacted streets and sidewalks shall be cleaned of debris.
3. All brush (having a diameter of 6 inches or less), branches and logs shall be dealt with as follows:
 - a. In landscaped and maintained areas, brush shall be chipped and removed from the site. When feasible and agreed to by the owner or resident of the Occupied Maintained Property and the utility company, this brush may be blown into an area either within the right of way or adjacent to the right of way corridor. Larger wood, which belongs to the owner or resident of the Occupied Maintained Property, shall be cut into manageable lengths and stacked neatly at the base of the tree. Provided, however, wood or brush cut down from dead or dying trees shall be stacked neatly at the base of the tree, and there is no requirement that such brush be chipped due to safety concerns.
 - b. In non-maintained areas, trees and limbs shall be cut, left on site, and windrowed along the edge of the right of way. Brush shall be brush hogged when the site and terrain reasonably allows for it. If the terrain does not reasonably allow the use of mechanized equipment, the trees and limbs may be manually hashed down and left to bio-degrade naturally.
- B. If an owner or resident of Occupied Maintained Property requests information on options for grinding any stumps resulting from vegetation maintenance operations, it shall be the responsibility of the utility to provide owner or resident of the Occupied Maintained Property with such information.

(Amended by Ord. 13-73 on 6/18/13)

30-12-1.15 Vegetation Management Annual Review

In January of each calendar year, each utility that conducted vegetation management activities during the prior calendar year shall meet with Urban Forester in order to review the tree pruning, trimming and cutting that had been conducted and to discuss each of the following:

- A. the challenges and problems experienced by the City of Greensboro;
- B. the challenges and problems experienced by the utility;
- C. the successes experienced by the City of Greensboro;
- D. the successes experienced by the utility; and
- E. what the City of Greensboro and the utility can try to do differently in an effort to enhance future communication, execution of future tree pruning, trimming and cutting and opportunities to continue to promote the enhancement of the urban tree canopy.

(Amended by Ord. 13-73 on 6/18/13)

30-12-2 Flood Damage Prevention

30-12-2.1 General

A. Authority

The Legislature of the State of North Carolina has in [NCGS Part 6, Article 21 of Chapter 143](#); [NCGS Parts 3, 5, and 8 of Article 19 of Chapter 160A](#), and [NCGS Article 8 of 160A](#) delegated to local governmental units the responsibility to adopt regulations designed to promote the public health, safety, and general welfare.

B. Purposes

The flood damage prevention regulations, adopted and prescribed in this section, are found by the City Council to be necessary and appropriate to:

1. permit only that development within the floodplain which is appropriate in light of the probability of flood damage and which represents a reasonable social and economic use of land in relation to the hazards involved; and
2. minimize public and private losses due to flood conditions within flood prone areas by enactment of provisions designed to:
3. restrict or prohibit uses which are dangerous to health, safety, and property due to water or erosion hazards or which result in damaging increases in erosion or in flood heights or velocities;
4. require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;
5. control the alteration of natural floodplains, stream channels, and natural protective barriers which are involved in the accommodation of floodwaters;
6. control filling, grading, dredging, and all other development which may increase erosion or flood damage;
7. prevent or regulate the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards to other lands;
8. protect human life and health;
9. minimize expenditure of public money for costly flood control projects;
10. minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
11. minimize prolonged business losses and interruptions;
12. minimize damage to public facilities and utilities such as water, sewer, gas, electric, cable and telephone lines, trails, boardwalks, streets, and bridges located in flood prone areas;
13. help maintain a stable tax base by providing for the sound use and development of flood-prone areas;
14. permit and encourage the retention of open land uses that will be so located and designed as to constitute a harmonious and appropriate part of the physical development of the community and that will not impede the flow of floodwaters; and
15. ensure that potential buyers are aware that property is in a special flood hazard area or future conditions flood hazard area.

C. Reason for Regulation of Flood Prone Areas

The flood prone areas of the city are subject to periodic inundation that could result in loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety, and general welfare.

D. Causes of Flood Losses

Flood losses are caused by the cumulative effect of:

1. obstructions in floodplains causing increases in flood heights and velocities; and
2. occupancy in flood prone areas of uses vulnerable to floods or other hazards.

E. Applicability

The flood damage prevention regulations of this section apply to all areas of special flood hazard and future conditions flood hazard areas within the city and its extra-territorial jurisdiction.

F. Basis for Establishing the Areas of Special Flood Hazard and Future Conditions Flood Hazard Areas

The special flood hazard areas and future conditions flood hazard areas are those identified under the Cooperating Technical state agreement between the State of North Carolina and FEMA in its flood

insurance study (FIS) and its accompanying Flood Insurance Rate Maps (FIRM), for Guilford County dated June 18, 2007, which are adopted by reference and declared to be a part of these regulations.

G. Permits and Certificates

1. Application for Permit

Application for a floodplain development permit must be made in accordance with [30-4-26.6](#).

2. Certificate of Floor Elevation/Floodproofing

When a property is located in a special flood hazard area or when a structure is floodproofed, a certificate must be provided in accordance with [30-4-26.10](#).

H. Notification, Remedies and Penalties For Violations

When a violation of any provision of this section is discovered by the Planning and Community Development Director, notification to the owner or occupant of the land, building, structure, sign, or use of the violation shall be made in accordance with [30-5-3](#). Any or all of the remedies listed in [30-5-4](#) may be used to enforce the provisions of this section. Additionally, any person who violates any provision of this section shall be subject to the assessment of a civil penalty under the procedures provided in [@@71].

I. Warning and Disclaimer of Liability

The degree of flood protection required by these regulations is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Larger floods can and will occur. Actual flood heights may be increased by manmade or natural causes. The establishment of these regulations is not intended to indicate or imply that land outside the areas of special flood hazard and future conditions flood hazard areas, or uses permitted within such areas, will be free from flooding or flood damage. These regulations shall not create liability on the part of the city or any officer or employee thereof for any flood damages that results from reliance on the flood prevention regulations of this section or any administrative decision lawfully made hereunder.

30-12-2.2 Permitted and Prohibited Structures and Activities

Areas designated as floodways or non-encroachment areas are located within the special flood hazard areas established in [30-12-2.1\(F\)](#). The floodways and non-encroachment areas are extremely hazardous areas due to the velocity of floodwaters that carry debris and potential projectiles and have erosion potential. The following provisions, in addition to standards outlined in [30-12-2.3\(A\)](#) and [30-12-2.3\(B\)](#) shall apply to all development within such areas:

- A. No encroachments, including but not limited to, fill, new construction, substantial improvements, and other developments shall be permitted unless it has been demonstrated that:
 1. The proposed encroachments will not result in any increase in flood levels during occurrence of the base flood, based on hydrologic and hydraulic analyses performed in accordance with standard engineering practice and presented to the Water Resources Director prior to issuance of a floodplain development permit, or
 2. A Conditional Letter of Map Revision (CLOMR) has been approved by FEMA. A Letter of Map Revision (LOMR) must also be obtained upon completion of the proposed encroachment.
- B. If subsection (A) (immediately above) is satisfied, all development must comply with all applicable flood hazard reduction provisions of this section.
- C. No manufactured homes shall be permitted, except replacement manufactured homes in an existing manufactured dwelling park or subdivision, provided the following provisions are met:
 1. The anchoring and the elevation standards of [30-12-2.3\(B\)3](#)); and
 2. The no encroachment standard of subsection (A), above is satisfied.

30-12-2.3 Provisions for Flood Hazard Reduction

A. General Standards

In all areas of special flood hazard and future conditions flood hazard areas the following provisions are required:

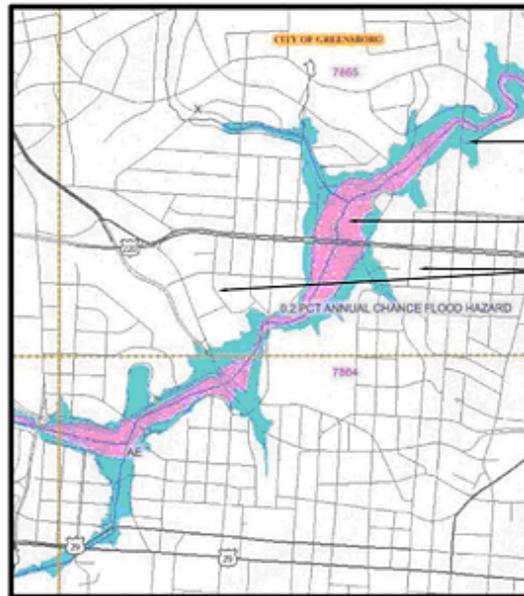
1. All new construction and substantial improvements shall be designed (or modified) and adequately anchored to prevent flotation, collapse, and lateral movement of the structure;
2. All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage;
3. All new construction and substantial improvements shall be constructed by methods and practices that minimize flood damages;
4. Electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities shall be designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding. These include, but are not limited to, HVAC equipment, water softener units, bath/kitchen fixtures, ductwork, electric/gas meter panels/boxes, utility/cable boxes, hot water heaters, and electric outlets/switches;
5. All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of floodwaters into the system;
6. New and replacement sanitary sewerage systems shall be designed to minimize or eliminate infiltration of floodwaters into the systems and discharges from the systems into flood waters;
7. On-site waste disposal systems shall be located and constructed to avoid impairment to them or contamination from them during flooding;
8. Any alteration, repair, reconstruction, or improvements to a structure that is in compliance with the provisions of the flood prevention regulations of this section shall meet the requirement of "new construction" as contained in this section;
9. Nothing in this section shall prevent the repair, reconstruction, or replacement of a building or structure existing on the effective date of the flood prevention regulations of this section and located totally or partially within the floodway, non-encroachment area, or stream setback, provided there is no additional encroachment below the regulatory flood protection elevation in the floodway, non-encroachment area, or stream setback, and provided that such repair, reconstruction, or replacement meets all of the other requirements of the flood prevention regulations of this section.
10. New solid waste disposal facilities and sites, hazardous waste management facilities, salvage yards, and chemical storage facilities shall not be permitted, except by variance as specified in [30-4-13.6](#). A structure or tank for chemical or fuel storage incidental to an allowed use or to the operation of a water treatment plant or wastewater treatment facility may be located in a special flood hazard area or future conditions flood hazard area only if the structure or tank is either elevated or floodproofed to at least the regulatory flood protection elevation and certified according to [30-4-26.10](#).
11. All subdivision plats and other development plans shall be consistent with the need to minimize flood damage.
12. All subdivision plats and other development plans shall have public utilities and facilities such as sewer, gas, electrical, and water systems located and constructed to minimize flood damage.
13. All subdivision plats and other development plans shall have adequate drainage provided to reduce exposure to flood hazards.
14. All subdivision plats and other development plans shall have received all necessary permits from those governmental agencies for which approval is required by federal or state law, including Section 404 of

the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1334 prior to land disturbance.

15. When a structure is partially located in a special flood hazard area, the entire structure shall meet the requirements for new construction and substantial improvements.
16. When a structure is located in multiple flood hazard risk zones or in a flood hazard risk zone with multiple base flood elevations, the provisions for the most restrictive flood hazard risk zone and the highest base flood elevation shall apply.

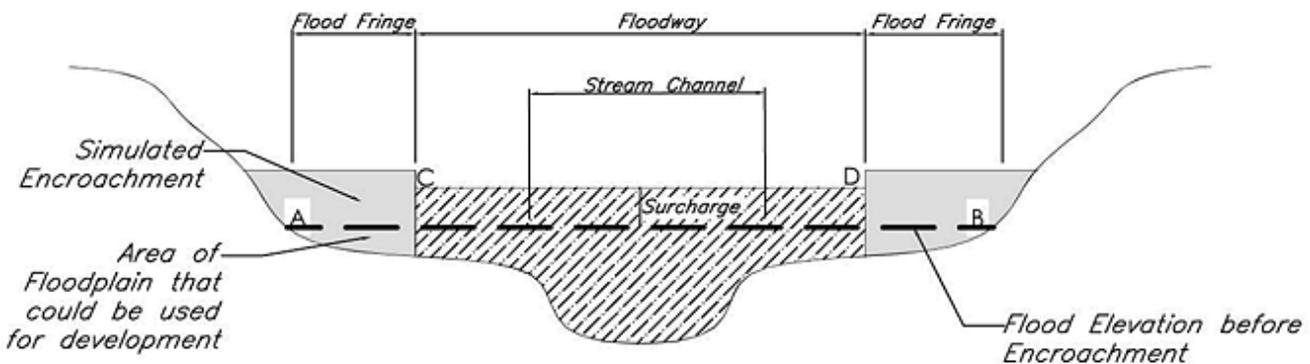
Figure 12-3, Flood Hazard

Flood Hazard



- Zone AE - 1% Chance Flood Boundary
- Floodway Boundary
- Zone X - 0.2% Chance Flood Boundary

*No structures or filling permitted in the floodway.
Structures located in the 1% chance flood boundary must have their lowest floor elevated to the regulatory flood protection elevation.
The area located within the 1% annual chance future conditions flood hazard area is regulated by the Flood Damage Prevention Section of the Ordinance.*



- Line A-B=Flood Elevation Before Encroachment
- Line C-D=Flood Elevation After Encroachment
- Surcharge not to exceed 1.0 foot (FEMA Requirement)

B. Specific Standards

In all areas of special flood hazard where base flood elevation (BFE) data has been provided and in future conditions flood hazard areas where future conditions flood elevations data has been provided, as set forth in 30-12-2.1(F) or 30-12-2.3(C)2)b) the following provisions, in addition to 30-12-2.3(A), are required:

1. Residential Construction

New construction and substantial improvement of any residential structure shall have the reference level, including basement, elevated no lower than the regulatory flood protection elevation. Should solid foundation perimeter walls be used to elevate a structure, openings sufficient to facilitate the automatic equalization of hydrostatic forces on both sides of the walls of enclosures below the lowest floor shall be provided.

2. Nonresidential Construction

New construction and substantial improvement of any commercial, industrial, or other nonresidential structure shall have the reference level, including basement, elevated no lower than the regulatory flood protection elevation. Structures located in A, AE, AO, AH, A1-A30, and X (Future) zones may be floodproofed to the regulatory flood protection elevation in lieu of elevation provided that all areas of the structure, together with attendant utility and sanitary facilities, below the regulatory flood protection elevation are water tight with walls substantially impermeable to the passage of water, using structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effect of buoyancy. For AO Zones, the floodproofing elevation shall be in accordance with 30-12-2.3(E)2). A registered professional engineer or architect shall certify that the standards of this subsection are satisfied. Such certification shall be provided to the Water Resources Director as set forth in [30-4-26.10](#) along with the operational and maintenance plans.

3. Manufactured Dwellings

- a. New and replacement manufactured dwellings shall be elevated on a permanent foundation such that the reference level of the manufactured dwelling is elevated no lower than the regulatory flood protection elevation and shall be securely anchored to an adequately anchored foundation to resist flotation, collapse, and lateral movement, either by engineer certification, or in accordance with the most current edition of the State of North Carolina Regulations for Manufactured Homes adopted by the Commissioner of Insurance pursuant to [NCGS §143-143.15](#).
- b. When the required elevation will be met by elevating the chassis 36 inches or less above grade, the chassis shall be supported by reinforced piers or engineered foundation. When the elevation of the chassis is more than 36 inches in height, engineering certification is required.
- c. All enclosures or skirting below the lowest floor shall meet the requirements of 30-12-2.3(B)5)a), 30-12-2.3(B)5)b) and 30-12-2.3(B)5)c).
- d. An evacuation plan shall be prepared for evacuation of all residents of all new, substantially improved, and substantially damaged manufactured dwelling parks or subdivisions located within flood prone areas. This plan shall be filed with and approved by the Water Resources Director and the local Emergency Management Coordinator.

4. Recreational Vehicles

A recreational vehicle is ready for highway use if it is on wheels or jacking system, is attached to the site only by quick-disconnect type utilities and security devices, and has no permanently attached additions. Recreational vehicles placed on sites shall either:

- a. Be in the recreational vehicle park for fewer than 180 consecutive days and be fully licensed and ready for highway use; or
- b. Meet the requirements of [30-4-26.6](#), Floodplain Development Application, Permit and Certification requirements; 30-12-2.3(A), General Standards, and 30-12-2.3(B)3), just as if the recreational vehicle were a manufactured dwelling.

5. Elevated Buildings

Fully enclosed area, other than a basement, of new construction and substantially improved structures that is below the lowest floor and is subject to flooding:

- a. Shall not be designed or used for human habitation, but shall only be used for the parking of vehicles, building access, or limited storage of maintenance equipment used in connection with the premises. Access to the enclosed area shall be the minimum necessary to allow for parking of vehicles (garage door) or limited storage of maintenance equipment used in connection with the premises (standard exterior door) or entry to the living area (stairway or elevator). The interior portion of such enclosed area shall not be finished or partitioned into separate rooms, except to enclose storage areas;
- b. Shall be constructed entirely of flood resistant materials below the regulatory flood protection elevation; and
- c. Shall include in Zones A, AO, AE, AH, A1-A30, and X (Future) flood openings to automatically equalize hydrostatic flood forces on walls by allowing for the entry and exit of floodwaters. Designs for complying with this requirement must be either certified by a registered professional engineer or architect or meet or exceed the following minimum criteria:
 - i. Provide a minimum of 2 flood openings on different sides of each enclosed area subject to flooding having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding;
 - ii. If a building has more than one enclosed area, each enclosed area must have flood openings to allow floodwaters to automatically enter and exit;
 - iii. The bottom of all required flood openings shall be no higher than one foot above the adjacent grade;
 - iv. Flood openings may be equipped with screens, louvers, or other coverings or devices provided they permit the automatic flow of floodwaters in both directions; and
 - v. Enclosures made of flexible skirting are not considered enclosures for regulatory purposes, and, therefore, do not require flood openings. Masonry or wood underpinning, regardless of structural status, is considered an enclosure and requires flood openings in accordance with 30-12-2.3(B)5a), 30-12-2.3(B)5b) and 30-12-2.3(B)5c).

6. Additions/Improvements

- a. Where the additions and/or improvements to pre-FIRM structures, in combination with any interior modifications to the existing structure are not a substantial improvement, the additions and/or improvements shall be designed to minimize flood damages and must not be any more nonconforming than the existing structure.
- b. Where the additions and/or improvements to pre-FIRM structures, in combination with any interior modifications to the existing structure are a substantial improvement, the additions and/or improvements, for both the existing structure and the addition and/or improvements must comply with the standards for new construction.
- c. Additions to post-FIRM structures with no modifications to the existing structure other than a standard door in the common wall shall require only the addition to comply with the standards for new construction.
- d. Where the addition and/or improvements to post-FIRM structures, in combination with any interior modifications to the existing structure are not a substantial improvement, only the addition shall comply with the standards for new construction.
- e. Where the addition and/or improvements to post-FIRM structures, in combination with any interior modifications to the existing structure are a substantial improvement, both the existing structure and the addition and/or improvements must comply with the standards for new construction.

7. Temporary Nonresidential Structures

Prior to the issuance of a floodplain development permit for a temporary structure, the applicant must submit to the Floodplain Administrator a plan for the removal of such structure(s) in the event of a hurricane, flash flood or other type of flood warning notification. The following information shall be submitted in writing to the Floodplain Administrator for review and written approval:

- a. A specified time period for which the temporary use will be permitted. Time specified may not exceed 3 months, renewable up to one year;
- b. The name, address, and phone number of the individual responsible for the removal of the temporary structure;
- c. The time frame prior to the event at which a structure will be removed (i.e., minimum of 72 hours before landfall of a hurricane or immediately upon flood warning notification);
- d. A copy of the contract or other suitable instrument with the entity responsible for physical removal of the structure; and
- e. Designation, accompanied by documentation, of a location outside the special flood hazard area or future conditions flood hazard area, to which the temporary structure will be moved.

8. **Accessory Structures**

An accessory structure with a footprint less than 150 square feet that satisfies the criteria outlined below does not require an elevation or floodproofing certificate. Elevation or floodproofing certifications are required for all other accessory structures in accordance with [30-4-26.10](#). When accessory structures (sheds, detached garages, etc.) are to be placed within a special flood hazard area or future conditions flood hazard area, the following criteria shall be met:

- a. Accessory structures shall not be used for human habitation (including working, sleeping, living, cooking or restroom areas);
- b. Accessory structures shall not be temperature-controlled;
- c. Accessory structures shall be designed to have low flood damage potential;
- d. Accessory structures shall be constructed and placed on the building site so as to offer the minimum resistance to the flow of floodwaters;
- e. Accessory structures shall be firmly anchored in accordance with [30-12-2.3\(A\)1](#));
- f. All service facilities such as electrical shall be installed in accordance with [30-12-2.3\(A\)4](#)); and
- g. Flood openings to facilitate automatic equalization of hydrostatic flood forces shall be provided in conformance with [30-12-2.3\(B\)5c](#))

C. **Standards for Floodplains without Established Base Flood Elevations**

1. Within the areas of special flood hazard designated as Approximate Zone A and established in [30-12-2.1\(F\)](#) where no base flood elevation (BFE) data has been provided by FEMA, the following provisions, in addition to [30-12-2.3\(A\)](#) apply within such areas for all new construction and substantial improvements:
2. No encroachment, including fill, new construction, substantial improvements, or new development shall be permitted within a distance of 30 feet each side from the top of the stream bank or 5 times the width of the stream, whichever is greater, unless certification (with supporting technical data) by a registered professional engineer is provided demonstrating that such encroachments shall not result in any increase in flood levels during the occurrence of the base flood discharge.
3. The base flood elevation (BFE) used in determining the regulatory flood protection elevation shall be determined based on the following:
 - a. All subdivision, manufactured dwelling site and other development proposals shall provide base flood elevation (BFE) data if development is greater than 5 acres or has more than 50

lots/manufactured dwelling sites. Such base flood elevation (BFE) data shall be adopted by reference per 30-12-2.1(F) to be utilized in implementing this section.

- b. When base flood elevation (BFE) data is available from other sources, all new construction and substantial improvements within such areas shall comply with the provisions of 30-12-2.3(B) for elevation (or floodproofing of nonresidential structures) and non-elevation design requirements as well as certification requirements.
 - c. When base flood elevation data is not available from a federal, state, or other source as outlined in 30-12-2.3(C)2b), the reference level shall be elevated no lower than the regulatory flood protection elevation. All non elevation design and certification requirements of 30-12-2.3(B) shall also apply.
4. When floodway or no encroachment area data is available from other sources, in addition to the base flood elevation data, from other sources, all new construction and substantial improvements within such areas shall comply with the provisions of 30-12-2.2(A) for encroachment requirements as well as those of 30-12-2.3(B) for elevation (or floodproofing of nonresidential structures) and non-elevation design requirements as well as certification requirements for both.

D. Standards for Riverine Floodplains with BFE but without Established Floodways or Non-Encroachment Areas

Along rivers and streams where BFE data is provided but neither floodway nor non-encroachment areas are identified for a special flood hazard area on the FIRM or in the FIS report, the following requirements shall apply to all development within such areas:

1. Standards outlined in 30-12-2.3(A) and 30-12-2.3(B); and
2. Until a regulatory floodway or non-encroachment area is designated, no encroachments, including fill, new construction, substantial improvements, or other development, shall be permitted unless certification with supporting technical data by a registered professional engineer is provided demonstrating that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community.

E. Standards for Areas of Shallow Flooding (AO Zones)

Located within the areas of special flood hazard established in 30-12-2.1(F) are areas designated as shallow flooding areas. These areas have special flood hazards associated with base flood depths of one to 3 feet where a clearly defined channel does not exist and where the path of flooding is unpredictable and indeterminate. In addition to 30-12-2.3(A), all new construction and substantial improvement, shall meet the following requirements:

1. The reference level shall be elevated at least as high as the depth number specified on the Flood Insurance Rate Map (FIRM), in feet, plus a freeboard of one foot above the highest adjacent grade. If no depth number is specified, reference level shall be elevated at least 2 feet above the highest adjacent grade plus a freeboard of one foot.
2. All new construction and substantial improvements of nonresidential structures shall:
 - a. Have the reference level elevated at least as high as the depth number specified on the Flood Insurance Rate Map (FIRM), in feet, plus a freeboard of one foot above the highest adjacent grade. If no depth number is specified, reference level shall be elevated at least 2 feet above the highest adjacent grade plus a freeboard of one foot; or
 - b. Be completely floodproofed, together with attendant utility and sanitary facilities, to or above that level required in 30-12-2.3(E)2a) so that the structure below that level is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy. Certification is required as per 30-4-26.10 and 30-12-2.3(B)2).

F. Standards for Intermittent and Perennial Streams Without Established Special Flood Hazard Areas

Along intermittent and perennial streams where no special flood hazard area has been identified on the FIRM or in the FIS report, the following provisions shall apply to all development within such areas:

1. Except for streets, bridges, and utilities, no encroachments shall be permitted in drainage maintenance and utility easements as required by the subdivision standards of [Article 13](#) unless granted an easement release. Except for streets, bridges, and utilities, no encroachment, including fill, new construction, substantial improvements, or new development shall be permitted within a distance of 30 feet each side from the top of the stream bank or 5 times the width of the stream, whichever is greater, unless certification with supporting technical data by a registered professional engineer is provided demonstrating the impact of such encroachments on flood levels during the occurrence of the base flood discharge. The degree of such impact shall be reviewed and subject to approval by the Water Resources Director prior to the commencement of any development activities.
2. If base flood elevation data is available from other sources, all new construction and substantial improvements within such areas shall comply with all applicable flood hazard area provisions of this section and shall have the lowest floor, including basement and attendant mechanical equipment, elevated or floodproofed to the base flood elevation plus one foot of freeboard. Elevation or floodproofing certification is required in accordance with [30-4-26.10](#) if the lowest adjacent grade to the structure is less than 5 feet above the base flood elevation. All non elevation design and certification requirements of [30-12-2.3\(B\)](#) shall also apply.
3. When base flood elevation data is not available from a federal, state, or other source, the base flood elevation shall be calculated by a registered professional engineer, in accordance with standard engineering practice and direction from the city. All new construction and substantial improvements within such areas shall comply with all applicable flood hazard area provisions of this section. The lowest floor, including basement and attendant mechanical equipment, shall be elevated or floodproofed to the higher of the base flood elevation plus one foot of freeboard or 2 feet above the highest adjacent grade. Prior to issuance of a certificate of occupancy, elevation or floodproofing certification is required in accordance with [30-4-26.10](#) if the lowest adjacent grade to the structure is less than 5 feet above the base flood elevation. All non elevation design and certification requirements of [30-12-2.3\(B\)](#) shall also apply.

30-12-2.4 Amendments to the Flood Insurance Rate Map

A. Grounds for Revisions and Amendments

The location of any floodway or area of special flood hazard may be amended by FEMA in cases where:

1. A flood control project of the federal, state, county, or city government has substantially altered the flood hazard; or
2. Flood data indicates that the boundaries as shown on the Flood Insurance Rate Map are no longer correct; or
3. A private individual, corporation, firm, or governmental agency has submitted plans to the appropriate local authority, state agencies, and the Federal Emergency Management Agency for a channel improvement or relocation, street or bridge that would affect the location of the existing flood zone boundaries as shown on the Flood Insurance Rate Map.

B. No Impact Certification

A "No Impact Certification" approved by the city, including the required review fee, shall be evidence that a conditional FIRM revision is not required for the development covered by the certification.

C. Revision as a Prerequisite

Approval from FEMA of a Flood Insurance Rate Map amendment is a prerequisite for a Floodplain Development Permit in the situations described below. The permit applicant must prepare and submit the FIRM revision package, including the required review fees, to the city upon completion of the development.

1. Whenever a proposed channel improvement or relocation will occur;
2. Any fill or development activity is proposed in a special flood hazard area without an established floodway or non-encroachment area that results in an increase in the base flood elevation more than one foot in accordance with 30-12-2.3(D)2); and
3. Encroachment into a regulatory floodway or non-encroachment area that results in any increase in the water surface elevation in accordance with 30-12-2.2(A).

30-12-3 Water Supply Watershed and Other Watershed Districts

30-12-3.1 District Descriptions

Two overlay districts cover designated water supply watersheds. They are the Watershed Critical Area (WCA) and the General Watershed Area (GWA). The WCA covers 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. WCA outer boundaries are at least one-half mile from the normal pool elevation of an existing or proposed designated reservoir. The GWA covers the rest of the watershed draining to the reservoir or intake. The remaining areas within the city's jurisdiction are hereby referred to as *Other Watershed Districts*.

(Amended by Ord. 10-161 on 12/1/10)

30-12-3.2 Purpose and Intent

A. General Intent

The watershed protection regulations, adopted and prescribed in this ordinance, to protect the public health are found by the City Council to be necessary and appropriate to:

1. Protect stream buffers, water supply watersheds and other watersheds from activities that could degrade water quality in the reservoirs and streams;
2. Reduce the volume of nutrients and other chemicals that could enter streams and the water supply by reducing the amount of runoff that any given development will generate;
3. Minimize land disturbance to reduce the amount of sediment washing into streams and lakes and to enhance the infiltration of runoff into soils, thus alleviating the sedimentation of water supply lakes that reduces their storage capacity, shortens their useful life, and makes them less able to withstand drought;
4. Reduce the probability of the release of harmful chemicals into streams and water supply reservoirs, either through natural catastrophe or human error;
5. Provide for natural and engineered methods for managing the stormwater that flushes contaminants off of built-upon areas in the water supply watersheds and other watersheds that may reach water supply reservoirs and streams unless controlled.
6. To require that new development maintain the pre-development hydrologic response in its post-development state as nearly as practicable for the applicable design storm to reduce flooding, streambank erosion, nonpoint and point source pollution and increases in stream temperature, and to maintain the integrity of stream channels and aquatic habitats; and

7. To establish provisions for the long-term responsibility for and maintenance of structural and nonstructural stormwater Best Management Practices (BMPs) to ensure that they continue to function as designed, are maintained appropriately, and pose no threat to public safety.

B. -WCA- Watershed Critical Area

The -WCA, Watershed Critical Area overlay district establishes regulations for protecting the portion of a water supply watershed adjacent to a water supply intake or reservoir.

C. -GWA- General Watershed Area

The -GWA, General Watershed Area overlay district establishes regulations for protecting the portion of a water supply watershed outside the -WCA.

(Amended by Ord. 10-161 on 12/1/10)

30-12-3.3 Incorporation of Designated Watershed Map(s)

This section incorporates by reference the Greensboro Designated Watershed Map, dated June 1, 2009, showing Watershed Critical Areas and General Watershed Areas of the following: Greensboro (Reedy Fork Creek), Upper Randleman Lake (East and West Forks of Deep River, which drain to High Point City Lake and Oak Hollow Lake), Lower Randleman Lake (Deep River), Lake Mackintosh (Big Alamance Creek), and Polecat Creek watersheds. The map also depicts boundaries of the Other Watershed Districts.

(Amended by Ord. 10-161 on 12/1/10)

30-12-3.4 Applicability

A. Coverage

1. This section (30-12-3) applies to all sites containing new development in the city's jurisdiction , including grading, paving, gravel placement, and construction of buildings and other structures, except for the exempt activities listed in 30-12-3.4(B). 30-12-4 and 30-12-5 impose additional requirements specific to the overlay district. 30-12-3.9 applies to all activities in the city's jurisdiction.
2. The construction of new streets, the widening of existing streets and the installation of sidewalks shall comply with the provisions of this Article to the extent practicable. When it is determined by the Water Resources Director that the provisions of these sections cannot be met, the construction of new streets, the widening of existing streets and the installation of sidewalks shall comply with all applicable state and federal rules and regulations.

B. Exempt Activities

The following activities are exempt from the plan submission and approval requirements of this section. However, any restrictions upon building location, drainageways, pavement, or other built-upon area, or any other matter appearing on any previously approved watershed development (watershed control) or stormwater management plan covering the subject property, shall be complied with unless and until replaced by an approved revised plan.

1. Construction of a single-family dwelling and its accessory structures on a lot of record created outside WCA Tiers 1 and 2 prior to July 1, 1993.
2. Replacement of existing built-upon area with a like or lesser amount of new built-upon area outside any required stream buffer on the same lot, provided that the Water Resources Director has determined that equal or improved stormwater management will result.
3. Except as provided in subsection (1) above, placement of small accessory buildings or structures or small amounts of other built-upon area provided that the total additional built-upon area is no greater than 400 square feet and the additional built-upon area is not placed within a required stream buffer. This exemption shall apply to a lot for one time only after June 30, 1993.

4. Existing development until such time as new development is initiated on the site.
5. Activities exempt from permit requirements of Section 404 of the federal Clean Water Act, as specified in 40 CFR 232 are exempt from watershed regulations of this section. Stream buffer regulations for ongoing farming and forestry activities will be implemented and enforced by the Division of Water Quality).

C. **Modifications**

The provisions of this section (30-12-3) are eligible for Modification in accordance with 30-4-11. The evaluation of requests for modifications of watershed regulations involves both technical evaluations (normally conducted by the Enforcement Officer and the Technical Review Committee) and evaluations made in light of both water supply watershed protection policies and fundamental fairness (normally conducted by the Planning Board and City Council). The approval procedure shall be as follows:

1. **Watershed Modification that is Minor in Nature**

Modification of the watershed regulations of 30-12-3, 30-12-4 or 30-12-5 that meets one of the following criteria: (A) Modification of any standard of Article 12 but not in the EMC Rules; (B) Modification of any standard on which the level of performance required by Article 12 exceeds that required by the corresponding section of the EMC Rules, provided that approval of the modification does not lower the level of performance below that required by the EMC Rules; or (C) Activities that will impact only Zone 2 of the stream buffer; or (D) Modification from the EMC Rules that results in a relaxation, by a factor of up to 5%, of density, or built-upon area requirement under the high-density option; or that results in a relaxation, by a factor of up to 10%, of any management requirement under the low-density option, shall be considered minor in nature.

- a. For properties located within General Watershed Areas (GWA) and Watershed Critical Areas (WCA), the Technical Review Committee may grant a Type 2 modification to allow the treatment of untreated off-site runoff in exchange for not treating up to 5% of built-upon area but not to exceed 24,000 square feet of on-site runoff that is considered difficult to control in accordance with 30-4-11. This percentage is based on total on-site BUA vs. BUA not treated by a BMP.
- b. For properties located within General Watershed Areas (GWA) and Other Watershed Districts, the Planning Board may grant a Type 3 Modification to the Standards of watershed regulations in accordance with 30-4-11.
- c. For properties located within the Watershed Critical Areas (WCA), the City Council may grant a Type 4 Modification to the Standards of the watershed regulations in accordance with 30-4-11.

2. **Watershed Modification that is Major in Nature**

Modification of the watershed regulations of 30-12-3, 30-12-4 or 30-12-5 that do not meet the criteria for a "Watershed Modification that is Minor in Nature" are considered major in nature. Recognizing that these types of modifications are only approvable in unique circumstances on a case-by-case basis by the North Carolina Environmental Management Commission (EMC) pursuant to Section .0104(r) of the EMC Rules, the EMC may grant a Type 5 Modification to the Standards of the watershed regulations in accordance with 30-4-11. Any modification of the stream buffer regulations of 30-12-3.9 is considered a Type 5 modification.

- a. A Type 5 modification request pertains to activities that will impact any portion of Zone 1 or any portion of both Zones 1 and 2 of the riparian protection area. If the city has determined that a Type 5 modification request meets the requirements of this section, then it shall prepare a preliminary finding and submit it to the North Carolina Environmental Management Commission for approval. Within 90 days after receipt by the city, the Environmental Management Commission shall review preliminary findings on the Type 5 request and take one of the following actions: approve, approve with conditions and stipulations, or deny the request.
- b. Appeals from a NC Environmental Management Commission decision on a Type 5 modification request are made on judicial review to Superior Court.

(Amended by Ord. 10-161 on 12/1/10 and Ord. 12-98 on 8/21/12)

Effective on: 12/2/2014

30-12-3.5 Participation in a Public Regional Stormwater Control Program

A. Where Permitted

Where a regional stormwater control program has been established by one or more local governments, or by an authority operating on behalf of one or more local governments, a development may participate in that regional program in lieu of any certification of runoff control required by this article, provided that all of the following conditions are met:

1. Stormwater runoff from the development drains to an approved existing or proposed public regional stormwater control facility that is currently operational or will be operational within 2 years;
2. Participation is in the form of contribution of funds, contribution of land, contribution of stormwater management facility construction work, or a combination of these, the total value of which must be in accordance with a fee schedule adopted by the City Council; and
3. The Technical Review Committee finds that the stormwater management plan is in compliance with all other applicable requirements of this section.

B. Use of Contributions

Each contribution from a development participating in a regional stormwater control program must be used for acquisition, design, construction or maintenance of one or more such controls in the same watershed in which the development is located.

(Amended by Ord. 10-161 on 12/1/10)

30-12-3.6 Watershed Development Plan

A. Plan Required

1. For a two-family dwelling on a zone lot, a plot plan showing all proposed built-upon area, not to exceed 3,000 square feet, shall suffice in a GWA or WCA.
2. For all other new development in a GWA or Other Watershed Districts, a watershed development plan in accordance with the performance standards specified in [30-12-3](#) and with other requirements of [30-12-3](#) and [30-12-5](#) shall be submitted.
3. For all other new development in a WCA, a watershed development plan in accordance with the performance standards specified in [30-12-3](#) and with other requirements of [30-12-4](#) shall be submitted.
4. Plans shall include all applicable information listed in the application as published and amended by the Water Resources Director.

B. Plan Approval

The Technical Review Committee is authorized to approve watershed development plans that conform to the requirements of this section.

C. Approved Plan a Prerequisite

The Engineering and Inspections Director is not authorized to issue any permits, except as provided in [30-4-26.1\(F\)1](#) and grading permits as provided in [30-4-26.2](#), for development on any land in a WCA, GWA, or Other Watershed Districts until a watershed development plan in compliance with the requirements of this section has been approved.

D. Permanent Engineered Stormwater Controls

When a permanent engineered stormwater control is required for a development to meet the requirements of this Article, a North Carolina registered professional engineer shall prepare the plan with the Engineer's Certification of Stormwater Quality Control from 30-4-15.6(C)4a) affixed, signed, sealed, and dated in accordance with the requirements in the **Stormwater Management Manual (SWMM)**. An operation and maintenance plan for the permanent engineered stormwater control shall be submitted with the watershed development plan.

(Amended by Ord. 10-161 on 12/1/10)

30-12-3.7 Improvements

A. Design of Improvements

1. Design of improvements shall:
 - a. Be performed by a North Carolina registered professional engineer;
 - b. Be subject to approval by the Water Resources Director;
 - c. Meet or exceed the guidelines in the **Stormwater Management Manual**;
 - d. Provide a drainage maintenance and utility easement (DMUE) over and 15 feet around the stormwater device to ensure adequate access for maintenance; and
 - e. If a stormwater device is located within a subdivision, the DMUE shall be located within the boundaries of the common elements.
2. The Water Resources Director may recommend, and the Technical Review Committee may require, that a given engineered stormwater control be positioned on a site such that water quality protection is improved.

B. Construction of Watershed Protection Improvements

1. See 30-13-5.4 if improvements are pursuant to a watershed development plan that was a prerequisite to a subdivision approval.
2. The construction of all improvements designed for watershed protection and shown on other approved watershed development plans shall be certified, completed, full design volume available, and functioning properly prior to any pond plat recordation or issuance of any building certificate of occupancy. Alternatively, the Water Resources Director may issue a temporary certificate of compliance if the structure has not been completed when assurance of its completion within one year is provided in accordance with 30-4-20 (Sureties or Improvement Guarantees).
3. **Completion of Improvements**
 - a. For single-family and townhouse subdivisions, final approval of in-installed engineered stormwater controls shall be required at finalization of the grading permit or upon issuance of 90% of the total number of building certificates of occupancy of lots in the platted subdivision, whichever comes later. If neither a building permit nor a grading permit is required for a site, then any such engineered stormwater control shall be substantially completed and have full design volume available prior to installation of any built-upon area on the site. An Engineer's Certification of Stormwater Control Completion (30-4-15.6(B)6)) shall be required prior to final approval by the Water Resources Director.
 - b. For all others, final approval of installed engineered stormwater controls shall be required at finalization of the grading permit or upon issuance of the final building certificate of occupancy, whichever comes later. If neither a building permit nor a grading permit is required for a site, then any such engineered stormwater control shall be substantially completed and have full design volume available prior to installation of any built-upon area on the site. An Engineer's Certification

of Stormwater Control Completion (30-4-15.6(B)6) shall be required prior to final approval by the Water Resources Director.

4. A final inspection and approval by the Water Resources Director shall occur before the release of any performance securities.
5. The certification requirements of this section also apply for those projects utilizing a structural best management practice.

C. Recordation of Permanent Improvements

1. All permanent engineered stormwater controls, associated access/maintenance easement(s) (specific or general, at the owner's option), and engineer's certification of stormwater control completion shall be recorded on a Pond Plat.
2. A mechanism to ensure their proper operation and maintenance shall be established and recorded in the Office of the County Register of Deeds office concurrent with or prior to plat recordation and prior to the issuance of the final building Certificate of Occupancy.
3. A mechanism to ensure that future *development* and *redevelopment* shall maintain the site consistent with the approval project plan(s) shall be established and recorded in the Office of the County Register of Deeds office concurrent with or prior to plat recordation.

D. Maintenance Responsibility

1. When engineered stormwater controls serve more than 2 lots, an owners' association shall be required. When fewer than 2 lots are served by engineered stormwater controls or regional stormwater controls a binding maintenance agreement shall be required. See 30-13-5.5 and 30-13-9.1.
2. Maintenance of engineered stormwater controls shall be performed at such time as the designated sediment storage volume of the structure has been lost to sediment or a part of the installation is not functioning as originally designed. The Water Resources Director shall have the responsibility to inspect or require to be inspected by a qualified individual such structures annually and to notify the responsible property owner or owners' association when maintenance or repairs are required. All required repairs and maintenance shall be performed within 90 days after such notice. In case of failure by the responsible party to perform the required maintenance or repairs within the stated period, the city may perform such maintenance or repairs and recover all costs attendant thereto from the property owner or owners' association. In addition, the city may assess penalties for violations of this section as set out in Article 5.

E. As-Built Plans

The applicant shall submit the following:

1. Prior to the issuance of any Certificate of Occupancy the applicant shall submit under seal actual as-built plans for all stormwater conveyances. The plans shall show the final design specifications for all stormwater conveyances with the field location, size, depth, controls, and devices, as installed. This shall include plan view drawings showing all public and private storm drainage piping 12 inches or larger in diameter with associated invert elevation data.
2. Upon completion of the structural best management practices and before a final Certificate of Occupancy is granted, the applicant shall submit under seal as-built plans for the structural best management practice.

(Amended by Ord. 10-161 on 12/1/10)

30-12-3.8 Clustering

A. Clustering Encouraged

Clustering of residential development is encouraged. Clustering of single-family detached development is allowed under the provisions of 30-7-3.3. Multi-family development may be clustered so long as the development complies with the applicable standards of 30-8-10.

B. Performance Requirements

Clustering is allowed if the overall density of the project meets the applicable GWA or WCA density and stormwater runoff control requirements, the built-upon areas are designed and sited to minimize stormwater runoff impact to the receiving waters and minimize concentrated stormwater flow, and the remainder of the tract remains in a vegetated or natural state.

C. Additional Requirements in all Watersheds

1. Development shall maximize the use of diffuse flow through vegetated areas and shall maximize the flow length through vegetated areas.
2. Areas of concentrated development shall be located in upland areas and away, to the maximum extent practicable, from surface waters and drainageways.
3. In the Randleman Watershed, the remainder of the tract to remain in a vegetated or natural state shall be conveyed to an owners' association, conveyed to a local government for preservation as a park or greenway, conveyed to a conservation organization, or placed in a permanent conservation or farmland preservation easement. A document recorded at the Register of Deeds shall require maintenance of the vegetated or natural area.
4. To the extent that this can be accomplished consistent with other requirements of this ordinance, built-upon area shall be minimized to the maximum extent practical through clustering and narrower and shorter paved areas (streets, driveways, sidewalks, and parking lots). Rooftop and other built-upon area runoff shall be spread over pervious areas.
5. Land clearing during the construction process shall be limited to the maximum extent practical.
6. The developer shall record deed restrictions and protective covenants to ensure that development activities maintain the development consistent with the approved plans and specifications.

(Amended by Ord. 10-161 on 12/1/10)

30-12-3.9 Stream Buffers Required

A. Stream Buffer Widths

Stream buffers containing zones and widths as specified in the Stream Buffer Zone and Width Requirements in Table 12-4, below shall be provided and maintained throughout the city's jurisdiction. (See 30-12-4 for additional requirements concerning stream buffers in the WCA).

B. Vegetated Conveyances

When the low-density option is used, stormwater runoff shall be transported primarily by vegetated conveyances. Diffuse flow shall be maintained within the stream buffers.

C. Stream Channelization

Approval from the Technical Review Committee, NC Division of Water Quality, and U.S. Army Corps of Engineers shall be secured before any intermittent or perennial stream is disturbed. Additionally, if the stream is in a WCA, it shall not be channelized without prior approval of a Type 3 Modification by the Planning Board in accordance with 30-4-11. Evaluation of the channelization request shall be based on grounds for a modification and mitigation may be required.

D. Platting of Stream Buffers

Subdivision plats and pond plats shall show each stream buffer and zone applicable to the property.

E. Diffuse Flow Requirement

In all watersheds, diffuse flow of runoff shall be maintained in the stream buffer by dispersing concentrated flow prior to its entry into the buffer and reestablishing vegetation as follows:

1. Concentrated runoff from new ditches or man-made conveyances shall be converted to diffuse flow at non-erosive velocities before the runoff enters Zone 2 of the riparian protection area;
2. Periodic corrective action to restore diffuse flow shall be taken by the landowner if necessary to impede the formation of erosion gullies; and
3. As set out in 30-12-3.9(F) and Table 12-5, the zones of the stream buffer and Table of Stream Buffer Activities and Structures respectively, no new stormwater conveyances are allowed through the buffers except for those specified in Table 12-5, addressing stormwater management ponds, drainage ditches, roadside ditches, and stormwater conveyances.

F. Explanation of Stream Buffer Zones

Perennial and intermittent stream buffers must be composed of 2 or 3 of the following zones, depending upon whether the low-density option or the high-density option is used.

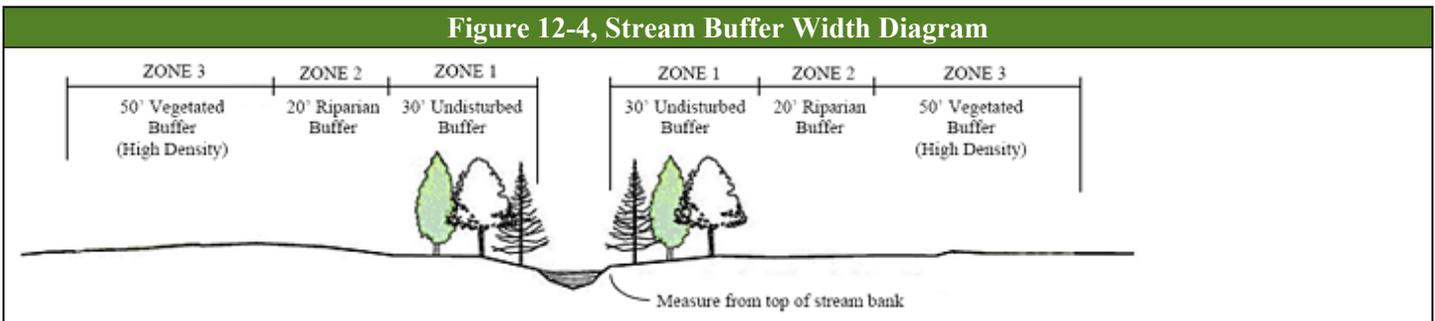
1. Zone 1 is the portion of a riparian protection area located closest to the stream, lake, reservoir, or pond. It is intended to be an undisturbed area of vegetation except for activities and structures provided for in Table 12-5 Stream Buffer Activities and Structures in all Watersheds (30-12-3.9(G)3)). The location of Zone 1 shall be as follows:
 - a. For intermittent and perennial streams, Zone 1 shall begin at the top of the bank and extend landward a distance of 30 feet on all sides of the surface water, measured horizontally on a line perpendicular to a vertical line marking the top of the bank. For ponds, lakes and reservoirs located within a natural drainage way, Zone 1 shall begin at the normal water level and extend landward a distance of 30 feet, measured horizontally on a line perpendicular to a vertical line marking the normal water level. No new built-upon area is to be placed in this zone.
2. Zone 2, the remainder of a riparian protection area, is intended to provide protection through a vegetated riparian zone which provides for diffusion and infiltration of runoff and filtering of pollutants. Zone 2 shall consist of a stable, vegetated area that is undisturbed except for activities and structures provided for in Table 12-5 (30-12-3.9(G)3)). Grading and revegetating in 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 20 feet as measured horizontally on a line perpendicular to the surface water. The combined width of Zone 1 and 2 shall be 50 feet on all sides of the surface water. No new built-upon area is to be placed in this zone.
3. Zone 3 is not part of a riparian protection area and therefore is subject to less extensive requirements than Zones 1 and 2. Zone 3 covers the outermost 50 feet of the 100-foot perennial stream buffer under the high-density option. No new built upon area is to be placed in this zone. (See 30-12-4 for additional requirements concerning stream buffers in the WCA)

Table 12-4 Stream Buffer Width {1} Requirements in Watershed Districts and in Other Water Supply Watershed Districts						
Low Density Option						
Watershed District	Perennial Streams, Lakes & Ponds			Intermittent Streams		
	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3
All Watershed Districts	0-30	30-50	N/A	0-30	30-50	N/A
High-Density Option						
Watershed District	Perennial Streams, Lakes & Ponds			Intermittent Streams		
	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3
Upper Randleman Lake Lower Randleman Lake	0-30	30-50	50-100	0-30	30-50	N/A

**Table 12-4
Stream Buffer Width {1} Requirements in Watershed Districts and in Other Water Supply Watershed Districts**

High-Density Option						
Watershed District	Perennial Streams, Lakes & Ponds			Intermittent Streams		
	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3
Greensboro Lake Mackintosh Polecat Creek Other Watershed Districts	0-30	30-50	N/A	0-30	30-50	N/A

{1} Distances on all sides of water bodies are in feet and are with reference to top of bank for streams and normal water level for all other water bodies. Thus, "0" equals top of bank or normal water level and "30" equals 30 feet landward from top of bank or normal water level.



G. Associated Requirements

1. Approval for New Development

The city shall issue an approval for new development only if the development application proposes to avoid impacts to stream buffers defined in this ordinance, or if the application proposes to impact such a buffer, and it demonstrates that the applicant has done the following as applicable:

- a. Determined that the activity is allowable in accordance with the requirements of this ordinance.
- b. Received a Determination of No Practical Alternative from the city according to 30-4-26.11.
- c. Received approval of a mitigation plan. Activities and structures designated as allowable with mitigation in Table 12-5 require a mitigation plan. The mitigation plan must be prepared pursuant to 30-12-3.9(G)5).
- d. Received a Type 5 Modification pursuant to 30-4-11.3(D), 30-4-11.7 and 30-12-3.4(C)2).

2. Requirements for Categories of Activities and Structures in Stream Buffers

Activities and structures designated in Table 12-5 as exempt, allowable, and allowable with mitigation within a riparian protection area shall have the following requirements:

a. Exempt

Activities and structures designated as exempt are permissible provided that they adhere to the limitations of the activity as defined in Table 12-5. In addition, exempt structures and activities shall be designed, constructed and maintained to minimize soil disturbance and to provide the maximum water quality protection practicable, including construction, monitoring, and maintenance activities.

b. Allowable

Activities and structures designated as allowable are permissible with restrictions and may proceed provided that there are no practical alternatives to the requested use pursuant to 30-4-26.11. This includes construction, monitoring, and maintenance activities.

c. Allowable with Mitigation

Activities and structures designated as allowable with mitigation may proceed provided that there are no practical alternatives to the requested use pursuant to 30-4-26.11 and an appropriate mitigation strategy has been approved pursuant to 30-12-3.9(G)4). These activities and structures require a determination of no practical alternative from the city in accordance with 30-4-26.11.

3. Activities and Structures that are Existing and Ongoing

30-12-3.9 shall not apply to activities and structures in the riparian protection area (Zones 1 & 2) that are legally existing and ongoing. Only the portion of the buffer occupied by the footprint of the existing activity or structure is exempt. However, this Section shall apply at the time an existing, ongoing activity or structure is changed to another activity or structure. Change of activity or structure shall involve the initiation of any activity that does not meet either of the following criteria for existing, ongoing activity:

- a. It was present within the buffer as of the effective date of the local ordinance enforcing this Rule and has continued to exist since that time (April 1, 1999 for Randleman and November 1, 2010 for all portions of the city's jurisdiction except Randleman). Activities necessary to maintain activities and structures are allowed, provided that the site remains similarly vegetated, no built-upon area is added within 50 feet of the surface water and existing diffuse flow is maintained.
- b. It is a project or proposed development that has been determined by the Director of Water Resources to meet at least one of the following criteria:
 - i. Project that requires a 401 Certification/404 Permit and these were issued prior to November 1, 2010;
 - ii. Project that requires a state permit (such as landfills, NPDES wastewater discharges, land application of residuals and road construction activities), had begun construction or been under contract to begin construction, and had received all required state permits and certifications prior to November 1, 2010;
 - iii. Project that is being reviewed through the Clean Water Act Section 404/National Environmental Policy Act Merger 01 Process (published by the US Army Corps of Engineers and Federal Highway Administration, 2003) or its immediate successor and that has reached agreement with DENR on avoidance and minimization by November 1, 2010; or
 - iv. Project that is not required to be reviewed through the Clean Water Act Section 404/National Environmental Policy Act Merger 01 Process or its immediate successor if a Finding of No Significant Impact has been issued for the project and the project has the written approval of the city prior to November 1, 2010.

4. Mitigation

- a. Mitigation as described below shall be required of all persons who wish to impact a stream buffer when one of the following applies:
 - i. A person has received a "No Practical Alternative Determination" pursuant to 30-4-26.11 for a proposed activity and structure that is designated as "allowable with mitigation;" or
 - ii. A person has received a Type 5 Modification pursuant to 30-4-11.3(D), 30-4-11.7, and 30-12-3.4(C)2) and is required to perform mitigation as a condition of granting the modification.
- b. The Director of Water Resources shall issue a mitigation approval upon determining that the applicant has made payment of a compensatory mitigation fee to the Riparian Buffer Restoration Fund pursuant to 15A NCAC 02B .0269 (Jordan Water Supply Nutrient Strategy: Riparian Buffer Mitigation Fees to the NC Ecosystem Enhancement Program) and that payment has been accepted by the NC Ecosystem Enhancement Program, or that payment has been made and accepted by a

private mitigation bank that complies with banking requirements of the US Army Corps of Engineers, and the applicable criteria in Rule 15A NCAC 02B .0295.

(Amended by Ord. 10-161 on 12/1/10)

The following chart sets out potential new activities and structures within the buffer and categorizes them as exempt, allowable, or allowable with mitigation. All activities and structures not categorized as exempt, allowable, or allowable with mitigation are considered prohibited and may not proceed within the riparian protection area if the use would impact the buffer.

Table 12-5 Table of Activities and Structures in Stream Buffers (Zone 1 and Zone 2)			
Activities and Structures in Stream Buffers	Exempt	Allowable	Allowable with Mitigation
Access trails: Pedestrian access trails leading to the surface water, docks, fishing piers, boat ramps and other water dependent activities where no built-upon area is added to the buffer:			
Such trails that are restricted to the minimum width practicable and do not exceed 4 feet in width of buffer disturbance, provided that neither installation nor use results in removal of trees	X		
Such trails that exceed 4 feet in width of buffer disturbance		X	
Other such trails that result in removal of trees			
Airport facilities:			
Airport facilities that disturb not more than 150 linear feet and not more than one-third of an acre of riparian protection area		X	
Other airport facilities			X
Activities necessary to comply with FAA requirements (e.g. radar uses or landing strips) ¹		X	
Archaeological activities in Zones 1 and 2			
Designed, constructed and maintained to provide the maximum sediment removal and erosion protection, to have the least adverse effects on aquatic life and habitat, and to protect water quality to the maximum extent practical.	X		
Bridges			
Canoe access, provided that neither installation nor use results in removal of trees and that no built-upon area is added in the buffer.	X		
Dam maintenance activities:			
Dam maintenance activities that either do not cause additional buffer disturbance beyond the footprint of the existing dam or are covered under the U.S. Army Corps of Engineers Nationwide Permit No. 3	X		
Other dam maintenance activities		X	
Drainage ditches, roadside ditches and stormwater conveyances within riparian protection area:			
New stormwater flows to existing drainage ditches, roadside ditches, and stormwater conveyances provided flows do not alter or result in the need to alter the conveyance and are managed to minimize the sediment, nutrients and other pollution conveyed to water bodies	X		
Realignment of existing roadside drainage ditches retaining the design dimensions, where no additional travel lanes are added and the minimum required roadway typical section is used based on traffic and safety considerations		X	

**Table 12-5 Table of Activities and Structures
in Stream Buffers (Zone 1 and Zone 2)**

Activities and Structures in Stream Buffers	Exempt	Allowable	Allowable with Mitigation
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 protection area		X	
New drainage ditches, roadside ditches and stormwater conveyances applicable to linear projects that do not provide a stormwater management facility due to topography constraints, provided that other practicable BMPs are employed			X
Draining a pond in a natural drainageway where a riparian protection area is established adjacent to the new channel	X		
Driveway crossings of streams and other surface waters subject to this ordinance:			
Located on single family residential lots and disturbing no more than 25 linear feet and no more than 2,500 square feet of riparian protection area	X		
Located on single family residential lots and disturbing more		X	
Any other development cumulatively disturbing no more than 150 linear feet and no more than one-third of an acre of riparian protection area		X	
Any other development cumulatively disturbing more			X
Driveway encroaching into the buffer but not crossing the stream or other water body			X
Fences			
Fences provided that disturbance is minimized and installation does not result in removal of trees	X		
Fences, provided that disturbance is minimized and installation results in removal of trees		X	
Fertilizer application, one time application to establish vegetation provided the manufacturer's recommended rate is not exceeded	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 with native vegetation	X		
Greenway / hiking trails, provided they are designed, constructed and maintained to provide the maximum nutrient removal and erosion protection, to have the least adverse effects on aquatic life and habitat, and to protect water quality to the maximum extent practical		X	
Historic preservation designed, constructed and maintained to provide the maximum nutrient removal and erosion protection, to have the least adverse effects on aquatic life and habitat, and to protect water quality to the maximum extent practical	X		
Maintenance access on modified natural streams: a grassed travel way on one side of the water body when 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	
Mining activities:			
Mining activities that are covered by the Mining Act, where new riparian protection areas that meet the requirements of this ordinance are established adjacent to the relocated channels		X	
Mining activities that are not covered by the Mining Act			X

**Table 12-5 Table of Activities and Structures
in Stream Buffers (Zone 1 and Zone 2)**

Activities and Structures in Stream Buffers	Exempt	Allowable	Allowable with Mitigation
Mining activities where new riparian protection areas that meet the requirements of this ordinance are not established adjacent to the relocated channels			X
Wastewater or mining dewatering wells with approved NPDES permit	X		
Piping of a stream, outside of the Upper Randleman Lake and Lower Randleman Lake Watershed Districts under a permit issued by the U.S. Army Corps of Engineers		X	
??Playground equipment:			
Playground equipment on single family lots if installation and use does not result in removal of vegetation	X		
Playground equipment installed on lands other than single family lots or that requires removal of vegetation		X	
Ponds created by impounding streams and not used as stormwater BMPs			
New ponds where a riparian protection area is established adjacent to the pond		X	
New ponds where a riparian protection area is not established adjacent to the pond			X
Protection of existing structures, facilities and stream banks when this requires additional disturbance of the riparian protection area or the stream channel		X	
Railroad activities and structures other than crossings of streams and other surface waters subject to this ordinance			X
Railroad crossings of streams and other surface waters subject to this ordinance:			
Those impacting no more than 40 linear feet of riparian protection area	X		
Those impacting more than 40 linear feet but not more than 150 linear feet and not more than one-third of an acre of riparian protection area		X	
Those impacting more			X
Recreational and accessory structures in Zone 2			
Sheds and gazebos with:			
Total footprint not more than 150 square feet per lot		X	
Greater footprint			X
Wooden slatted decks and associated steps with:			
Deck at least 8 feet in height and no vegetation removed from Zone 1		X	
Deck less than 8 feet in height or vegetation removed from Zone 1			X
Removal of fill or debris, provided that diffuse flow is maintained and vegetation is restored	X		
Scientific studies and stream gauging In Zones 1 and 2 if they are designed, constructed and maintained to protect water quality to the maximum extent practical	X		
Stormwater BMPs:			
Wet detention, bioretention, and constructed wetlands in Zone 2 if diffuse flow of discharge is provided into Zone 1		X	
Wet detention, bioretention, and constructed wetlands in Zone 1			X

**Table 12-5 Table of Activities and Structures
in Stream Buffers (Zone 1 and Zone 2)**

Activities and Structures in Stream Buffers	Exempt	Allowable	Allowable with Mitigation
Streambank stabilization		X	
Street crossings of streams and other surface waters subject to this ordinance:			
Impacting no more than 40 linear feet of riparian protection area	X		
Crossings impacting more than 40 linear feet but not more than 150 linear feet and no more than one-third of an acre of riparian protection area		X	
Crossings that impact more			X
Street relocation: Relocation of existing private access roads associated with public road projects where necessary for public safety:			
No more than 2,500 square feet of buffer impact		X	
More than 2,500 square feet of buffer impact			X
Street activities and structures other than crossings of streams and other surface waters subject to this ordinance			X
Temporary vehicular travelways, provided that the disturbed area is restored to pre-construction topographic and hydrologic conditions immediately after construction is complete and replanted immediately with comparable vegetation, except that tree planting may occur during the dormant season. A one-time application of fertilizer may be used to establish vegetation. At the end of five years the restored buffer shall comply with the restoration criteria of Rule 15A NCAC 02B.0268:			
No more than 2,500 square feet of buffer disturbance	X		
More than 2,500 square feet of buffer disturbance		X	
Associated with culvert installation or bridge construction or replacement		X	
Temporary sediment and erosion control devices, provided that the disturbed area is restored to pre-construction topographic and hydrologic conditions immediately after construction is complete and replanted immediately with comparable vegetation, except that tree planting may occur during the dormant season. A one-time application of fertilizer may be used to establish vegetation. At the end of five years the restored buffer shall comply with the restoration criteria of Rule 15A NCAC 02B.0268:			
In Zone 2, provided ground cover is established within timeframes required by the Sedimentation and Erosion Control Act, vegetation in Zone 1 is not compromised, and runoff is released as diffuse flow in accordance with this ordinance	X		
In Zones 1 and 2 to control impacts associated with activities and structures approved by the local government or the EMC, provided that sediment and erosion control for upland areas is addressed, to the maximum extent practical, outside the buffer		X	
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	X		
In-stream temporary erosion and sediment control measures for work within a stream channel		X	
Utility, electric, aerial, perpendicular crossings of streams and other surface waters subject this ordinance: ^{2,3,5}			
Disturbing not more than 150 linear feet of riparian protection area	X		
Disturbing more		X	
Utility, electric, aerial, other than perpendicular crossings: ^{5}			
With impacts in Zone 2		X	
With impacts in Zone 1 ^{2,3}			X

**Table 12-5 Table of Activities and Structures
in Stream Buffers (Zone 1 and Zone 2)**

Activities and Structures in Stream Buffers	Exempt	Allowable	Allowable with Mitigation
Utility, electric, underground, perpendicular crossings: {3,4,5}			
Disturbing not more than 40 linear feet of riparian protection area	X		
Disturbing more		X	
Utility, electric, underground, other than perpendicular crossings: {4}			
With impacts in Zone 2 ^{2}	X		
With impacts in Zone 1 ^{1,4}	X		
Utility, non-electric, perpendicular crossings of streams and other surface waters subject to this ordinance [3,5]			
Disturbing not more than 40 linear feet of riparian protection area with a maintenance corridor no wider than 10 feet	X		
Disturbing not more than 40 linear feet of riparian protection area with a maintenance corridor wider than 10 feet in width		X	
Disturbing more than 40 linear feet but not more than 150 linear feet of riparian protection area with a maintenance corridor no wider than 10 feet		X	
Disturbing more than 40 linear feet but not more than 150 linear feet of riparian protection area with a maintenance corridor wider than 10 feet			X
Disturbing more than 150 linear feet of riparian protection area			X
Utility, non-electric, other than perpendicular crossings^{4,5}			
Outside of Upper Randleman Lake and Lower Randleman Lake Watershed Districts with impacts in Zone 2	X		
Within the Upper Randleman Lake and Lower Randleman Lake Watershed Districts with impacts in Zone 2		X	
Within all Watershed Districts and with impacts in Zone 1 ^{1}			X
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 protection area	X		
Pruning forest vegetation, provided that the health and function of the forest vegetation is not compromised	X		
Removal of individual trees which are in danger of causing damage to dwellings, other structures or human life	X		
Removal of individual trees which are dead, diseased or damaged	X		
Removal of poison ivy	X		
Removal of understory nuisance vegetation as defined in: <i>Smith, Cheri L. 1998. Exotic Plant Guidelines. Dept. of Environment and Natural Resources. Division of Parks and Recreation. Raleigh, NC. Guideline #30</i>	X		

**Table 12-5 Table of Activities and Structures
in Stream Buffers (Zone 1 and Zone 2)**

Activities and Structures in Stream Buffers	Exempt	Allowable	Allowable with Mitigation
Vehicular access roads leading to water-dependent structures as defined in 15A NCAC 02B .0202, provided they do not cross the surface water and have minimum practicable width, not exceeding 10 feet		X	
Water dependent structures as defined in 15A NCAC 02B .0202 where installation and use result in disturbance to riparian protection area		X	
Water supply reservoirs:			
New reservoirs, provided that a riparian protection area that meets the requirements of this ordinance is established adjacent to the reservoir		X	
New reservoirs where a riparian protection area that meets the requirements of this ordinance is not established adjacent to the reservoir			X
Water wells:			
Single family residential water wells	X		
All other water wells		X	
Wetland, stream and buffer restoration that results in impacts to the riparian protection area:			
Wetland, stream and buffer restoration that requires DWQ approval for the use of a 401 Water Quality Certification	X		
Wetland, stream and buffer restoration that does not require DWQ approval for the use of a 401 Water Quality Certification		X	

**Table 12-5 Table of Activities and Structures
in Stream Buffers (Zone 1 and Zone 2)**

Activities and Structures in Stream Buffers	Exempt	Allowable	Allowable with Mitigation
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^{1}Provided that:

- No heavy equipment is used in Zone 1
- Vegetation in undisturbed portions of the buffer is not compromised
- Felled trees are removed by chain
- No 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
- Zones 1 and 2 meet the requirements of 30-12-3.9(D)

^{2}Provided that, in Zone 1, 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 applicant to the City of Greensboro as defined in 30-4-26.11

- A zone 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
- Root systems shall be left intact to maintain the integrity of the soil. Stumps shall be left in place 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
- 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}Provided that poles or aerial infrastructure shall not be installed within 10 feet of a water body unless the applicant submits a no practical alternative determination and the City of Greensboro completes an evaluation as defined in 30-4-26.11

^{4}Provided that, in Zone 1, 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 applicant to the City of Greensboro as defined in 30-4-26.11.

- Woody vegetation shall be cleared by hand. No land grubbing or grading is allowed
- Root systems shall be left intact to maintain the integrity of the soil. Stumps shall be left in place, except in the utility trench
- 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
- Measures shall be taken upon completion of construction and during routine maintenance to ensure diffuse flow of stormwater through the buffer
- In wetlands, mats shall be utilized to minimize soil disturbance

^{5}Perpendicular crossings are those that intersect the surface water at an angle between 75 degrees and 105 degrees.

(Amended by Ord. 10-161 on 12/1/10 and Ord. 12-98 on 8/21/12)

Effective on: 12/2/2014

30-12-3.10 Activities Regulated by Other Governmental Agencies

A. Designated Agencies

The following are the designated agencies responsible for implementing the requirements of the EMC Rules for the specified activities:

1. Agriculture - Guilford Soil and Water Conservation District
2. Silviculture - NC Division of Forest Resources

B. Transportation

The North Carolina Department of Transportation shall comply with the practices outlined in its document entitled "Best Management Practices for the Protection of Surface Waters," which is incorporated by reference.

C. Hazardous Materials

1. The Greensboro Emergency Management Assistance Agency and the Guilford County Local Emergency Planning Committee (LEPC) are the designated management agencies responsible for implementing the provisions of this subsection pertaining to hazardous materials.
2. An inventory of all hazardous materials used and stored in the watershed shall be maintained. A spill/failure containment plan and appropriate safeguards against contamination are required. Waste minimization and appropriate recycling of materials is encouraged.
3. Properties in the WCA or GWA shall comply with the requirements of the Superfund Amendments and Reauthorization Act (SARA) Section 302 Extremely Hazardous Substances (42 USC 11000 et seq.), or Section 311 of the Clean Water Act, as amended (CWA)(33 USC 1251 et seq.; oil and hazardous substances) if hazardous substances listed in either of these sections are stored or used on the site.

(Amended by Ord. 10-161 on 12/1/10)

30-12-3.11 Density

A. Density Limits

New development shall not exceed the density limits in Table 12-6 (Density Limits in Upper and Lower Randleman Lake Watersheds) or Table 12-7 (Density Limits in Other Water Supply Watersheds, and Other Watershed Districts), whichever is applicable, except as provided in Subsection (D) below.

B. Measurement in Low-density Option

For the low-density option, density is measured in dwelling units per acre for single-family detached residential development; for recreational facilities such as golf courses and tennis and swim clubs lying within such developments, measure the built-upon area on the lot or common elements and divide by 3,000 square feet to obtain a dwelling units equivalency number. Density is measured in percentage of the land surface covered by built-upon area for all other residential and nonresidential development. When buildings for single-family detached residential uses and buildings for other uses are intermingled, the built-upon area measurement shall apply. When sections devoted to single-family detached residential buildings and other sections devoted to buildings for other uses are present in the same development, the developer may apply the appropriate measurements to the different uses or may use the built-upon area measurement for the entire development. When using the built-upon area measurement, assume 3,000 square feet of built-upon area per single-family detached residential lot to cover the built-upon area on the lot and in the portion of its driveway within the street right-of-way.

C. Measurement in High-density Option

The built-upon area measurement shall apply.

D. Density Averaging

When all of the following conditions are met, two non-contiguous zone lots, neither of which is publicly held land, may be treated in tandem for compliance with the density requirements contained within this section. Publicly held lands include but are not limited to dedicated drainageway and open space, parkland, or other lands obtained for watershed protection. One lot (the "giving lot") shall reduce its allowable development, and the other lot (the "receiving lot") shall increase its allowable development by a like amount.

1. An Application for a Watershed Density Averaging Certificate, on a form supplied by the Department of Water Resources, is submitted according to the established deadlines and procedures.
2. The two lots are within the same water supply watershed, irrespective of jurisdictional boundaries;

3. If one of the lots is located in the Watershed Critical Area, that lot shall not be developed beyond the applicable density limit listed in Table 12-6 or Table 12-7;
4. The overall density for both lots meets applicable density requirements of Table 12-6 or Table 12-7 and both lots meet applicable stormwater control requirements;

Commentary: *The density averaging formulas would be such that the sum of the maximum "by the watershed regulations book" numbers of dwelling units (DU) on the giving property and on the receiving property, divided by the sum of their acreages (Ac), would be equal to the sum of the reallocated numbers of dwelling units on the giving property and on the receiving property, divided by the sum of their acreages. The BUA formula would substitute square footages of BUA for numbers of dwelling units. To wit, maximum "by the book" $[DU \text{ Property A} + DU \text{ Property B}] / [Ac \text{ Property A} + Ac \text{ Property B}] = \text{reallocated } [DU \text{ Property A} + DU \text{ Property B}] / [Ac \text{ Property A} + Ac \text{ Property B}]$ and maximum "by the book" $[BUA \text{ Property A} + BUA \text{ Property B}] / [Ac \text{ Property A} + Ac \text{ Property B}] = \text{reallocated } [BUA \text{ Property A} + BUA \text{ Property B}] / [Ac \text{ Property A} + Ac \text{ Property B}]$.*

5. Built-upon areas are designed and located such that the Technical Review Committee finds that the design of each site is such that all of the following are achieved:
 - a. Minimize stormwater runoff impact to the receiving waters;
 - b. Minimize concentrated stormwater flow;
 - c. Maximize the use of sheet flow through vegetated areas;
 - d. Maximize the flow length through vegetated areas; and
 - e. Average and adjust any undisturbed areas, as required in [30-12-4.2\(B\)](#), Land Disturbance, to reflect the density averaging.
6. The built-upon areas on both lots are located in upland areas and away from surface waters and drainageways;
7. Both lots comply with the high density stream buffers;
8. The portions of the lots that are not being developed will remain in a vegetated or natural state, be placed in Density Averaging Easements (DAE) in accordance with Subsection 10) below, and be managed through one of the following means:
 - a. Conveyance to an owners' association as common elements,
 - b. Conveyance to a local government as a park, dedicated drainageway and open space or greenway; or
 - c. Placement under a permanent conservation or farmland preservation easement.
9. Metes and bounds descriptions of the areas to remain vegetated and limits on use shall be recorded as follows:
 - a. On a Density Averaging Plat;
 - b. If located within Common Elements, in the property's declaration of covenants, conditions, and restrictions;
 - c. If not located within Common Elements, in the individual deeds for each of the lots; and
 - d. With language making them irrevocable unless amended under the no net decrease provisions of this ordinance.
10. Density Averaging Easements (DAE) shall be platted over those areas that are not to be developed, which shall remain in a vegetated or natural state. Within such easements principal and accessory

buildings and structures are not permitted and the natural ground cover and the natural tree canopy must be preserved, with the following exceptions:

- a. Utilities and associated erosion control structures may be constructed and maintained;
- b. Normal maintenance by mechanical means is allowed for the removal of dead, diseased, deformed, poisonous, or noxious vegetation and pests harmful to health;
- c. Mechanical mowing of utilities areas is allowed to control growth;
- d. The removal of dead trees and logs is permitted, provided the stumps remain;
- e. The removal of briars and vines is permitted, provided the underbrush remains in its natural state;
- f. The removal of hazardous trees (as determined by the Water Resources Director on a case-by-case basis) is permitted, provided that the stump remains and each tree removed is replaced with a newly planted tree at a 1:1 ratio; and
- g. The Technical Review Committee may grant a Type 2 Modification (see 30-4-11) for changes to existing Density Averaging Easements.

Table 12-6 Density Limits in Upper and Lower Randleman Lake Watersheds in Dwelling Units Per Acre & Percent Built-Upon Area ^{1}

Watershed	Overlay Zone & Tier	Low-Density Option		High-Density Option
		DU/AC	%BUA	%BUA ^{2}
Lower Randleman Lake (WS-IV Critical Water Supply)	GWA	1 ^{4}	12	50
	WCA,1	See BUA	0.5	no HD option
	WCA,2	0.2	2.4	no HD option
	WCA,3,sewer	0.5	6	30
	no sewer	0.33	4	no HD option
	WCA,4,sewer	1 ^{4}	12	40
	no sewer	1 ^{4}	12	no HD option
Upper Randleman Lake (WS-IV Critical Water Supply)	GWA	2 ^{3}	24	70
	WCA,1	See BUA	0.5	no HD option
	WCA,2	0.2	2.4	no HD option
	WCA,3,sewer	2 ^{3}	24	34
	no sewer	0.33	4	no HD option
	WCA,4,sewer	2 ^{3}	24	40
	no sewer	1 ^{4}	12	no HD option

Table Notes:

{1} If, compared to the sidewalk installation requirements effective through December 31, 2002, the sidewalk installation requirements contained in Ordinance Number 02-239, effective January 1, 2003, increase the amount of sidewalk built-upon area, thereby exceeding the maximum built-upon area allowable under the High-Density Option or necessitating additional stormwater control, treatment, or mitigation measures, the Technical Review Committee may approve reductions to required street pavement widths, sidewalk widths, driveway widths, or off-street parking area, so as to result in the same built-upon area as under the previous sidewalk installation requirements.

{2} In a subdivision, the BUA maximum applies to the subdivision as a whole, including streets, lots, etc. The maximum BUA allowed by this column (assuming engineered stormwater controls are large enough) shall be allocated among streets, lots, etc. In single-family detached development, the allocation to each house lot shall be uniform. In other development, the allocation may vary among lots. In all cases, the final plat shall clearly state each lot's allocation and restrictive covenants shall call attention to these allocations. On new or extended thoroughfare streets, allocate enough BUA to cover 5 foot sidewalks on both sides; and on all other new or extended streets allocate enough to cover a 5 foot sidewalk on one side.

{3} Alternatively, if total area minus area in street right-of-way, divided by number of house lots, equals 20,000 square feet or more, that is Low Density.

{4} Alternatively, if total area minus area in street right-of-way, divided by number of house lots, equals 40,000 square feet or more, that is Low Density. In making determinations whether modification requests are minor or major, remember that all Greensboro's WCA Tier 4 and the portion of its Tier 3 lying more than 1/2 mile from normal pool elevation are beyond the minimum WCA required by EMC Rules.

**Table 12-7
Density Limits in Other Water Supply Watersheds
and Other Watershed Districts
in Dwelling Units Per Acre & Percent Built-Upon Area ^{1}**

Watershed District	Overlay Zone & Tier	Low-Density Option		High-Density Option
		DU/AC	%BUA	%BUA ^{3}
Greensboro & Polecat Creek (WS-III)	GWA	2 ^{4}	24	50(70 ^{2})
	WCA,1	See BUA	0.5	no HD option
	WCA,2	0.2	2.4	no HD option
	WCA,3,sewer	1 ^{5}	12	30
	no sewer	0.33	4	no HD option
	WCA,4,sewer	2 ^{4}	24	40
	no sewer	1 ^{5}	12	no HD option
Lake Mackintosh (WS-IV)	GWA	2 ^{4}	24	70
	WCA,1	See BUA	0.5	no HD option
	WCA,2	0.2	2.4	no HD option
	WCA,3,sewer	2 ^{4}	24	34
	no sewer	0.33	4	no HD option
	WCA,4,sewer	2 ^{4}	24	40
	no sewer	1 ^{5}	12	no HD option
Other Watershed Districts	Other Watershed Districts	2 ^{4}	24	>24

{1} If, compared to the sidewalk installation requirements effective through December 31, 2002, the sidewalk installation requirements contained in Ordinance Number 02-239, effective January 1, 2003, increase the amount of sidewalk built-upon area, thereby exceeding the maximum built-upon area allowable under the High-Density Option or necessitating additional stormwater control, treatment, or mitigation measures, the Technical Review Committee may approve reductions to required street pavement widths, sidewalk widths, driveway widths, or off-street parking area, so as to result in the same built-upon area as under the previous sidewalk installation requirements.

{2} Watershed plans approved on and after October 31, 1997, collectively covering up to 10% of the WS-III GWA, may receive allocations permitting up to 70% BUA. An approved watershed plan constitutes a completed application for such an allocation. An allocation is granted to a lot when a building permit is issued thereon and to a part of a subdivision when the engineered stormwater control structure for it has been substantially completed. An allocation is lost if the building permit or plat approval expires or is revoked.

{3} In a subdivision, the BUA maximum applies to the subdivision as a whole, including streets, lots, etc. The maximum BUA allowed by this column (assuming engineered stormwater controls are large enough) shall be allocated among streets, lots, etc. In single-family detached development, the allocation to each house lot shall be uniform. In other development, the allocation may vary among lots. In all cases, the final plat shall clearly state each lot's allocation and restrictive covenants shall call attention to these allocations. On new or extended thoroughfare streets, allocate enough BUA to cover 5 foot sidewalks on both sides; and on all other new or extended streets allocate enough to cover a 5 foot sidewalk on one side.

{4} Alternatively, if total area minus area in street right-of-way, divided by number of house lots, equals 20,000 square feet or more, that is Low Density.

{5} Alternatively, if total area minus area in street right-of-way, divided by number of house lots, equals 40,000 square feet or more, that is Low Density. In making determinations whether modification requests are minor or major, remember that all Greensboro's WCA Tier 4 and the portion of its Tier 3 lying more than 1/2 mile from normal pool elevation are beyond the minimum WCA required by EMC Rules.

(Amended by Ord. 10-161 on 12/1/10 and Ord. XX-XXX on 8/5/13)

30-12-3.12 Stormwater Quality Controls

A. Applicability

Where stormwater control is required by this Article, runoff from the following shall be controlled, and engineered stormwater controls and other best management practices (BMPs) shall be sized accordingly.

1. Newly built-upon areas and other new development on a site;
2. To the extent practicable, existing development on the site (consult with the Water Resources Director for a determination); and
3. Any other on-site runoff that flows into the structure or BMP.

B. Roadway and Driveway Connections

Driveway and roadway connections shall be treated to the maximum extent possible. Such connections will be evaluated on a site-by-site basis.

C. Methods of Stormwater Quality Control

1. Developments using the high-density option shall use engineered stormwater controls, which may consist of wet detention ponds or alternative stormwater management systems consisting of other treatment options, or a combination of options approved by the Director of the Division of Water Quality in accordance with 15A NCAC 2B.0104(g), and 15A NCAC 2H.1008(a). The design criteria for approval shall include control and treatment of the runoff from the first one inch of rain and a minimum of 85% average annual removal for Total Suspended Solids (TSS), as well as discharge the storage volume at a rate equal to or less than the predevelopment discharge rate for the one-year, 24-hour storm. Runoff volume drawdown time shall be a minimum of 48 hours but not more than 120 hours.
2. Developments using the low-density option, if they are required to have stormwater control, shall use either a method allowed under the high-density option or, as applicable, a method prescribed in [30-12-4](#) or [30-12-5](#). For low density development in Other Watershed Districts the use of vegetated conveyances shall be used to the maximum extent practicable.
3. New development that drains in whole or part to class NSW waters or waters assigned a Total Maximum Daily Load (TMDL) by North Carolina DWQ shall design and implement best stormwater management practices, up to and including the installation of engineered stormwater controls, that reduce nutrient loading, or other pollutant of concern, while still meeting other requirements of this ordinance. The Water Resources Director shall have final approval of any proposed structural best management practice (BMP) required to meet state mandated nutrient loading or other pollutant of concern reduction measures in order to facilitate treatment of the nutrient or pollutant of concern to the maximum extent practicable.

D. Water Quality Control Exemptions

1. Development in Other Watershed Districts that cumulatively disturbs less than one acre and is not part of a Larger Common Plan of Development, Redevelopment or Sale is exempt from the stormwater quality control provisions of this section. Development that cumulatively disturbs less than one acre is not exempt if such activities are part of a Larger Common Plan of Development, Redevelopment or Sale, even though multiple, separate or distinct activities take place at different times on different schedules.
2. Development that meets all of the following requirements is exempt from the stormwater quality control provisions of this section:
 - a. The division of a tract in single ownership;
 - b. The tract area is not greater than 2 acres;
 - c. The division does not result in more than 3 lots;
 - d. No street right-of-way dedication is involved;
 - e. The resultant lots are equal to or exceed the standards of this ordinance; and
 - f. The development does not cumulatively disturb one acre or more.

30-12-4 Watershed Critical Areas (WCA)

30-12-4.1 General Provisions

A. Watershed Critical Area

The Watershed Critical Area is a district covering the portion of the watershed adjacent to a designated existing or proposed water supply intake or reservoir where risk associated with pollution is greater than from the remaining portions of the watershed. The WCA boundary shall not be less than one-half mile from the normal pool elevation and draining to existing or proposed designated reservoirs.

B. Divisions Within the Watershed Critical Area

The WCA consists of 4 divisions as follows:

1. Tier 1

- a. Tier 1 consists of those lands within 200 feet of the existing or proposed normal pool elevation and those lands within one-half mile (High Point Lake, Oak Hollow Lake, Lake Brandt) or one mile (Lake Townsend) upstream of water intake structure(s).
- b. Tier 1 areas are intended for public purpose and should remain undisturbed.

2. Tier 2

- a. Tier 2 consists of those lands lying within an area bounded by Tier 1 and a line parallel to and 750 feet from the normal pool elevation.
- b. Tier 2 areas are intended primarily for public purpose.

3. Tier 3

Tier 3 consists of those lands lying within an area bounded on its inner edge by Tier 2 and on its outer edge by a line parallel to and 3,000 feet from the normal pool elevation, or by the WCA boundary, whichever comes first.

4. Tier 4

Tier 4 consists of those lands lying in the area between the outer boundary of Tier 3 and the WCA boundary.

30-12-4.2 Land Disturbance Minimization

1. Soil Erosion and Sedimentation Control Plan

See [30-12-6.1](#) to determine when a soil erosion and sedimentation control plan is required.

2. Street Standards

Refer to Article VI for the minimum street standards. To the extent practicable, the construction of new roads in the WCA should be avoided.

B. Land Disturbance

1. No land-disturbing activity is allowed within channel drainageways carrying 17 cubic feet per second or more based upon the 100-year storm event, 15% slopes adjacent to drainageways, water quality conservation easements, or undisturbed easements (UDE), except for road crossings, greenway, and trail crossings, utilities, watershed devices, and soil erosion and sedimentation control devices associated with road crossing and utility construction.

2. Cut or fill activities resulting in slopes of 33% or more are not allowed, except to meet minimum safety standards for roadways and trails or minimum building code or health code requirements.
3. The transfer of stormwater from a drainage area of 5 acres or greater by piping or channeling between sub-basins within the WCA is not permitted unless approved by the Technical Review Committee. The piping or channeling of stormwater from a WCA to a GWA or to a non-watershed basin is allowed.
4. A portion of the site shall remain in an undisturbed state in accordance with the following percentages:

Tier	Undisturbed Limits
Tier 1	90%
Tier 2	90%
Tier 3	20%
Tier 4	15%

- a. At least 25% of the undisturbed areas are to include land that is wooded or reforested in accordance with the following:
 - i. Reforestation shall include a minimum of one tree per 200 square feet of surface area and shall be made up of a mixture of deciduous hardwood and evergreen trees that are a minimum of 4 feet tall at planting and approved by the Water Resources Director.
 - ii. The trunk of any required tree shall be no closer than 10 feet to any other tree.
- b. All undisturbed areas are to be dedicated as undisturbed easements (UDE) in accordance with 30-12-4.2(C)1c).
- c. When undisturbed areas are located in subdivisions with more than 2 lots, the undisturbed area shall be located within common elements and an owners' association shall be required for the purposes of ownership and maintenance responsibility.
- d. The common elements for undisturbed areas shall have a minimum width of 24 feet, and shall be accessible to all homeowners in the development.

C. Protection of Fragile Areas

1. Slopes Greater than 15% and Wetlands

- a. Slopes greater than 15% lying adjacent and parallel to natural drainageways or streams carrying 17 cubic feet per second or more based upon the 100-year storm event, and wetlands, shall remain in a natural and undisturbed condition except for road, greenway, or trail crossings, utilities, watershed devices, and soil erosion and sedimentation control devices associated with road crossing and utility construction.
- b. Dedication of these areas to the local jurisdiction and the public as drainageway and open space may be required wherever authorized by any provision in local ordinances.
- c. Where such dedication is not required, an undisturbed easement (UDE) shall be platted over such undisturbed areas, wetlands and slopes. Within this easement the natural ground cover and the natural tree canopy must be preserved, with the following exceptions:
 - i. utilities and associated erosion control structures can be constructed and maintained;
 - ii. normal maintenance by mechanical means is allowed for the removal of dead, diseased, deformed, poisonous, or noxious vegetation and pests harmful to health;
 - iii. mechanical mowing of utilities areas is allowed to control growth;
 - iv. the removal of dead trees and logs is permitted, provided the stumps remain;

- v. the removal of briars and vines is permitted, provided the underbrush remains in its natural state;
 - vi. accessory buildings/structures, including fences, are not permitted to encroach into the easement; and
 - vii. the removal of hazardous trees (as determined by the Water Resources Director on a case-by-case basis) is permitted, provided that the stump remains and each tree removed is replaced with a newly planted tree at a 1:1 ratio.
- d. Where such areas have been dedicated as water quality conservation easements, the natural ground cover and natural tree canopy must be preserved, with the following exceptions:
- i. the cutting or trimming of overcrowded trees is allowed provided that no trees in excess of 3 inches in diameter as measured 12 inches from the ground are removed;
 - ii. utilities and associated erosion control structures can be constructed and maintained;
 - iii. normal maintenance by mechanical means is allowed for the removal of dead, diseased, deformed, poisonous, or noxious vegetation and pests harmful to health; and
 - iv. mechanical mowing of utilities areas is allowed to control growth.

2. Drainage

- a. Drainage shall be provided by means of open channels.
- b. All such areas shall have protected channels or remain in a natural and undisturbed state, except for road crossings, trails, utilities, watershed devices, and soil erosion and sedimentation control devices associated with road crossing and utility construction.

D. Soils and Terrain

Development on the best soils and terrain of any site is encouraged.

E. Clustering

Clustering of residential development may be required by the Technical Review Committee in accordance with 30-7-3.3.

(Amended by Ord. 10-161 on 12/1/10)

30-12-4.3 Spill Risk Reduction

A. Prohibited Uses

The following uses are prohibited in a WCA district:

Table 12-8	
Description	NAICS Industry Group Major Group Numbers
(1) Agricultural Uses	
Animal Feeder/Breeder	0210
Chemical Treatment and Fertilizer Application for Crops, Weed Control for Crop Operations, including Aerial Crop Dusting	0710, 0721
(2) Business, Professional and Personal Services	
Automobile Rental or Leasing	7510
Automobile Repair Services, Major	0000
Automobile Repair Services, Minor	0000
Automobile Towing and Storage Services	7549
Boat Repairs	3730

Table 12–8

Description	NAICS Industry Group Major Group Numbers
Car Washes	7542
Commercial Chemical and Biological Research	8731
Equipment Repair, Heavy	7690
Agricultural Equipment Repair Boiler Cleaning and Repair Cesspool Cleaning Engine Repair, except automotive Farm Machinery Repair Industrial Truck Repair Machinery Cleaning Motorcycle Repair Service Rebitting Repair of Service Station Equipment Sewer Cleaning and Rodding Tank and Boiler Cleaning Service Tank Truck Cleaning Service Tractor Repair Welding Repair Shops	
Furniture Stripping or Refinishing (including secondary or accessory operations)	7641
Heavy Construction Equipment Rental and Leasing	7350
Laundromats, Coin-Operated	7215
Laundry or Dry Cleaning Plants	7211, 7216, 7217, 7218
Lawn Care, Lawn Fertilizing Services, Lawn Spraying Services, Ornamental Shrub & Tree Services with Spraying	0780
Pest or Termite Control Services	7342
Septic Tank Services	7699
Truck Driving Schools	8249
Truck and Utility Trailer Rental and Leasing, Light	0000
Truck Tractor and Semi Rental and Leasing, Heavy	0000
Truck Washing	7542
(3) Retail Trade	
Convenience Stores with fuel pumps	5411
Fuel Oil Sales	5980
Motor Vehicle Sales (new and used)	5511
Motorcycle Sales	5571
Recreational Vehicle Sales	5561
Service Stations, Gasoline	5541
Truck Stops	5541
(4) Wholesale Trade	
Agricultural Chemicals, Pesticides, Fertilizers	5191
Chemical and Allied Products	5169
Motor Vehicles	5012
Nursery Stock, Plants Potted	5193
Paints and Varnishes	5198
Petroleum and Petroleum Products	5170
Scrap and Waste Materials	5093
(5) Transportation, Warehousing, and Utilities	
Air Transportation Facilities	4500
Bus Terminal and Service Facilities	4100, 4170
Hazardous and Radioactive Waste (transportation, storage, and disposal)	4953
Inert Debris Landfills, Major	0000
Petroleum Contaminated Soil Remediation Disposal Sites	0000
Pipelines, except Natural Gas	4600
Railroad Terminals or Yards	4010
Recycling Processing Centers	0000
Refuse and Raw Materials Hauling	4212
Sanitary Sewer and Water Treatment Plant Sludge Application Sites	0000
Sewage Treatment Plants	4952
Solid Waste Disposal (nonhazardous)	4953
Trucking or Freight Terminals	4230, 4213

Table 12–8

Description	NAICS Industry Group Major Group Numbers
(6) Manufacturing and Industrial Uses	
Animal Slaughter or Rendering	0000
Arms and Weapons	3480
Asbestos, Abrasive, and Related Products	3290
Asphalt Plants	2951
Batteries	3690
Chemicals, Paints and Allied Products	2800
Concrete, Cut Stone, and Clay Products	3240, 3270
Cement, Hydraulic	3241
Contractors, Heavy Construction	1600
Contractors, Special Trade	1700
Dairy Products	2020
Fats and Oils, Animal	2077
Fats and Oils, Plant	2070
Fish, Canned, Cured or Frozen	2091
Leather and Leather Products (tanning)	3110
Magnetic and Optical Recording Media	3695
Meat and Poultry, Packing and Processing (no rendering)	2010
Metal Coating and Engraving	3470
Mining and Quarrying	1000
Paper Products (no coating or laminating)	2670
Paper Products (coating or laminating)	2670
Petroleum and Related Products	2900
Primary Metal Products and Foundries	3300
Pulp and Paper Mills	2610
Rubber and Plastics, Misc.	3000
Rubber and Plastics, Raw	3000
Salvage Yards, Auto Parts	5015
Salvage Yard, Scrap Processing	5093
Solvent Recovery	7389
Surface Active Agents	2843
Textile Products (no dyeing and finishing)	2200
Textile Products (with dyeing and finishing)	2260

B. Containment Structures

1. Storage tanks for fuels and chemicals and associated pumping and piping shall be provided a spill containment system.
2. Such containment systems shall be of sufficient volume to contain 100% of all the tank(s) contents stored in the area and shall have a leak detection system installed.
3. The containment system shall be approved by the Water Resources Director and the Fire Chief.
4. Such tanks and containment structures shall not be placed closer than 1,000 feet to the normal pool elevation of the existing or proposed reservoir.

C. Underground Storage Tanks

Underground storage tanks for fuels and chemicals shall not be permitted except as approved by the Planning Board following a finding that overall water quality protection will be enhanced as a result.

D. Point Source Discharges

1. No expansion of any existing private wastewater facilities or establishment of any new public or private wastewater treatment plants of any kind shall be permitted. On-site individual residential septic systems approved by the Guilford County Health Department are permitted.
2. Industrial pre-treatment facilities which prepare wastewater for discharge into a public sewer system shall be permitted in WCA districts.

30-12-4.4 Stormwater Quality Control in WCA

A. Low-density Option

Stormwater runoff from built-upon area shall be controlled as follows:

1. If the built-upon area is 6% or less in the Lower Randleman Lake WCA or is 12% or less in any other WCA, a permanent infiltration area meeting the guidelines in the *Watershed Manual* may be used or an engineered stormwater control or other BMP meeting the performance standards in 30-12-3.12(C)1) may be used.
2. If the built-upon area exceeds 12%, a wet detention pond or other BMP meeting the performance standards in 30-12-3.12(C)1) shall be used.

B. High-density Option

See 30-12-3.12(C)1).

30-12-5 General Watershed Areas (GWA) And Other Watershed Districts*

30-12-5.1 General Provisions

A. Performance Standards

The watershed development plan for any new development in the GWA or Other Watershed Districts shall be prepared and submitted in accordance with the requirements in 30-12-5.3 (General Watershed Area and Other Watershed District Performance Standards).

B. Stormwater Quality Control

For developments using the high-density option, see 30-12-3.12(C)1) in Methods of Stormwater Quality Control. Developments using the low-density option may use a method allowed in that section or a retention pond, natural infiltration area, filter basin, or other BMP found by the Water Resources Director to be similarly effective.

30-12-5.2 Prohibited Uses

No new discharging landfills shall be permitted.

30-12-5.3 General Watershed Area and Other Watershed District Performance Standards

Table 12-9	
Development Type	Schedule
1) Low-density option (see 30-12-3.11 for density limits)	General Watershed Area And Other Watershed District Scoresheet (30-12-5.4). A passing score is 120 or more points; or Engineer's Certification (see 30-12-3.11)
2) High-density option	Engineer's Certification (see 30-12-3.11)

30-12-5.4 General Watershed Area and Other Watershed District Performance Scoresheet

The following scoresheet must be used in rating development in the GWA:

Table 12-10			
Maximum Points	Factor	Point Value	Points Earned
25	1. Clustering		
	Minimal	10	
	Moderate	15	
	Major	20	
25	2. Built-Upon Area		
	0-3%	25	
	3.01-7%	20	
	7.01-10%	15	
	10.01-15%	10	
25	3. Proximity to Floodway as Defined by FEMA		
	15.01-20%	5	
	More than 2000 Feet	25	
	1000-2000 Feet	20	
	500-1000 Feet	15	
10	4. Soil limitations as Defined on Pg. 29 and Tbl. 7, Pg. 57 Guil. Co. Soil Survey		
	100-500 feet	10	
	50-100 Feet	5	
25	5. Drainage-Protect and Use Natural Drainageways		
	Slight	10	
	Moderate	5	
	Piped or Improved Drainage With Riprap	5	
25	6. Average Pre-development Slope of Land Subject to Grading or Filling		
	Dispersed Drainage or Protected Drainageways	10	
	Dispersed Drainage and Protected Drainageways (or Dispersed and No Drainageway)	20	
	Enhanced and Protected Natural Drainageways	25	
25	7. Stream Buffer Along Drainageways		
	0-6%	25	
	6.01-10%	20	
25	8. Stormwater Runoff Control Strategies		
	10.01-15%	5	
	No Drainageway Present on Property or Within 50 Feet	25	
	50 Feet, All Wooded Except for Sewers and Required Streets	25	
	50 Feet, At Least Half Wooded	20	
25	9. Sewage Disposal		
	50 feet, No Grading or Fill Except For Sewers and Required Streets	15	
10	10. Street & Driveway Design		
	40 Feet, Same Restrictions	10	
10	11. Wooded Area		
	Divide the % of Stormwater (Runoff) Controlled by 4		
33	9. Sewage Disposal		
	Public Sewer Service	10	
10	10. Street & Driveway Design		
	With Vegetated Ditches	10	
33	11. Wooded Area		
	With Piped Drainage and/or Curb and Gutter and Energy Dissipators	5	

Table 12–10

Maximum Points	Factor	Point Value	Points Earned
	Divide the % of Tract to Remain Wooded by 3 and % Thickly Planted in Tree Stands by 6		
12. Grading Reduction and Other bonuses			
	NR:<1 Driveway per 300 Feet of Frontage	5	
	All: Creation of Wetlands	Up to 20	
	All: Other Measures	Up to 10	
	Total		

Notes:

- (1) All plans must have at least 120 points and meet all other requirements to be approved.
 - (2) Use this table for low-density option only.
- Abbreviations: BUA = Built-upon area, SF=single-family detached, MF=multi-family, NR=nonresidential, All=all types

A. Timing of Rating

1. **Subdivisions**
Rated prior to approval of preliminary plat.
2. **Site Plans**
Rated prior to approval of site plan unless lot was prequalified by subdivision.
3. **Projects without Site Plans**
Rated prior to approval of the building permit.

B. Definitions, Explanations, and Standards

1. **Minimal Clustering**
Means: in SF that there is 15% or more open space; in MF & NR that buildings and parking are concentrated away from streams and steep slopes.
2. **Moderate Clustering**
Means: in SF that there is 25% or more open space; in MF that the Minimal Clustering criteria are met and that at least half of the units are in buildings of 2 stories or more; in NR that Minimal Clustering criteria are met and that parking uses 17-foot space depth and 24 foot aisles, or 8.5 foot space width.
3. **Major Clustering**
Means: in SF that there is 35% or more open space or that average lot size is not more than 2,000 sq. ft. larger than the minimum allowed; in MF that at least 75% of the units are in buildings of 2 stories or more, that the number of parking spaces is no more than 5% higher than the ordinance minimum, and that there is no BUA that could be marked to form additional parking spaces; in NR that the Moderate Clustering Criteria are met, as are the same parking requirements as in MF.
4. **Exceptional Clustering**
Means: in SF that there is 45% or more open space or that the average lot size is no more than 1,000 sq. ft. larger than the minimum allowed; in MF that the Major Clustering criteria are met and that all units are in buildings of 2 stories or more and some are in buildings of 3 stories or more; in NR that the Major Clustering criteria are met and that at least 20% of the parking spaces are inside buildings of 2 stories or more.
5. **Built-upon Area**
If, compared to the sidewalk installation requirements effective through December 31, 2002, the sidewalk installation requirements contained in Ordinance Number 02-239, effective January 1, 2003, increase the amount of sidewalk built-upon area, thereby reducing the number of built-upon area points earned, the Technical Review Committee may approve reductions to required street pavement

widths, sidewalk widths, driveway widths, or off-street parking area, so as to result in the same built-upon area as under the previous sidewalk installation requirements.

6. Proximity to Floodway

If land is dedicated to the city as drainageway and open space, measure from the downhill edge of the land not dedicated. If a street crossing that dedication is required by the city, ignore it in measuring.

7. Drainage

- a. Protected Drainageway means drainage is channeled by pervious devices such as sod waterways, berms, channels, or swales which have been constructed to resist soil erosion by either vegetating, netting, rip-rapping, or a combination of those, and which allows infiltration of water into the soil.
- b. Dispersed Drainage means spread out, as opposed to collecting the runoff in channels, so as to effect increased sheet flow and overland flow.
- c. Improved Drainageway means channeled by impervious surfaces such as curb and gutter or concrete (gunnite, bituminous, etc.) channels.
- d. Enhanced Drainageway means carried by existing natural drainageways which have been enhanced to resist soil erosion, including stream bank degradation.

8. Average Slope

Means the maximum inclination of the land surface from the horizontal as measured in percentage slope.

9. Land is Subject to Grading or Filling

Means if it is in street R/W, in a lot or common elements but not covered by a water quality conservation easement, or in an area that will be disturbed before being dedicated to the public.

10. Sewage Disposal

No points will be allowed for on-site septic tank systems or private sewage treatment systems.

11. Wooded Area

Thickly Planted in Tree Stands means that trees (but not shrubs) are planted at a Type A number and size planting rate. [Sample Calculation: if 30% remains wooded, 30 divided by 3=10 points; and if another 18% is thickly planted in tree stands, 18 ÷ by 6=3 points; total score is 13 points.]

12. Grading

Other measures are measures not covered above but which are deemed effective by, and assigned up to 10 total points by, the Technical Review Committee.

30-12-6 Soil Erosion and Sedimentation Control

30-12-6.1 General Requirements

A. Plan and Permit Required

No person shall initiate any land-disturbing activity without a soil erosion and sedimentation control plan and a grading permit approved by the city, if the land-disturbing activity:

- 1. Uncovers more than one acre (lands under one ownership or diverse ownership being developed as a unit shall be aggregated);
- 2. Will take place on highly erodible soils with a "k" factor greater than 0.36 in a Watershed Critical Area;
- 3. Includes a pond or retention structure in a Watershed Critical Area; or
- 4. Will take place in Tier 1 or Tier 2 of a Watershed Critical Area.

B. Protection of Property

Persons conducting land-disturbing activity shall take all reasonable measures to protect all public and private property from damage caused by such activity. This includes installing measures to maintain sediment on site for all activities even if below the formal permitting threshold.

C. More Restrictive Rules Shall Apply

Whenever conflicts exist between federal, state, or local laws, ordinances, or rules, the more restrictive provision shall apply.

30-12-6.2 Basic Control Objectives

A soil erosion and sedimentation control plan may be disapproved pursuant to 30-12-6.12(H) if the plan fails to address the following control objectives:

A. Identify Critical Areas

On-site areas which are subject to severe erosion, and off-site areas which are especially vulnerable to damage from erosion and/or sedimentation, are to be identified and receive special attention;

B. Limit Time of Exposure

All land-disturbing activity is to be planned and conducted to limit exposure to the shortest feasible time;

C. Limit Exposed Areas

All land-disturbing activity is to be planned and conducted to minimize the size of the area to be exposed at any one time;

D. Control Surface Water

Surface water runoff originating upgrade of exposed areas should be controlled to reduce erosion and sediment loss during the period of exposure;

E. Control Sedimentation

All land-disturbing activity is to be planned and conducted so as to prevent off-site sedimentation damage; and

F. Manage Stormwater Runoff

When the increase in the velocity of stormwater runoff resulting from a land-disturbing activity is sufficient to cause accelerated erosion of the receiving watercourse, plans are to include measures to control the velocity at the point of discharge so as to minimize accelerated erosion of the site and increased sedimentation of the stream.

30-12-6.3 Mandatory Standards for Land-disturbing Activity

No land-disturbing activity that is subject to control under this section may be undertaken except in accordance with the following mandatory standards:

A. Buffer Zone

No land-disturbing activity during periods of construction or improvement to land shall be permitted in proximity to a lake or natural watercourse unless a buffer zone is provided along the margin of the watercourse of sufficient width to confine visible sedimentation within the 25% of the buffer zone nearest the land-disturbing activity. Unless otherwise expressly stated the width of a buffer zone is measured from the edge of the water to the nearest edge of the disturbed area, with the 25% of the strip nearer the land-disturbing activity containing natural or artificial means of confining visible sedimentation.

B. Graded Slopes and Fills

The angle for graded slopes and fills shall be no steeper than 2:1 slope if they are to be stabilized with vegetative cover. Slopes or fills steeper than 2:1 slope must be protected by structures. In any event, slopes left exposed shall, within 15 days of completion of any phase of grading, be planted or otherwise provided with ground cover, devices, or structures sufficient to restrain erosion.

C. Ground Cover

Whenever land-disturbing activity is undertaken on a tract comprising more than one acre, if more than one acre is uncovered, the person conducting the land-disturbing activity shall install such sedimentation and erosion control devices and practices as are sufficient to retain the sediment generated by the land-disturbing activity within the boundaries of the tract during construction upon and development of said tract; and he shall plant or otherwise provide a permanent ground cover sufficient to restrain erosion after completion of construction or development. Except as provided in 30-12-6.4(B)5), provisions for a ground cover sufficient to restrain erosion must be accomplished within 15 business days or 30 calendar days following completion, whichever period is shorter.

D. Prior Plan

Approval No person shall initiate any land-disturbing activity on a tract if more than one acre is to be uncovered unless, 30 or more days prior to initiating the activity, a soil erosion and sedimentation control plan for such activity has been filed, and such plan has been approved by the city.

30-12-6.4 Design and Performance Standards

A. Design for 10-Year Storm

Except as provided in 30-12-6.4(B)2), soil erosion and sedimentation control measures, structures, and devices shall be so planned, designed, and constructed as to provide protection from the calculated maximum peak rate of runoff from the 10-year storm. Runoff rates shall be calculated using the procedures in the USDA, Soil Conservation Service's "National Engineering Field Manual for Conservation Practices" or other acceptable calculation procedures.

B. High Quality Water Zones

In High Quality Water (HQW) zones the following design standards shall apply:

1. Uncovered areas in HQW zones shall be limited at any time to a maximum total area within the boundaries of the tract of 20 acres. Only the portion of the land-disturbing activity within a HQW zone shall be governed by this subsection. Larger areas may be uncovered within the boundaries of the tract with the written approval of the Director (DENR).
2. Soil erosion and sedimentation control measures, structures, and devices within HQW zones shall be so planned, designed, and constructed to provide protection from the runoff of the 25-year storm which produces the maximum peak rate of runoff as calculated according to procedures in the USDA, Soil Conservation Service's "National Engineering Field Manual for Conservation Practices" or according to procedures adopted by any other agency of this state or the United States or any generally recognized organization or association.
3. Sediment basins within HQW zones shall be designed and constructed such that the basin will have a settling efficiency of at least 70% for the 40 micron (0.04 mm) size soil particle transported into the basin by the runoff of that 2-year storm which produces the maximum peak rate of runoff as calculated according to procedures in the USDA, Soil Conservation Service's "National Engineering Field Manual for Conservation Practices" or according to procedures adopted by any other agency of this state or the United States or any generally recognized organization or association.
4. Newly constructed open channels in HQW zones shall be designed and constructed with side slopes no steeper than 2 horizontal to one vertical if a vegetative cover is used for stabilization unless soil conditions permit a steeper slope or where the slopes are stabilized by using mechanical devices, structural devices, or other acceptable ditch liners. In any event, the angle for side slopes shall be sufficient to restrain accelerated erosion.
5. Ground cover sufficient to restrain erosion must be provided for any portion of a land-disturbing activity in a HQW zone within 15 working days or 30 calendar days following completion of construction or development, whichever period is shorter.

30-12-6.5 Stormwater Outlet Protection

A. Intent

Stream banks and channels downstream from any land-disturbing activity shall be protected from increased degradation by accelerated erosion caused by increased velocity of runoff from the land-disturbing activity.

B. Performance Standard

Persons shall conduct land-disturbing activity so that the post-construction velocity of the 10-year storm runoff in the receiving watercourse to the discharge point does not exceed the greater of:

1. The velocity established by 30-12-6.8; or
2. The velocity of 10-year runoff in the receiving watercourse prior to development.
3. If conditions (1) or (2) above cannot be met, then the receiving watercourse to and including the discharge point shall be designed and constructed to withstand the expected velocity anywhere the velocity exceeds the "prior to development" velocity by 10%.

C. Acceptable Management Measures

Measures applied alone or in combination to satisfy the intent of this section are acceptable if there are no objectionable secondary consequences. The city recognizes that the management of stormwater runoff to minimize or control downstream channel and bank erosion is a developing technology. Innovative techniques and ideas will be considered and may be used when shown to have the potential to produce successful results. Some alternatives are to:

1. Avoid increases in surface runoff volume and velocity by including measures to promote infiltration to compensate for increased runoff from areas rendered impervious;
2. Avoid increases in stormwater discharge velocities by using vegetated or roughened swales and waterways in lieu of closed drains and high velocity paved sections;
3. Provide energy dissipators at outlets of storm drainage facilities to reduce flow velocities to the point of discharge. These may range from simple riprapped sections to complex structures; or
4. Protect watercourses subject to accelerated erosion by improving cross sections and/or providing erosion-resistant lining.

D. Exceptions

Subsections (B) and (C) above shall not apply where it can be demonstrated that stormwater discharge velocities will not create an erosion problem in the receiving watercourse.

30-12-6.6 Borrow and Waste Areas

When the person conducting the land-disturbing activity is also the person conducting the borrow or waste disposal activity, areas from which borrow is obtained and which are not regulated by the provisions of the Mining Act of 1971, and waste areas for surplus materials other than landfills regulated by the Department's Division of Solid Waste Management, shall be considered as part of the land-disturbing activity where the borrow material is being used or from which the waste material originated. When the person conducting land-disturbing activity is not the person obtaining the borrow and/or disposing of the waste, these areas shall be considered a separate land-disturbing activity.

30-12-6.7 Access and Haul Roads

Temporary access and haul roads, other than public roads, constructed or used in connection with any land-disturbing activity shall be considered a part of such activity.

30-12-6.8 Operations in Lakes or Natural Watercourses

Land-disturbing activity in connection with construction in, on, over, or under a lake or natural watercourse shall be planned and conducted to minimize the extent and duration of disturbance of the stream channel. The relocation of a stream, where relocation is an essential part of the proposed activity, shall be planned and executed so as to minimize changes in the stream flow characteristics, except when justification for significant alteration to flow characteristic is provided. The U.S. Army Corps of Engineers shall be notified by the developer of any planned operation in lakes or natural watercourses for possible issuance of Section 404 or other permits.

**Table 12–11 Maximum Permissible Velocity
for Stormwater Discharges**

Material	Maximum Permissible Velocities (Per Second)	
	Feet	Meters
Fine sand (noncolloidal)	2.5	0.8
Sandy loam (noncolloidal)	2.5	0.8
Silt loam (noncolloidal)	3.0	0.9
Ordinary firm loam	3.5	1.1
Fine gravel	5.0	1.5
Stiff clay (very colloidal)	5.0	1.5
Graded, loam to cobbles (noncolloidal)	5.0	1.5
Graded, silt to cobbles	5.5	1.7
Alluvial silts (noncolloidal)	3.5	1.1
Alluvial silts (colloidal)	5.0	1.5
Coarse gravel (noncolloidal)	6.0	1.8
Cobbles and shingles	5.5	1.7
Shales and hard pans	6.0	1.8

Source:

Adapted from recommendations by Special Committee on Irrigation Research, American Society of Civil Engineers, 1926, for channels with straight alignment. For sinuous channels, multiply allowable velocity by 0.95 for slightly sinuous, by 0.9 for moderately sinuous channels, and by 0.8 for highly sinuous channels.

30-12-6.9 Responsibility for Maintenance

During the development of a site, the person conducting the land-disturbing activity shall install and maintain all temporary and permanent soil erosion and sedimentation control measures as required by the approved plan, by any provision of this section, the Act, or by any order adopted pursuant to this section or the Act. After site development, the landowner or person in possession or control of the land shall install and/or maintain all necessary permanent soil erosion and sedimentation control measures, except those measures installed within a road or street right-of-way or easement accepted for maintenance by a governmental agency.

30-12-6.10 Additional Measures

Whenever the city determines that significant sedimentation is occurring as a result of land-disturbing activity, despite application and maintenance of protective practices, the person conducting the land-disturbing activity will be required to and shall take additional protective action.

30-12-6.11 Existing Uncovered Areas

A. Applicability

All uncovered areas existing on the effective date of the regulations of this section that are the result of land-disturbing activity, which exceed one acre, which are subject to continued accelerated erosion, and which are causing off-site damage from sedimentation, shall be provided with a ground cover or other protective measures, structures, or devices sufficient to restrain accelerated erosion and control off-site sedimentation.

B. Notice of Violation

The city will serve upon the landowner or other person in possession or control of the land, a written notice of violation by registered or certified mail, return receipt requested, or other means reasonably calculated to give actual notice. The notice will set forth the measures needed to comply and will state the time within which such measures must be completed. In determining the measures required and the time allowed for compliance, the authority serving notice shall take into consideration the economic feasibility, technology, and quantity of work required and shall set reasonably attainable time limits for compliance.

C. Requiring Erosion Control Plan

The city reserves the right to require preparation and approval of a soil erosion and sedimentation control plan in any instance where extensive control measures are required.

D. Exemption

This rule shall not require ground cover on cleared land forming the future basin of a planned reservoir.

30-12-6.12 Soil Erosion and Sedimentation Control Plans

A. Applicability

A soil erosion and sedimentation control plan shall be prepared for all land-disturbing activities subject to this section whenever the proposed activity is to be undertaken on a tract comprising more than one acre, if more than one acre is to be uncovered.

B. Preparation of Plan

The soil erosion and sedimentation control plan shall be filed with the city. The plan shall be prepared by, and shall bear the seal and signature of, a registered professional engineer, architect, landscape architect, or a registered surveyor to the extent permitted by North Carolina laws, at a scale not smaller than one inch equals 200 feet.

C. Submission of Plan

Persons conducting land-disturbing activity on a tract which covers one or more acres shall file 3 copies of the soil erosion and sedimentation control plan with the city, at least 30 days prior to beginning of such activity, and shall keep another copy of the plan on file at the job site. After approving the plan, if the city, either upon review of such plan or on inspection of the job site, determines that a significant risk of accelerated erosion or off-site sedimentation exists, the city will require a revised plan. Pending the preparation of the revised plan, work shall cease or shall continue under conditions outlined by the appropriate authority.

D. State Division of Water Quality Review

Any land disturbing activity that involves the utilization of ditches for the purpose of de-watering or lowering the water table must be forwarded to the state Division of Water Quality.

E. Conservation District Review

The Guilford Soil and Water Conservation District, within 20 days of receipt of any plan, may review such plan and submit its comments and recommendations to the city. Failure of the soil and water conservation district to submit its comments and recommendations within these 20 days will not delay final action on the plan.

F. City Review

1. The city will review each complete plan submitted to them and within 30 days of receipt thereof, will notify the person submitting the plan that it has been approved, approved with modifications,

approved with performance reservations, or disapproved. Failure to approve or disapprove a complete soil erosion and sedimentation control plan within 30 days of receipt shall be deemed approval. Denial of a plan must specifically state in writing the reasons for denial. The city must approve or deny a revised plan within 15 days of receipt or it is deemed to be approved. If, following commencement of a land-disturbing activity pursuant to an approved plan, the city determines that the plan is inadequate to meet the requirements of this section, the city may require such revisions as are necessary to comply with this section.

2. The approval of a grading permit and the erosion control plan is conditioned on the applicant's compliance with federal and state water quality laws, regulations and rules. It is the applicant's responsibility to obtain compliance with all federal and state water quality laws, regulations, and rules. If a grading permit is issued but at a later date the Water Resources Director finds that the applicant has not complied with all federal and state water quality laws, regulations, and rules, the city may revoke the applicant's permit and or take enforcement action.

G. Plan Requirements

1. The plan required by this section shall contain architectural and engineering drawings, maps, assumptions, calculations, and narrative statements as needed to adequately describe the proposed development of the tract and the measures proposed to ensure compliance with the requirements of this section. Plan content may vary to meet the needs of specific site requirements. Detailed guidelines for plan preparation can be found in the application as published and amended by the Planning and Community Development Department.
2. The plan submission shall also include a copy of any required Federal or State permits issued for the site.

H. Grounds for Plan Disapproval

A soil erosion and sedimentation control plan may be disapproved upon a finding that an applicant, or any parent or subsidiary corporation if the applicant is a corporation:

1. Is conducting or has conducted land-disturbing activity without an approved plan, or has received notice of violation of a plan previously approved by the commission or the city, and has not complied with the notice within the time specified in the notice;
2. Has failed to pay a civil penalty assessed pursuant to the Act or this section which is due and for which no appeal is pending;
3. Has been convicted of a misdemeanor pursuant to [NCGS 113A-64\(b\)](#) or any criminal provision of this section.
4. Has failed to substantially comply with state rules adopted pursuant to the Act or regulations of this section.
5. The applicant has failed to comply with federal and state water quality laws, regulations, and rules.
6. For purposes of this subsection an applicant's record may be considered for only the 2 years prior to the application date.

I. Application Amendments

Applications for amendment of a soil erosion and sedimentation control plan in written and/or graphic form may be made at any time under the same conditions as the original application. Until such time as said amendment is approved by the city, the land-disturbing activity shall not proceed except in accordance with the plan as originally approved.

J. Work Conducted from Approved Plan

Any person engaged in land-disturbing activity who fails to file a plan in accordance with this section, or who conducts a land-disturbing activity except in accordance with provisions of an approved plan, shall be deemed in violation of this section.

K. Plan Approval Required for Permit

No building permits shall be issued unless and until a soil erosion and sedimentation control plan has been submitted to the city, a grading permit has been issued, and a certificate of erosion control performance has been issued to indicate that initial soil erosion and sedimentation control devices have been installed and are functioning properly.

L. Work Completed Before Final Subdivision Approval

No final subdivision plat approval nor any Certificate of Occupancy shall be issued unless and until work at the site has been completed in accordance with a valid grading permit, or an improvement security or bond has been approved and accepted as required by this section.

M. Surety

The applicant for a grading permit to grade more than one acre may be required to file with the city an improvement security, bond, or other instrument satisfactory to the city to cover all costs of protection of the site according to requirements of this section. Such surety shall remain in force until the work is completed in accordance with the grading permit and said work is approved by the city. Upon violation of this section, applicable surety shall be used to establish protective cover on the site, to control the velocity of runoff, and/or prevent off-site sedimentation. Any monies in excess of the cost of providing protective measures shall be refunded to the appropriate person.

30-12-7 Stormwater Management

<p style="text-align: center;">Resources</p> <p style="text-align: center;"><i>Stormwater Drainage Standards</i></p> <p>NC Division of Water Quality Stormwater BMP Manual (Manual) Storm Drainage Design Manual (Manual) Stormwater Management Manual (Manual)</p>
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30-12-7.1 General

A. Purposes and Objectives

The regulations of this section are intended to protect and promote the public health, safety and welfare by preventing the introduction of potentially harmful materials into the city storm sewer system; to protect property from potential stormwater damage; to maintain and enhance water quality; and to meet the requirements in the City's National Pollutant Discharge Elimination System Permit for Stormwater Discharges. Other specific objectives of these regulations are to:

1. provide for the enforcement of the city's stormwater quality management program;
2. reduce the discharge of pollutants to the storm sewer system to the maximum extent practicable by requiring, where appropriate, the use of best management practices, structural and/or nonstructural stormwater quantity and quality control measures and other provisions;
3. provide for the inspection and proper maintenance of structural and nonstructural stormwater controls and the municipal separate storm sewer;
4. prohibit non-stormwater discharges to the city storm sewer and require the removal of illicit connections to the city storm sewer;
5. prevent improper disposal of materials that degrade water quality;
6. permit sampling and monitoring for pollutants such as those associated with illicit discharges, improper disposal, industrial and construction activities, and the application of pesticides, herbicides, and fertilizers; and
7. reduce erosion associated with stormwater runoff.

B. Applicability

The regulations of this section apply govern the development and use of land and structures within the corporate limits of the city.

C. Right-of-entry

1. The Water Resources Director has the right-of-entry on or upon the property of any person subject to this chapter and any permit/document issued hereunder. The Water Resources Director must be provided ready access to all parts of the premises for the purposes of inspection, monitoring, sampling, inventory, records examination and copying, and the performance of any other duties necessary to determine compliance with this chapter.
2. Where a person has security measures in force which require proper identification and clearance before entry into its premises, the person must make necessary arrangements with its security guards so that, upon presentation of suitable identification, the Water Resources Director will be permitted to enter without delay for the purposes of performing specific responsibilities.
3. The Water Resources Director has the right to set up on the person's property such devices as are necessary to conduct sampling and/or metering of the person's operations.
4. Any temporary or permanent obstruction to safe and easy access to the areas to be inspected and/or monitored shall be removed promptly by the person at the written or verbal request of the Water Resources Director. The costs of clearing such access must be borne by the person.
5. The Water Resources Director may inspect the facilities of any user in order to ensure compliance with this chapter. Such inspection requires the consent of the owner, manager, or signatory official. If such consent is refused, the Water Resources Director may seek issuance or an administrative search warrant.

D. Assessments

1. Property owners of single-family homes, townhouses and condominium properties can request that City Council approve a resolution that allows stormwater improvement costs to be assessed against the property as a lien.
2. The City Council is authorized to determine which stormwater improvements inside the city will be provided and the type of solution, either piping or non-piping, for the improvement. The City Council likewise has the authority to determine the amount of construction cost to be borne by the abutting property owners and the amount to be borne by the city.
3. The assessment formula for stormwater improvements using a piping solution must be set at a rate that recovers 100% of the construction cost, including engineering, labor and materials of a 15-inch stormwater pipe or a rate not to exceed 50% of the total project cost, whichever is less. The assessment formula for stormwater improvements using a non-piping solution must be set at a rate of 10% of the cost, including engineering, labor and materials. The assessment rate must be reviewed for any necessary adjustments once a year in coordination with the annual budget process.
4. Upon receiving notice of completion of a stormwater management project, City Council must confirm all assessment obligations in the project and must call for advertisement of assessment obligations in a local newspaper published at least weekly and that is generally available to citizens. Such advertisement must run within 45 days following the date of confirmation and must inform that all listed assessment obligations may be fully satisfied, without interest, if payment-in-full of the total principal balance is received by the tax collector within 90 days following the date of confirmation.
5. Assessment accounts not paid in full within 90 days following the confirmation date must be scheduled for payment in substantially equal installments, plus interest on the whole unpaid principal balance. Such interest must be computed from the date of confirmation at a rate fixed in the assessment resolution, with the rate not exceeding the maximum allowed by law. The first installment is due and payable no later than 365 days following confirmation, with subsequent installments being due and payable on the regular and sequential cycle of the installment frequency (monthly, quarterly, semi-

annually or annually) elected by the obligee and with the final installment being due and payable by not later than one 120 months after the confirmation date.

6. If the obligee expresses no preference regarding payment frequency, the assessment obligation will be scheduled for payment in 10 annual installments. Upon approval of the tax collector, the frequency of payment for existing assessment accounts may be changed for the economic and budgetary convenience of the obligee, with the first such change being granted without charge and with subsequent changes being granted with a transaction fee of \$35.00.
7. At any time after the first 90 days in the life of an assessment account, the full principal balance may be paid in full with all accrued interest and without early payoff penalty.

(Amended by Ord. 10-161 on 12/1/10)

30-12-7.2 Commercial and Residential

A. New Development

1. Drainage

- a. It is the duty of all property owners, in order to abate and prevent nuisances resulting from improper drainage, to provide at their own expense a proper and adequate drainage system of their respective premises, such drainage system to conform to the design established by the city.
- b. Rainwater leaders may not extend beyond the building or property line, but rather must be built in chases or on the inside of the wall, and may not empty on any street or sidewalk.
- c. No person may construct or install any ditch, pipe or other device for the diversion or transmission of storm drainage that will in any way affect the operation or maintenance of city street, water, sanitary sewer or storm sewer facilities without a permit issued by the Water Resources Director upon a finding that such city facilities will not be adversely affected by such construction or installation.
- d. **Maintenance**
In accordance with city policy the developer is responsible for establishing proper connections with existing storm sewer lines and bears ultimate responsibility for the correction of any problems associated with that connection. (See **Roadway and Utility Design Manual**)

2. Additional Requirements

a. Parking Lot Construction and Paving

No new parking lot, loading dock construction, or the construction of similar structures or the grading/or paving of existing parking lots, loading docks, or similar structures may be undertaken until the developer obtains a permit from the city. The site must be inspected before, during and after construction. Any violation of the permit will result in permit revocation and cessation of construction until the violations are corrected.

b. Stormwater Management

The design, construction, and maintenance of stormwater improvements to meet the requirements of 30-12-7.2(B) must comply with the **Stormwater Management Manual** the specifications and requirements of which are hereby adopted and made a part of this chapter as if set out in full.

c. Development Policy Manual

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d. Responsibility of Property Owner

It is the responsibility of the property owner to correct drainage controls on individual properties that do not function properly or are not constructed according to their design.

e. New Storm Drainage Design and Construction

All new storm sewer infrastructure must be constructed according to the **Storm Drainage Design Manual**.

B. Stormwater Management Control Requirements

1. Purpose

These stormwater management control requirements are intended to protect, maintain, and enhance the public health, safety, and general welfare by establishing minimum requirements and procedures to control the adverse effects of increased stormwater runoff associated with new development or redevelopment within the city. Additionally, this section requires development that drains in whole or in part to waters with special designation such as NSW or impaired waters assigned a Total Maximum Daily Load (TMDL) by North Carolina DWQ, to be designed using best management practices, up to and including the installation of engineered stormwater controls, that reduce nutrients or other pollutants of concern, to the maximum extent practicable, while still meeting other requirements of this section. Proper management of stormwater runoff, including the provision of stream buffers, will minimize damage to public and private property, promote a functional storm drainage system, reduce local flooding and drainage problems, and maintain, to the extent practicable, the pre-developed stormwater runoff characteristics of the developed site.

2. Applicability

The stormwater management control requirements of this subsection (30-12-7.2(B)) apply to the following type of developments.

- a. All sites containing new development and/or redevelopment including grading, paving, gravel placement, and construction of buildings and other structures within the corporate limits and the extraterritorial jurisdiction of the city.
- b. The construction and installation of new public improvements by federal, state or local government agencies shall comply with the provisions of this section to the extent practicable unless the federal, state or local government agency has a National Pollution Discharge Elimination System (NPDES) stormwater permit that applies to the project site.

3. Participation in a Regional Stormwater Control Program

See 30-12-3.5

4. Stormwater Management Plan

See 30-4-15.6(B)

5. Stormwater Quantity and Quality Improvements

See 30-12-3.7

6. Stream Protection Requirements

See 30-12-3.9

7. Stormwater Management Requirements

- a. Minimum stormwater management requirements for all new development and redevelopment must consist of runoff control measures necessary to control runoff to a level that will not cause increased off-site quantity problems as specified in 30-12-7.2(B)7)b) and 30-12-7.2(B)7)c) below.

b. Quantity Control Requirements

- i. The engineer must provide a certification that the subject development or redevelopment would not cause increased off-site flooding, drainage, or erosion problems. Determination of impacts must be based on hydrologic and hydraulic engineering studies extending downstream to a point where the proposed site development or redevelopment represents less than 10% of the total drainage area or watershed. The studies must be based on an analysis of both 2- and 10-year storm events. (see **Stormwater Management Manual**).

- ii. If it is determined that the development of the subject site does contribute to flooding, drainage or soil erosion problems at any location between the proposed development site and the 10% downstream point then stormwater quantity control improvements must be implemented. The stormwater quantity control improvements must limit the 2-year and 10-year post-development peak discharge rates to pre-development peak discharge rates, to minimize increased flooding, drainage, and erosion problems. These improvements may consist of nonstructural approaches such as natural swales, depressions in the land and other natural approaches, or structural approaches such as detention structures (wet and dry basins), extended detention facilities and alternative best management practices with provisions for stormwater quantity control. A combination of nonstructural and structural approaches is encouraged.
 - iii. For stormwater management improvements that are proposed to be implemented to meet the quantity control requirements of this section, a hydrologic-hydraulic analysis of the site drainage system in the pre-development condition and the post-development condition must be performed. The analysis should be included with the stormwater management plan and should demonstrate that the quantity control requirements stated in 30-12-7.2(B)7)b) will be achieved by the proposed improvements. These improvements are subject to review and approval by the Water Resources Director.
- c. Developments that meet the requirement for being identified as an integrated multiple use developments, planned unit developments, phased developments or group developments can meet the requirements of 30-12-7.2(B)6) at the point the discharge leaves the overall property.

8. **Master Plan Requirements**

It is the intent of the city to produce stormwater quantity and quality management master plans to guide the design and development of the drainage system for all of the major sub-watersheds and watersheds in the city. Where such master plans are available and approved by the City Council, site development projects are to conform to the stormwater management guidance and standards available in said master plans.

9. **Additional Requirements**

If site characteristics indicate that complying with the minimum stormwater management requirements of this section will not provide adequate designs or protection for local residents, and downstream property, it shall be the site designer's responsibility to exceed the minimum requirements as necessary.

10. **Exempt Activities**

The following activities are exempt from the requirements of 30-12-7.2(B)7). However, any restrictions upon building location, drainageways, pavement, or other built-upon area, or any other matter appearing on any previously approved development plan covering the subject property, shall be complied with unless and until replaced by an approved revised plan.

- a. Individual single-family housing on an individual lot.
- b. Replacement of existing built-upon area with like or lesser amount of new built-upon at the same location, or at a different location on the same zone lot if the Water Resources Director has determined that equal or improved stormwater management will result.
- c. Placement of small accessory buildings or structures or small amounts of additional built-upon area provided that the total additional built-upon area is no greater than 400 square feet.
- d. Activities exempt from permit requirements of Section 404 of the federal Clean Water Act, as specified in 40 CFR 232 are exempt from watershed requirements of this ordinance. Stream buffer requirements for ongoing farming and forestry activities will be implemented and enforced by the Division of Water Quality.

30-12-7.3 Illicit Discharges and Improper Disposal

A. Prohibited Discharges

1. Illicit Connections

- a. It shall be unlawful to use any stream or watercourse to carry off water from any kitchen sink, bathtub or privy, or to carry off any fluid of an offensive or dangerous nature. No water or refuse from any industrial, commercial or institutional process, including uncontaminated water used for heating or cooling, shall be discharged in any stream or watercourse by any person until such person has obtained the appropriate local, state and federal permits.
- b. **Street and Utility Construction**
 - i. **Plans**

When required, construction and utility plans for all public or private street and water, sanitary sewer, and storm sewer facilities shall be submitted to the city following conditional approval or approval of the site plan. For each phase of the site plan, construction and utility plans shall include all improvements lying within or adjacent to that phase and all water, sanitary sewer, and storm sewer lines lying outside that phase and being required to serve that phase.
 - ii. **No construction Without Plan Approval**

None of the improvements listed above shall be constructed until the construction and utility plans for such improvements have been reviewed and approved by the city.
 - iii. **Inspections**

Work performed pursuant to approved construction and utility plans shall be inspected and approved by the city.
- c. It shall be unlawful, willfully or negligently to injure, deface, mutilate, destroy, tamper or interfere with any city-owned property or any property used in the city's water, sanitary sewer or storm sewer, police or fire alarm system.
- d. In accordance with city policy permits shall be required before the construction of any connection to the municipal separate storm sewer. (See the **Roadway and Utility Design Manual**)

2. Improper Disposal

It shall be unlawful for any person to discharge non-stormwater to any stormwater conveyance with the exception of the following:

- a. Water line flushing;
- b. Diverted stream flows;
- c. Rising ground waters;
- d. Uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(20)) to separate storm sewers;
- e. Uncontaminated pumped ground water discharges from potable water sources;
- f. Foundation drains;
- g. Air conditioning condensation;
- h. Irrigation water;
- i. Springs;
- j. Water from crawl space pumps;

- k. Footing drains;
- l. Lawn watering;
- m. Car washing at one's residence, not for hire;
- n. Flows from riparian habitats and wetlands;
- o. Dechlorinated swimming pool discharges;
- p. Street wash waters; and
- q. Discharges from firefighting.

3. **Litter and Refuse Control**

- a. It shall be unlawful to throw, place or deposit any refuse in any street, public place, on any private property, or in any conveyance within the city limits, except in garbage cans or garbage receptacles as provided in Chapter 25 of the City Code, or as approved by the Water Resources Director.
- b. It shall be unlawful for any person to throw any garbage, peelings or miscellaneous litter upon any of the sidewalks, greenways, or trails in the city or upon the floors of any religious assembly buildings, public halls, theaters, buses or other public places. It shall be unlawful for any person to place, drop or throw any litter, garbage, refuse, grass, shrubbery, tree clippings, bottles, cans, or containers or any kind upon any median strip, alleyway, street or street right-of-way, park or grass strip, or in any conveyance, or upon the private premises of another without permission of the owner or person in control of such premises, or upon any public property; provided, however, that the provisions of this section do not apply to those materials required to be placed for collection on the grass or park strip by Chapter 10 of the City Code.

4. **Organic Waste**

- a. Loose leaves shall be collected at curbside by city forces from October 1 through the second Wednesday in January. All other times during the year, leaves shall be bagged or containerized in approved receptacles.
- b. It shall be the duty of the property owner to keep leaves that have been piled for fall leaf collection out of the gutter, inlet, catch basin, or side ditch.
- c. It shall be unlawful to place stumps or any organic materials on any property, public or private, except in those specific areas designated for such use by the Water Resources Director.
- d. It shall be unlawful to place grass clippings, leaves, tree and shrub clippings, or any other yard wastes in any street, storm drain, stream, stormwater conveyance, or any other location where concentrated stormwater flows will wash such wastes into the storm sewers.
- e. No privy, pigpen or stable of any kind shall be permitted to stand so near any stream, ditch, drain, or stormwater conveyance of any kind that the droppings therefrom will run into such stream, ditch, drain, or stormwater conveyance or in any way poison or contaminate the water therein; nor shall the urine from any privy be allowed to fall or be emptied into any stream, ditch, drain, or stormwater conveyance.
- f. Every owner and/or person in possession of any premises across through which any stream or open ditch runs, or on which any body of water is impounded, shall keep the banks and edges of the stream, ditch or body of water free and clear of accumulations of debris which might block, hinder, or obstruct the natural flow of water in swales, streams, creeks, surface waters, ditches, or drains, to the extent that standing water is created on the premises.

B. **Spill Response**

1. **Purpose and Authority**

The Fire Chief shall have the authority to summarily abate, control and contain hazardous materials which are emitted into the environment in such a manner as to endanger the health or safety of the general public or the environment. The Fire Chief shall have the authority to enter public or private property with or without the owner's consent, to respond to such hazardous materials emergencies. The Fire Chief shall determine the type, amount and quantity of equipment and personnel required to adequately abate, control and contain all hazardous materials which are emitted into the environment.

2. **Responsibility; Fees and Charges**

- a. The property owner and/or the person exercising control over the hazardous materials that create the hazardous material emergency shall be held financially liable for the response, control, containment, equipment, and materials costs incurred by the city fire department during the emergency. The property owner and/or person exercising control over such hazardous material, may provide personnel to assist abatement, removal and remedial measures, provided such personnel have been adequately equipped and trained pursuant to the requirements of state and federal laws. The city shall not be liable for the use of outside personnel. Assistance shall consist of any or all of the following:
 - i. Informing fire department personnel of all matters pertaining to the incident;
 - ii. Supplying emergency response plan information for the site;
 - iii. Supplying emergency response equipment, personnel and materials.
- b. The city will charge for abatement, control and containment of hazardous material responses or fire incidents involving hazardous materials which accrue more than \$100.00 in charges. In all cases the \$100.00 of expenses shall not be charged to the person in default.
- c. Charges for hazardous materials emergency response on behalf of the city by the Fire Department shall be based upon the following schedule:
 - i. Engine response shall be \$100.00 for each hour, or any part thereof.
 - ii. Additional engine response shall be \$100.00 for each hour, or any part thereof.
 - iii. Hazardous materials unit response shall be \$175.00 for the initial hour, or any part thereof, and \$100.00 for each additional hour, or any part thereof.
 - iv. Ladder truck response shall be \$50.00 for each hour, or any part thereof.
 - v. Squad truck response shall be \$50.00 for each hour, or any part thereof.
 - vi. Battalion chief response shall be no charge for the initial hour, \$25.00 for each additional hour or any part thereof.
 - vii. Any other actual costs of abatement, control and containment of the hazardous materials other than set out above.
- d. Failure to pay the charges as assessed shall give the city a right to levy a lien upon the land or the premises where the hazardous material emergency arose and the levy shall be collected in the same manner as unpaid taxes pursuant to the authority of [N.C.G.S. 160-A 193](#).

3. **Fire Incidents Involving Hazardous Materials**

In fire incidents that involve hazardous materials or an exposure to hazardous materials, no fee will be assessed for resources normally associated with firefighting operations. Fees shall be assessed for those activities and resources associated with the abatement, control and containment of the hazardous materials involvement or exposure which accrues more than \$100.00 in charges.

(Amended by Ord. 10-161 on 12/1/10)

30-12-7.4 Industrial and Related Facilities

A. Review of Stormwater Pollution Prevention Plans

The city may review the stormwater pollution prevention plans required under a facility's NPDES stormwater discharge permit when outfall monitoring or the illicit discharge/improper disposal program locates a suspected violator.

30-12-7.5 Construction Site Runoff

A. Self Inspection Records

The City's Manager may review on request the self-inspection record required by the NPDES construction permit for sites with land-disturbing activity greater than 5 acres. Site operators who do not supply the requested information shall be reported to DENR for permit noncompliance.

B. Runoff Control Structures

Runoff control structures shall be constructed and maintained according to the specifications of this ordinance and the *North Carolina Erosion and Sediment Control Planning and Design Manual*.

30-12-7.6 Enforcement

A. Violations

Any of the following shall be a violation of this chapter and shall be subject to the enforcement remedies and penalties provided by this article and by state law:

1. Development Without Permit

To engage in any development, use, construction, remodeling, or other activity of any nature upon land or improvements thereon subject to the jurisdiction of this chapter without all required permits, certificates, or other forms of authorization as set forth in this chapter.

2. Development Inconsistent With Permit

To engage in any development, use, construction remodeling or other activity of any nature in any way inconsistent with any approved plan, permit, certificate, or other form of authorization granted for such activity.

3. Violation by Act or Omission

To violate, by act or omission, any term, variance, modification, condition, or qualification placed by the City Council or its agent boards upon any required permit, certificate, or other form of authorization of the use, development, or other activity upon land or improvements thereon.

4. Use in Violation

To erect, construct, reconstruct, alter, repair, convert, maintain, or use any building or structure or to use any land in violation or contravention of this chapter or any other regulation made under the authority conferred thereby.

5. Continuing a Violation

To continue any of the above violations is a separate and distinct offense each day.

B. Civil Penalties

1. Illicit Connections

a. Any person who is found responsible for an illicit connection shall receive a notice of violation when the connection is discovered. The person shall have 30 days to remove the connection. At the end of that time if the connection has not been removed, the city may enter the property and take measures necessary to remove the connection and perform whatever cleanup or abatement is necessary. If the person fails to remove the connection in the time prescribed, the city may petition the superior court of justice, for the issuance of an injunction to compel removal and

payment; however, removal of the illicit connection shall be immediate upon the determination of the Water Resources Director that the connection poses an imminent threat to public health.

- b. If any person who previously has been found to have an illicit connection reconnects to the municipal separate storm sewer, he shall be assessed a civil penalty not to exceed \$5,000.00. The penalty shall increase by 25% of the previous penalty amount for every subsequent illicit connection made by the same person. The penalty shall be additional to the cost of cleanup and abatement. Civil penalties assessed under this section are considered restorative; intended to provide compensation to the city for costs associated with the city's program to monitor, control, prosecute, cure and/or correct the violation. As such, the amount declared herein is presumed to provide sufficient restoration to the city for its costs.
- c. The assessment of civil penalties herein is not intended to be an exercise of powers delegated to other agencies or entities created by the General Assembly to regulate the proscribed conduct. If the person has or is required to have a stormwater discharge permit from the state division of environmental management, the city shall alert the appropriate state authorities of the violation. In determining the amount of the penalty the Water Resources Director shall consider the following:
 - i. The degree and extent of the harm to the natural resources, to the public health, or to the public or private property resulting from the violation;
 - ii. The duration and gravity of the violation;
 - iii. The effect on ground or surface water quality or on air quality;
 - iv. The cost of rectifying the damage;
 - v. The amount of money saved by noncompliance;
 - vi. Whether the violation was committed willfully or intentionally;
 - vii. The prior record of the violator in complying or failing to comply with the stormwater quality management program; and
 - viii. The costs of enforcement to the city.

2. **Improper Disposal**

a. **Process Wastewater**

- i. Any person who is found to have improperly disposed of process wastewater to the municipal separate storm sewer shall be assessed a civil penalty not to exceed \$5,000.00. Civil penalties assessed under this section are considered restorative; intended to provide compensation to the city for costs associated with the city's program to monitor, control, prosecute, cure and/or correct the violation. As such, the amount declared herein is presumed to provide sufficient restoration to the city for its costs.
- ii. The assessment of civil penalties herein is not intended to be an exercise of powers delegated to other agencies or entities created by the General Assembly to regulate the proscribed conduct. In determining the amount of the penalty the Water Resources Director shall consider the following:
 - a. The degree and extent of the harm to the natural resources, to the public health, or to the public or private property resulting from the violation;
 - b. The duration and gravity of the violation;
 - c. The effect on ground or surface water quality or on air quality;
 - d. The cost of rectifying the damage;
 - e. The amount of money saved by noncompliance;

- f. Whether the violation was committed willfully or intentionally;
- g. The prior record of the violator in complying or failing to comply with the stormwater quality management program; and
- h. The costs of enforcement to the city.

b. Bulk Sales

- i. Any person who is found to have improperly disposed of any substance that was purchased at a bulk sales location which, upon discharge to the municipal separate storm sewer system or drainage network, would have an adverse impact on water quality or cause the city to be in noncompliance with any applicable environmental permit shall be assessed a civil penalty not to exceed \$5,000.00. Civil penalties assessed under this section are considered restorative; intended to provide compensation to the city for costs associated with the city's program to monitor, control, prosecute, cure and/or correct the violation. As such, the amount declared herein is presumed to provide sufficient restoration to the city for its costs.
- ii. The assessment of civil penalties herein is not intended to be an exercise of powers delegated to other agencies or entities created by the General Assembly to regulate the proscribed conduct. In determining the amount of the penalty the Water Resources Director shall consider the following:
 - a. The degree and extent of the harm to the natural resources, to the public health, or to the public or private property resulting from the violation;
 - b. The duration and gravity of the violation;
 - c. The effect on ground or surface water quality or on air quality;
 - d. The cost of rectifying the damage;
 - e. The amount of money saved by noncompliance;
 - f. Whether the violation was committed willfully or intentionally;
 - g. The prior record of the violator in complying or failing to comply with the stormwater quality management program; and
 - h. The cost of enforcement to the city.

c. Household Products

- i. Any person who is found to have improperly disposed of any substance that was purchased over-the-counter for household, in quantities considered normal for household purposes, which, upon discharge to the municipal separate storm sewer system or drainage network, would have an adverse impact on water quality or cause the city to be in noncompliance with any applicable environmental permit shall be assessed a civil penalty not to exceed \$500.00. Civil penalties assessed under this section are considered restorative; intended to provide compensation to the city for costs associated with the city's program to monitor, control, prosecute, cure and/or correct the violation. As such, the amount declared herein is presumed to provide sufficient restoration to the city for its costs.
- ii. The assessment of civil penalties herein is not intended to be an exercise of powers delegated to other agencies or entities created by the General Assembly to regulate the proscribed conduct. In determining the amount of the civil penalty the Water Resources Director shall consider the following:
 - a. The degree and extent of the harm to the natural resources, to the public health, or to the public or private property resulting from the violation;

- b. The duration and gravity of the violation;
- c. The effect on ground or surface water quality or on air quality;
- d. The cost of rectifying the damage;
- e. The amount of money saved by noncompliance;
- f. Whether the violation was committed willfully or intentionally;
- g. The prior record of the violator in complying or failing to comply with the stormwater quality management program; and
- h. The costs of enforcement to the city.

d. **Yard Waste**

- i. Any person who is found to have improperly disposed of leaves, grass clippings, or other yard wastes shall be assessed a civil penalty not to exceed \$500.00. Civil penalties assessed under this section are considered restorative; intended to provide compensation to the city for costs associated with the city's program to monitor, control, prosecute, cure and/or correct the violation. As such, the amount declared herein is presumed to provide sufficient restoration to the city for its costs.
- ii. The assessment of civil penalties herein is not intended to be an exercise of powers delegated to other agencies or entities created by the General Assembly to regulate the proscribed conduct. In determining the amount of the penalty the Water Resources Director shall consider the following:
 - a. The degree and extent of the harm to the natural resources, to the public health, or to the public or private property resulting from the violation;
 - b. The duration and gravity of the violation;
 - c. The effect on ground or surface water quality or on air quality;
 - d. The cost of rectifying the damage;
 - e. The amount of money saved by noncompliance;
 - f. Whether the violation was committed willfully or intentionally;
 - g. The prior record of the violator in complying or failing to comply with the stormwater quality management program; and
 - h. The costs of enforcement to the city.

e. **Repeat Violation**

If a person is found to be responsible for more than one instance of improper disposal, the penalty shall increase by 25% of the previous penalty amount for each subsequent improper disposal.

f. **Watershed Areas**

The penalty assessed for any of the above violations shall be increased by 25% of the amount assessed if it occurs in any designated water-supply watershed area.

g. **Failure to Report**

The penalty assessed for any of the above violations shall be increased by 25% of the amount assessed for any spill not properly reported by the violator once he has knowledge of the violation.

- 3. In the event there are subsequent penalties assessed by the state against the city for improper disposal or illegal dumping, or illicit connection into the municipal separate storm sewer system as

identified in 30-12-7.6(B), caused by any person, such person shall be assessed the equivalent amount of civil penalty.

C. **Public Nuisances**

1. **Nuisances**

The following enumerated and described conditions are found, deemed and declare to constitute a detriment, danger and hazard to the health, safety, morals, and general welfare of the inhabitants of the city and are found, deemed and declared to be public nuisances wherever the same may exist and the creation, maintenance, or failure to abate any nuisances is hereby declared unlawful. The natural conditions on lands dedicated to and/or accepted by the city as natural stream corridors, floodplain and/or open space which are established in order to preserve natural greenways, vegetative stream buffers, and/or natural connecting networks along floodways, streams, and creeks are deemed and declared as exceptions for the purpose of enforcement of this article.

- a. Any condition which constitutes a breeding ground or harbor for rats, mosquitoes, harmful insects, or other pests.
- b. A place of dense growth of weeds or other noxious vegetation over 12 inches in height.
- c. An open place of concentration of combustible items such as mattresses, boxes, paper, automobile tires and tubes, garbage, trash, refuse, brush, old clothes, rags, or any other combustible materials or objects of a like nature.
- d. An open place of collection of garbage, food waste, animal waste, or any other rotten or putrescible matter of any kind.
- e. Hides, dried or green, provided the same may be kept when thoroughly cured and odorless.
- f. Any furniture, appliances, or metal products of any kind or nature openly kept which have jagged edges of metal or glass, or areas of confinement.
- g. Any condition which blocks, hinders, or obstructs in any way the natural flow of water in swales, streams, creeks, surface waters, ditches, or drains, to the extent that standing water is created on the premises.

2. **Notice to Abate; Emergency Abatement by City**

If any person shall violate the provisions of this section, it shall be the duty of the Water Resources Director to give notice to the owner or to any person in possession of the subject property directing that all unlawful conditions existing thereupon be abated within 10 days from the date of such notice; provided, that if, in the opinion of the Water Resources Director, the unlawful condition is such that it is of imminent danger or peril to the public, then an authorized public works representative may, without notice, proceed to abate the same, and the cost thereof shall be charged against the property.

3. **Abatement by City Where Owner Fails to Abate**

Upon the failure of the owner or person in possession of any premises to abate any unlawful condition existing thereupon within the time prescribed by the provisions of this section, it shall be the duty of an authorized public works representative to cause the removal and abatement of such unlawful condition therefrom.

D. **Remedies**

Any or all of the following procedures may be used to enforce the provisions of this chapter:

1. **Injunction**

Any violation of this chapter or of any condition, order, requirement, or remedy adopted pursuant hereto may be restrained, corrected, abated, mandated, or enjoined by other appropriate proceeding pursuant to state law.

2. **Civil penalties**

- a. Any person who violates any provision of this section shall be subject to the assessment of a civil penalty under the procedures provided in 30-12-7.6(B). Civil penalties assessed under this section are considered restorative; intended to provide compensation to the city for costs associated with the city's program to monitor, control, prosecute, cure and/or correct the violation. As such, the amount declared herein is presumed to provide sufficient restoration to the city for its costs.
- b. The assessment of civil penalties herein is not intended to be an exercise of powers delegated to other agencies or entities created by the General Assembly to regulate the proscribed conduct.

3. Denial of Permit

The Water Resources Director shall withhold or deny any permit, certificate, or other authorization on any land, building, structure, or use in which there is an uncorrected violation of a provision of this section, or of a condition or qualification of a permit, certificate, or other authorization previously granted.

4. Conditional Permit or Temporary Certificate

The Water Resources Director may condition the authorization of any permit or certificate upon the correction of the deficiency, payment of civil penalties within a specified time, or the posting of a compliance security approved by appropriate government authority.

5. Revocation of Permit

The Water Resources Director may revoke and require the return of a permit or certificate by notifying the permit holder in writing, stating the reason for the revocation. Permits or certificates shall be revoked for any substantial departure from the approved application plans, or specifications; refusal or failure to comply with the requirements of state or local law; or for false statements or misrepresentations made in securing the permit or certificate. Any permit or certificate mistakenly issued in violation of any applicable state or local law may also be revoked.

6. Criminal Penalties

Any violation of this section shall be a misdemeanor or infraction as provided by [NCGS 14-4](#). Each violation shall be subject to a fine not to exceed \$500.00.

7. Notification of the State Enforcement Officials

a. Industrial and Related Facilities

When the Water Resources Director discovers an apparent violation of an industrial or related facility's NPDES stormwater discharge permit or that the facility is not operating pursuant to its stormwater pollution prevention plan, the city shall notify the appropriate state officials immediately.

b. Construction Sites

If the Water Resources Director discovers an apparent violation of the NPDES stormwater discharge permit required by the state for sites with land-disturbing activity greater than 5 acres, he shall report the violation immediately to the appropriate state officials.

c. Abatement

When the discharge from the facility interferes significantly with the municipal separate storm sewer, and the facility fails to take appropriate actions upon notification by the city, the city may take immediate and appropriate measures to control the problem whether or not the facility is violating its NPDES permit and recover the cost from the facility.

8. Judicial Enforcement

When any person is in violation of the provisions of this section, the Water Resources Director, through the City Attorney, may petition the Superior Court for the issuance of a restraining order or a preliminary and permanent injunction which restrains or compels the activities in question.

(Amended by Ord. 10-161 on 12/1/10)

30-12-7.7 Appeals

A. Appeal Hearing

1. Any person assessed a civil penalty under this section shall have the right to a hearing before the Water Resources Director upon making a written demand to the Water Resources Department specifying the issues to be contested, within 30 days following receipt of the assessment.
2. Unless such written demand is made within the time specified herein, the action shall be final and binding.
3. The Water Resources Director shall make a final decision on the contested penalty within 30 days of the receipt of the written demand for a hearing.
4. The Water Resources Director shall transmit a copy of the decision by registered or certified mail.
5. The decision of the Water Resources Director shall be considered the final administrative action for the purposes of judicial review.

B. Judicial Review

Any person may seek judicial review of a final administrative decision by the Water Resources Director by filing a petition for writ of certiorari within 30 days after receipt of notice by registered or certified mail, but not thereafter, with the Superior Court and with a copy to the city.

30-12-7.8 Service Charges and Rates

A. Definitions for Rate Calculations

The following definitions shall apply concerning rate calculations:

Equivalent residential unit (ERU) 2,543 square feet of impervious surface.

Impervious surface. An area composed of any material that impedes or prevents natural infiltration of water into the soil. Impervious area shall include but is not limited to roofs, decks, driveways, patios, sidewalks, parking areas, tennis courts, concrete or asphalt streets, crushed stone and gravel surfaces.

Other property unit. A parcel of land that is not a single-family residential unit.

Single-family residential unit. A building detached from other structures used as a residence for 4 or fewer family units.

B. Purpose of Service Charge

Stormwater management services shall be funded through the operation of a stormwater utility, as authorized by state law, and charges shall apply to all property within the city limits, without regard to ownership. Such charges shall be based on the presence of impervious surface on each parcel as determined by the unit standard set forth in 30-12-7.8(A). The city shall set a base rate for single-family residential units and calculate charges for other property units utilizing the equivalent residential unit as a multiplier.

C. Rate for Service Charges

1. Single-family residential unit shall pay a fee based on the amount of impervious surface area on the property. The fee will be charged per month as shown below:

Table 12–12: Single-Family Residential Service Charges		
Tier	Impervious Surface Range (Sq. Ft.)	Residential Rate (Monthly)
I	600–1,999	\$1.50
II	2,000–2,899	\$2.70
III	2,900+	\$3.90

2. Other property shall pay a service charge of \$2.70 per month for each equivalent residential unit or portion of an equivalent residential unit on the parcel. No charge shall be made on parcels with less than 600 square feet of impervious surface.

30-12-7.9 Annexation of Stormwater Sewers and Drainage Systems

Upon annexation of property that includes dedicated public streets containing storm sewers and other such stormwater drainage system, such storm sewer systems and features shall become the property of the city without cost to the city and shall be incorporated into the city storm sewer and drainage system as if they were originally constructed by the city.

30-12-8 Open Space

30-12-8.1 Drainageway Open Space for Subdivisions

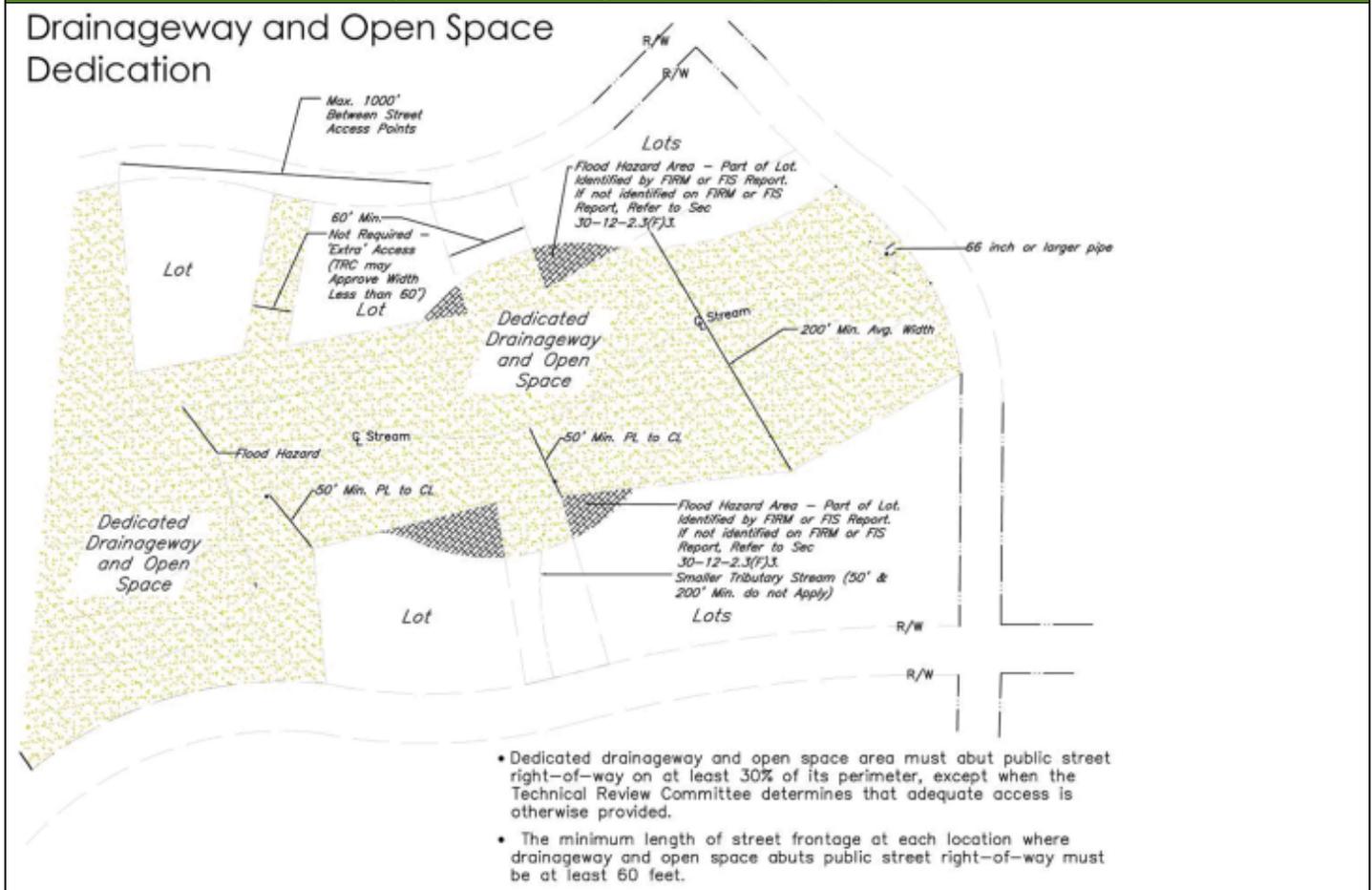
A. General

1. All watercourses that lie within the city or within or adjacent to developments provided with city water or sewer service pursuant to the water and sewer service agreement (WSSA) that will carry a flow of 5 cubic feet per second or more during a 10-year storm, as calculated in accordance with the city's **Storm Drainage Design Manual**, must provide drainageway treatment in one or more of the 3 ways listed in 30-12-8.1(B), 30-12-8.1(C) and 30-12-8.1(D), below. Except where 30-12-8.1(A)2 leaves the determination of the drainageway treatment to the developer, the Technical Review Committee is authorized to determine the treatment methods to be used, based upon the pipe size necessary to handle drainage and adopted Drainageway and Open Space Plan or Maps and the following factors:
 - a. the type of development;
 - b. the drainageway treatment employed by nearby developments;
 - c. the probability of creating a lengthy greenway or drainageway and open space;
 - d. the probability of creating future maintenance problems;
 - e. the probability of erosion or flooding problems; and
 - f. the adopted Drainageway and Open Space Plan or Map.
2. If the area is not identified on the Drainageway and Open Space Plan or Map and would require less than a 66-inch diameter pipe in a 100-year storm event, the developer is authorized to determine the drainageway treatments, in a manner consistent with the regulations of this subsection.

B. Enclosed Subsurface Drains

1. Storm drainage lines, connections, and facilities must be designed and constructed in accordance with the city's **Storm Drainage Design Manual**. Enclosed systems must be based on the 10-year storm event.
2. A utility easement designed to accommodate storm drainage must be dedicated on a Final Plat when determined necessary by the city. The required utility easement must be centered on the enclosure when practical, but in no case may the outside wall of the enclosure be located less than 5 feet from the edge of the easement. The easement must be of a width determined necessary for maintenance purposes by the city based upon enclosure depth, topography, and location of existing and proposed improvements, but in no case less than 15 feet in width.
3. Storm drainage easements may be used for future installation of other underground utilities.

Figure 12-5, Drainageway and Open Space Dedication



C. Open Channels in Dedicated Drainageway and Open Space Areas

1. Open channel drainageways must be based on the 100-year storm event.
2. Drainageway and open space must be dedicated by a recorded plat and must be labeled "Dedicated to the City of Greensboro and the public for Drainageway and Open Space purposes." If a portion of the drainageway and open space lies within a proposed thoroughfare shown on the *Thoroughfare Plan*, it must be labeled "Dedicated to the City of Greensboro and the public for Drainageway and Open Space and Thoroughfare purposes."
3. The dedicated drainageway and open space area along any stream that would require a 66-inch or larger diameter pipe must include the special flood hazard area. If there is no established flood hazard area identified on the FIRM or in the FIS report, the base flood elevation and one percent annual chance flood boundary are to be determined in accordance with 30-12-2.3(F)3. The area to be dedicated may be reduced in width by fill provided that a minimum average width of 200 feet is maintained, a minimum width of 100 feet is maintained at the narrowest point, no fill is placed within a designated floodway, and no slope greater than 3:1 is created. The minimum average width in other locations must be 60 feet.

Commentary: *Other regulations of this ordinance and/or federal wetlands regulations prohibit or restrict fill placement in certain locations.*

4. In cases of severe topography or other obstacles, additional width may be required to assure reasonable ease of maintenance.

5. Dedicated drainageway and open space area must abut public street right-of-way on at least 30% of its perimeter, except when the Technical Review Committee determines that adequate access is otherwise provided. The minimum length of street frontage at each location where drainageway and open space abuts public street right-of-way must be at least 60 feet. The maximum distance between such locations, measured by straight lines on each side of the drainageway, may not exceed 1,000 feet.
6. The centerline of the drainage channel that would require a 66-inch or larger diameter pipe must be located a minimum of 50 feet from all street and property lines, provided that the dimensions of the drainageway and open space area conform to all other requirements of this section. Along smaller drainageways, the minimum distance from the centerline is 20 feet.
7. Dedicated drainageway and open space may be used for drainage, open space, greenways, bikeways, trails, and other similar recreation activities, including park- and trail- related improvements in accordance with applicable regulations.
8. Dedicated drainageway and open space may be used for utility lines provided the lines are shown on approved construction and utility plans before final plat recordation or approved by the Parks and Recreation Department after final plat recordation.
9. Drainageway and open space must be left in its natural condition or graded to a cross-section approved by the city and stabilized with permanent vegetative cover that will allow economical and efficient maintenance. This provision is not intended to prevent use of dedicated drainageway and open space areas for drainage, open space, greenways, bikeways, trails, and other similar recreational improvements.
10. Single-family lots abutting property 60 feet or more in width dedicated to the city and the public as drainageway and open space may be reduced in size in accordance with the provisions in [30-7-3.2\(L\)](#).

Commentary: See [30-4-17.8](#) for procedures governing dedication of open space and easements.

D. Open Channels in Drainageway Maintenance and Utility Easements

1. Open channels in drainageway maintenance and utility easements may not be utilized in any subdivision intended for single-family detached dwellings unless the Technical Review Committee determines that an open channel would not become a missing segment in a stormwater piping system and that the open channel is sufficiently distant from all anticipated building locations.
2. The drainage maintenance and utility easement must include the special flood hazard area. If there is no established flood hazard area identified on the FIRM or in the FIS report, the base flood elevation and one percent annual chance flood boundary are to be determined in accordance with [30-12-2](#). The easement may be reduced in width or shifted by modifying the topography if permitted under the flood damage prevention regulations of [30-12-2](#) and the soil erosion and sedimentation provisions of [30-12-6](#). In such cases, the approved typical required drainage channel section must include the necessary channel to accommodate a one-hundred-year flood. The area outside of the required drainage channel may be filled; but any resulting slope may be no steeper than 2:1, unless the slope is protected by masonry paving, rip-rap, or other material that meets all city specifications.
3. The minimum width of a drainage maintenance and utility easement may not be less than specified below if the edge of the easement as specified below and the edge of a required stream buffer are close to coinciding, the Water Resources Director may authorize the easement line to be moved to coincide with the stream buffer line.

Table 12–13: Drainage Maintenance and Utility Easement Width

Cubic feet per second in 100-year storm	Drainage maintenance and utility easement width (feet)
5–17	30, centered
18–70	60, centered
> 70	50 on each side, as measured from top of bank

4. The drainage maintenance and utility easement must be centered on the drainageway unless the Technical Review Committee approves other easement alignments because of topographic conditions.
5. In cases of severe topography or other obstacles, additional width may be required to assure reasonable ease of maintenance.
6. If the Technical Review Committee determines that suitable access to the drainage maintenance and utility easement is not provided, access must be guaranteed by a suitably located access easement not less than 20 feet in width.
7. It is solely the owner’s responsibility to maintain all streams and all required stream buffers located within the easement.
8. If the City Council determines that it is in the public interest to alter the typical required channel section and/or profile of the stream to improve flow, the city may enter the property within the indicated access or drainage maintenance and utility easement and carry out the necessary work without liability for damage to the property or improvements located within the easement.
9. No buildings or structures, except for water-related improvements, may be placed or constructed within the access or drainage maintenance and utility easement except as expressly allowed as easement encroachments. Drives, parking areas, or other improvements may be constructed no closer than 2 feet horizontally from the top of any back slope along any open watercourse.
10. The stream buffer requirements of [30-12-3.9](#) apply along all intermittent and perennial streams.

30-12-8.2 Minimum Open Space Requirements

A. Applicability

The minimum open space requirements of this subsection apply to all of the following:

1. PUDs;
2. Mixed-use developments;
3. Residential subdivisions in the R-7 district in excess of 5 acres in area;
4. Cluster developments;
5. Townhouses and residential condominium developments; and
6. Other multi-family residential developments.

B. Minimum Amounts

Minimum open space requirements are as follows:

Table 12–14: Minimum Open Space Requirements

Classification	Minimum Open Space Requirement
Residential PUD (density=less than 5 units per acre)	20% of site area
Residential PUD (density=5 to 17 units per acre)	15% of site area
Residential PUD (density=17.01 to 35 units per acre)	10% of site area

Table 12–14: Minimum Open Space Requirements

Classification	Minimum Open Space Requirement
Residential PUD (density=more than 35 units per acre)	5% of site area
Nonresidential components of PUDs	10% of gross floor area
Subdivisions in R-7 district (over 5 acres)	850 square feet per dwelling unit
Cluster Developments	15% of gross site area
Multi-family Developments (gross site area of less than 3 acres)	250 square feet per dwelling unit
Multi-family Developments (gross site area of 3 acres or more)	435 square feet per dwelling unit
Developments in the AO, UMU and NS Districts	15% of gross site area when using the Urban Landscaping requirements of 30-12-8.2(C)1), General, and 30-12-8.2(C)3), All Other (Non-PUD) Development.

C. Standards

1. General

The following standards apply to all required open space areas:

- a. No more than 50% of a site’s total open space may be located in the floodway or floodway fringe.
- b. Stormwater facilities and drainageway areas, designed and improved as an amenity may be counted towards open space requirements.
- c. In addition to common elements owned by an owners' association, parkland, and drainageway and open space dedicated to the public, the following areas may be counted toward satisfying minimum open space may requirements:
 - i. tree conservation areas;
 - ii. landscaped courtyards, rooftop gardens, plazas, pocket parks, and similar areas with a minimum area of 300 square feet that provide pedestrian amenities;
 - iii. paths and trails at least 10 feet in width and associated pedestrian amenities; and
 - iv. public sidewalks at least 6 feet in width and landscaped and associated public pedestrian amenities.
- d. Streets, drives, parking lots and other areas that are not generally usable for recreation purposes or that do not provide visual, aesthetic, or environmental amenities may not be counted toward satisfying open space requirements.
- e. For the purpose of these open space provisions, pedestrian amenities include decorative, commercial quality street furniture, benches and seats, fountains, planters, sculpture and other public art, bicycle racks (that do not impede pedestrian circulation), and/or similar improvements.
- f. Open space must be provided for each phase of a phased development in a cumulative amount sufficient to satisfy the open space requirements for the subject phase of development and all preceding phases of development.

2. Planned Unit Developments

In addition to the general open space standards of 30-12-8.2(C)1), planned unit developments are subject to the following additional open space standards:

- a. Open space within a planned unit development must be open to the air and not enclosed within a building or structure.

- b. To qualify as open space, land shall be usable and accessible as follows:
 - i. A minimum of 75% of the provided open space must be usable and not occupied by streets, drives, parking areas, or structures other than recreational structures.
 - ii. All property owners in the planned unit development must have access to the open space by means of a public street, a private street, a private drive, or an all-weather walkway in an easement a minimum of 20 feet in width.
- c. Up to 50% of the required open space for a planned unit development may be contained within a public park with active recreational facilities or other public recreational opportunities available such that the usable portion of said park is located within 1,320 feet of the planned unit development, as measured along a system of public sidewalks and crosswalks.
 - i. The Technical Review Committee may grant a Type 2 Modification in accordance with [30-4-11](#) for off-site opportunities located within 1,600 feet when they find that equal or better performance will result, with regard to nature and extent of either existing or proposed sidewalk enhancements or other pedestrian amenities located along the route.
 - ii. If a portion of the route does not contain a sidewalk, the Technical Review Committee may grant a Type 2 Modification in accordance with [30-4-11](#) when they find that equal or better performance will result, with regard to the pedestrian's ability to safely traverse the non-sidewalk portion of the route.
- d. When the Parks and Recreation Director determines that there is either the need for or an opportunity to purchase property for park purposes or enhance existing city property for public park or usable public open space purposes within 2 miles of the planned unit development, the developer may provide a fee in lieu of providing up to 50% of the required open space. Fees submitted in lieu of required open space must be in an amount equal to that of the average market value for actual city property purchased within the past 3 years for generally comparable property located within 5 miles of the planned unit development. Property values may be adjusted based on generally accepted appraisal practices. All fees collected by the city pursuant to this subsection must be deposited in an appropriate account and used only for the purchase of property for park purposes, or enhancing the existing city property for park purposes. Use of submitted funds must be coordinated with other park projects. If the use of the fee in lieu option is determined to not be appropriate by the Parks and Recreation Director, this option is permitted and the planned unit development must provide the required amount of open space through other allowed means.

3. All other (non-PUD) Development

In addition to the general open space standards of [30-12-8.2\(C\)1](#)), non PUD developments are subject to the following additional open space standards:

- a. Only areas accessible at no charge, at least 24 feet in width and 1,000 square feet in area may be counted toward minimum open space requirements.
- b. The Technical Review Committee may grant a Type 2 Modification in accordance with [30-4-11](#) to reduce the open space requirements of this section ([30-12-8.2](#)) for non-PUD developments.

30-12-8.3 Open Space Requirements Within Watershed Critical Areas

Developments within watershed critical areas (See [30-12-4](#)) shall provide open space in accordance with the following minimum percentages:

Table 12–15: Watershed Critical Area Open Space Requirements

Tier	Minimum Open Space Requirement
Tier 1	90%
Tier 2	90%
Tier 3	20%
Tier 4	20%

- A. Only areas accessible at no charge, at least 24 feet in width and 5,000 square feet in area may be counted toward minimum WCA open space requirements.
- B. All such areas not occupied by recreational facilities shall be grassed, landscaped, or wooded.
- C. Prohibited uses are parking, private drives, private streets, garbage areas, mechanical equipment, and other similar uses. The strip of common elements encompassing a private street shall not be counted as open space.
- D. Required open space located in subdivisions with more than 2 dwelling units or property owners must be included as part of the subdivision's common elements and is subject to the owners' association requirements of [30-13-9](#).

30-12-8.4 Lands Dedicated as Parkland or Drainageway and Open Space

Land dedicated as parkland or as drainageway and open space shall be counted toward satisfying the open space requirements of this section ([30-12-8](#)).