

7.1. Landscaping and tree protection.

- A. **Purpose and intent.** The purpose of this section is to regulate the planting and preservation of landscape material, to promote the general health, safety and welfare of the community and in addition, to facilitate the creation of an attractive environment to protect property values and to further the urban design and economic development objectives of the Town-wide Comprehensive Growth Plan. This section is intended to apply minimum standards, which result in a better overall appearance of the community by:
1. Achieving a harmonious relationship between the natural landscape and manmade structures;
 2. Enhancing the community's natural, cultural and visual resources.
 3. Achieving the goals and policies of the officially adopted Comprehensive Growth Plan currently in force.
- B. **Applicability.** The provisions of this section and the Town of Garner Planting Manual contained in Appendix E shall apply to all public and private land located within the Town of Garner.
1. **New development.** The requirements of this section apply to the entire site for all new development.
 2. **Expansion of existing development.** Where existing development is expanded as described below, the requirements of this section shall apply to the entire site:
 - a. Residential district or exclusive residential use in any district. Any increase in the gross floor area of the building, developed area or site of 20 percent or more, or 1,000 square feet, whichever is less.
 - b. Commercial district or use. Any increase in the gross floor area of the building, developed area or site by ten percent or more, or 1,000 square feet, whichever is less.
 - c. Industrial district or use. Any increase in the gross floor area of the building, developed area, or site by 20 percent or more, or 5,000 square feet, whichever is less.
 3. **Exemptions to the landscape/maintenance requirements.**
 - a. Improvements or repairs to the interior or exterior of structures or buildings that do not result in an expansion or change in use shall be exempt from the landscape planting requirements, but not the maintenance requirements.
 - b. A single detached dwelling on its own lot shall be exempt from landscape planting and maintenance requirements.
- C. **Landscape plans.**
Commentary: Landscape plans should be prepared with the appropriate mix of plant varieties and quantities necessary to meet the requirements of Section 7.1 of the UDO. In cases where overhead power or utility lines exist, selected landscape material located underneath said lines must be the appropriate plant type so as not to create future conflicts. Information regarding the types of trees and shrubs that can be planted near power or utility lines can be obtained from the Garner Planning Department.
 A registered landscape architect shall prepare landscape plans, except where expressly exempted by the Planning Director. The landscape treatment shall adequately detail the requirements of this section; planting, landscape and buffer treatments required by the Town of Garner Planting Manual contained in Appendix E; and all other applicable sections of this UDO.
1. **Required planting components.**
 - a. There are four required planting components that may need to be addressed for any site subject to this section, as follows:

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- (1) Tree canopy cover;
 - (2) Tree preservation (if required);
 - (3) Buffers, yards, vehicular surface areas and street trees; and
 - (4) Screening of objectionable views.
- b. These subsections address the minimum planting requirements for plan submittals.
2. **Landscape plan required.** Landscape plans shall include the following.
- a. Any natural features that influence the site's design.
 - b. Elements of required landscaping including buffers, tree cover, street yards, side and rear yards, open space, greenways, site distance triangles and easements.
 - c. Proposed plant schedule to include plant types, botanical and common name, spacing, quantities, sizes (height and spread and container size) and quantities. Tree cover calculations adequate in detail to determine compliance with these standards.
 - d. Proposed drives, paving, decks, walks, pools and other man-made structures/elements which are to be introduced within the property.
 - e. Proposed grades on landscape plan shall be half-toned on the print so as not to conflict with the legibility of the planting scheme and labels.
 - f. Construction notes/details relating to hardscape elements, specific material and planting procedures, and seeding schedules.
 - g. A plant points table that indicates the calculation of required and proposed landscape plantings for the development, detailing the use of the existing plant material, and the new plantings that are to be applied toward the required buffers, yards and vehicular surface areas.
 - h. Show calculations for tree canopy cover requirements.
 - i. If underground irrigation is to be used, all double check or RPZ valves and controllers shall be located on the landscape plans submitted and shall be screened from view from adjacent right-of-way.
 - j. Sight line drawings may be required by the Planning Director for development that proposes inappropriate building scale, materials or architecture or has a substantial grade difference or proposes insufficient screening treatments.
- D. **Plant material installation requirements.** Plant material requirements are based on square footage area of the four required planting components, and may be based on sight line drawings. Credits are based on the size and height of existing or proposed material. Refer to the credit for retaining mature trees chart and the plant points table below. Also refer to the residential and non-residential development cover requirements in Sections I.2.c. and d.; the perimeter and street buffer charts in Sections K.6 and Sections K.8 and Sections L.2.c, L.3.b, and L.4.b.
1. **Conditions.**
- a. All plant material installed must meet standards set by American Association of Nurserymen, Inc., "Standards for Nursery Stock".
 - b. The minimum number of plants required, regardless of area calculations, is three trees and 20 shrubs.
 - c. A minimum of ten percent of the required landscape installation based on the total plant points for the entire site shall be installed next to the building.
 - d. For large-scale buildings a minimum of 25 percent of the area of the front wall and of the building shall be screened with large trees planted within 25 feet of the building.

2. **Credit for retaining mature trees.** In order to promote the retention of existing mature trees, the following schedule provides more credits for existing mature trees with diameter at breast height (DBH) sizes as noted than are awarded in the plant points table for installed trees with smaller trunks. Qualification requires that the trees be in good health and of good quality, as determined by a landscape architect licensed in NC or a certified arborist.

Points	Small Hardwoods	Large Hardwoods	Softwoods
40	2½ to 4 inches	6 to 9 inches	8 to 11 inches
50	5 to 8 inches	10 to 17 inches	12 to 17 inches
64	9 to 11 inches	18 to 24 inches	18 to 29 inches
96	12 inches or larger	24 inches or larger	30 inches or larger

3. **Plant points table.**

Plant Type	Height (feet)	Size Root/ Container ¹	Caliper (inches)	Points
Large Canopy Tree (minimum 35 feet at maturity)	14	B&B	3 to 9	40
	12	B&B	2.5	32
	10	B&B	2	25
	9	B&B	1.5	15
	8	B&B	1.25	8
Small Canopy Tree (less than 35 feet at maturity)	9	B&B	1.5	32
	8	B&B	1.25	25
	6	B&B	1	15
	5	B&B	0.75	8
Shrubs	8	B&B	—	15
	6	15 gallon/B&B	—	12
	4	10 gallon	—	10
	3	7 gallon	—	8
	2	5 gallon	—	6
	18	3 gallon	—	3
	< 18	or 1 gallon	—	1

- E. **Protection of planting areas.** Planting areas shall be permanently protected from damage by vehicular traffic through the use of curbing and or wheel stops. Wheel stops shall be used in parking areas where:

1. Curbing has not been used or is less than six inches in height.
2. Proposed new trees and shrubs are planted within five feet from adjacent curbing or edge of vehicular surface area paving.

- F. **Completion of work/letters of credit.**

1. A certificate of occupancy shall be issued only when all plantings have been installed and all the work shown on the approved landscape plan has been completed. Substantial changes in plantings which have changed the intent of the approved plans and changed the credit totals used to meet the ordinance requirements shall be reviewed by the Town staff for compliance prior to the issuance of the certificate of occupancy.

¹ "Balled & Burlapped"

2. An irrevocable letter of credit or bond for 125 percent of the cost of landscaping and uncompleted work, as determined by the executed contract, will be accepted in lieu of installation where periods of adverse planting conditions prohibit the installation of the work or where the certificate of occupancy is required prior to the completion of the landscaping.

G. Tree preservation/protection.

1. **Purpose and intent.** The purpose of this section to promote the preservation and protection of existing tree coverage on a site. Existing trees enhance and improve overall land values and aesthetics, contribute to the production of oxygen, reduction of carbon dioxide and water runoff while at the same time reducing the overall urban heat buildup and soil erosion.
2. **Exemptions for timbering and silviculture.** Normal forestry activities on property taxed under present-use value standard or conducted pursuant to a forestry management plan, prepared and approved by a forester registered according to G.S. § 89B are exempt from tree preservation requirements.
 - a. No forestry activities may take place on property until the property owner or his representative has obtained a forestry permit from the Town of Garner Planning Department. Failure to obtain a permit shall subject the owner to a fine not to exceed \$500.00. Each day the violation continues shall be considered a new violation, subject to a new penalty.
 - b. Forestry activities are strongly encouraged to exclude all tree harvesting and thereby preserving all trees within following perimeter buffer areas:
 - (1) Fifty-five-foot wide buffers located along roadways or located adjoining developed properties; and
 - (2) Thirty-foot wide buffers located adjoining undeveloped properties.
 - c. In cases where all trees or substantially all trees are removed from the above referenced perimeter buffers, the Town will not grant site plan or subdivision plan approval for said property for a period of five years following the harvest of such trees. The five-year

waiting period may be waived if the Town Council, by a three-quarters vote, determines a project to be desirable and grants the right to immediate development on recently timbered land where no perimeter buffer was kept.

3. **Significant or specimen tree protection requirements.** Rare species listed under the North Carolina Natural Heritage Program shall be saved. Such trees shall be required to be saved unless the BOA concludes such trees do not significantly contribute to the Town's appearance and natural environment, and where retaining such trees unreasonably burdens development, as described below.

Tree Type	Tree Size
Overstory Hardwood Tree	24" DBH or greater
Evergreen Tree	30" DBH or greater
Understory Tree	10" DBH or greater

- a. When development is unreasonably burdened by retaining such trees, the following criteria is used to prioritize trees to be saved based on the following criteria.
 - (1) Rareness of species;
 - (2) Evidence of disease/insects;
 - (3) Size and age of tree;
 - (4) Aesthetic value (i.e. flower, fruit, color, etc.);
 - (5) Expected longevity of species;
 - (6) Size at maturity; and
 - (7) Severity of slope.

H. **Stop work orders and violations/penalties.** See Article 10, Enforcement.

I. **Tree canopy cover.**

1. Purpose and intent. The objective of tree canopy cover standards is to preserve and maintain appropriate undisturbed tree cover, and where needed, require the provision of replacement tree cover on development sites within the Town of Garner zoning jurisdiction. Such standards support the reduction of soil erosion, air pollution, stormwater runoff and noise; moderate temperatures; and protect plant and wildlife habitat, which together assist in providing a healthier living environment for the citizens of the Town.

2. **Tree cover requirements.**

- a. All new development must meet the tree cover requirements outlined in the tables below. These standards can be achieved by preserving existing trees on the site, or by planting replacement trees. Trees in required buffer yards and easements, and street trees may be credited towards the tree cover requirements. Preference is given to preserving existing trees, rather than preservation and planting, or exclusive planting, and this preference is reflected in the standards of the table.
- b. Water surface areas of ponds, lakes or other surface water bodies (excluding stormwater control structures) shall be excluded from the total land area for the purposes of calculating tree cover requirements.
- c. Tree residential development cover requirements.

Preserved Tree Cover Area	Replacement Tree Cover Area	Minimum Total Tree Cover Area
12%	Plus 0% equals	12%
8.5%	Plus 4% equals	12.5%

Article 7. General Development Standards

5%	Plus 8% equals	13%
1.5%	Plus 12% equals	13.5%
0%	Plus 14% equals	14%

d. Non-residential development cover requirements.

Preserved Tree Cover Area	Replacement Tree Cover Area	Minimum Total Tree Cover Area
10%	Plus 0% equals	10%
7.5%	Plus 3% equals	10.5%
5%	Plus 6% equals	11%
2.5%	Plus 9% equals	11.5%
0%	Plus 12% equals	12%

- e. Areas required to be undisturbed by other requirements of the Garner UDO shall be presumed to meet requirements of this section, provided applicable standards are met.
- f. All preliminary major subdivision plans, site plans, final plats and other types of plans or permits as determined by the Planning Director shall clearly indicate all tree preservation and tree replacement areas.
- g. Existing tree cover areas in new subdivisions are strongly encouraged to be located in common open space areas or protected buffers, where possible. Where this is not practical, perimeter buffer areas or conservation easement areas may be increased, provided the root zone of such trees can be protected during construction.

3. **Tree cover preservation area requirements.** Trees proposed to be preserved to meet the tree cover requirements above must also meet the following requirements for tree cover preservation areas.

- a. Preservation of groups of trees must occur in areas of at least 1,000 square feet on sites greater than one acre with no dimension less than 15 feet. For sites of one acre or less, preservation areas for groups of trees shall be a minimum of 500 square feet in area with no dimension less than 15 feet.
- b. Individual tree cover preservation area is defined by its root zone protection area, and must be minimum size of 200 square feet, even where the root zone protection area is smaller than this size. Where specimen trees are preserved outside of other required buffers, credit shall be granted at a rate of two times the square footage of the root zone protection area.
- c. In order to receive credit as tree cover, the minimum size for trees in a tree preservation area shall be two and one-half-inch DBH (except where such trees are specimen trees).
- d. In cases where there is uncertainty regarding the size and quality of trees proposed for preservation, the Planning Director shall have the authority to require submittal of a limited tree survey to substantiate that such areas meet the minimum standards.

4. **Replacement tree cover requirements.**

- a. Replacement trees are required to meet the standards listed in the table below.
- b. At least 50 percent of the replacement trees shall be two and one-half-inch DBH or larger.
- c. At least 50 percent of the replacement trees must be large hardwoods native to this region.

- d. A Variance is required to approve replacement trees of different sizes or species when it determines that some flexibility is needed to better meet the purpose and intent of these regulations. For every one-half-inch caliper above what is listed below a credit of 25 square feet may be allowed (i.e. three-inch tree may receive a credit of 225 square feet).

DBH (inches)	Credit (square feet)
2½	200
2	175
1½	150
1	100
Less than 1	No credit

5. **Protection subsequent to plan approval.**

- a. **Fencing.** During the entire period of construction activity on the site, all protected trees shall be surrounded and protected by an orange Tensar geogrid fencing fabric or approved equal fencing. Tree protection fencing shall be installed a minimum of ten feet from the trunk of any protected tree or drip line, whichever is greater. For any tree greater than ten inches DBH, this distance shall be increased one foot for every one inch in DBH. Tree protection fencing shall be maintained until a final certificate of occupancy has been issued, unless expressly exempted by the Planning Director.

One sign shall be placed every 200 feet along fencing to read:

**"TREE PROTECTION AREA—DO NOT ENTER/
PARA PROTECCION DE LOS ARBOLES—PROHIBIDO ENTRAR"**

6. **Soil disturbance.** Subsequent to plan approval and during the entire period of construction, there shall be no soil disturbance or compaction within areas designated for tree preservation and protection, and areas protected by tree protection fencing. This includes no stockpiling of construction or other material, and no bore sampling or other similar vehicular traffic. Failure to comply with this prohibition shall subject the owner to a fine in accordance with Section 10.3.

7. **Tree survey.**

Commentary: Tree surveys are not mandatory, but may be required if landscape credit is requested for existing trees proposed for preservation when the location and size of said trees cannot easily be determined by the Planning Department.

A tree survey when required by the Planning Director shall include:

- a. General significant area outline of existing trees to be saved and any individual trees meeting minimum requirements with species (abbreviated) and DBH next to each location;
- b. Any trees meeting the DBH standards in paragraph G.3., above; and
- c. Any existing tree eight inches DBH or greater within the first 15 feet of the portion of the buffer closest to the subject development.
- d. Specimen trees located within the following areas are not required to be surveyed:
 - (1) Floodway;

- (2) Floodway fringe;
- (3) Preserved wetlands;
- (4) Stream buffers; and
- (5) Undisturbed steep slopes.

8. Tree preservation incentives.

- a. The Planning Director shall approve up to a 15-percent reduction in the required number of parking spaces if at least one significant tree for every three parking spaces is saved outside of the required buffers and floodways.
- b. Trees and shrubs retained on-site may be used to meet landscape requirements if the trees and shrubs meet the standards of the buffer or yard to which they are being applied.
- c. Undisturbed areas may be counted towards nitrogen reduction requirements.

J. Xeriscape landscape design and planting.

- 1. **Purpose and intent.** Xeriscaping is a landscaping method that maximizes the conservation of water by the use of site appropriate plant material, adequate soil preparation, proper maintenance practices and efficient irrigation that conserves water and protects the environment. Implementing the seven principles of xeriscaping below reduces the use of fertilizers and chemicals, and can reduce water consumption and improve plant vigor.
- 2. **Reduction in buffer width for xeriscaping.** Where the applicant demonstrates that all seven of the xeriscaping principles in the paragraph below have been satisfied, a reduction of up to ten percent of a required perimeter buffer width shall be allowed.
- 3. **Seven principles of xeriscaping.**
 - a. **Planning and design.** Analyze the site to take advantage of the existing conditions (i.e. solar orientation, existing vegetation etc.) that can facilitate the conservation of utility and water usage and over all maintenance costs to a site, locate and develop use areas to accommodate specific activities, identify zones of varying water requirements.
 - b. **Soil analysis and preparation.** Typical construction site soils lack desirable soil structure and available water or nutrients. Xeriscape methods encourage plants to develop deep root growth so that plants have access to moisture after soils dry out. This is accomplished by breaking up soil compaction and adding organic matter to keep soils porous, as well as chemically improving soils with nutrient additives. Both physical and chemical improvements are needed for deep root growth. A successful xeriscape plan includes soil test results of each water requirement zone with recommendations on correcting deficiencies in soil pH, nutrients, and amendments. If soil test is not available the following soil improvements may be used as substitute:
 - (1) Till the soil to a depth of six inches to break up compaction; and
 - (2) Incorporate topsoil, add four inches of shredded or composted organic matter, lime 9, and a balanced fertilizer to the top two to four inches of soil.
 - c. **Appropriate plant selection.** When deciding on plant material, it is important to select material that is not only compatible with the design but also well suited to the site, adaptable to the local environment, and grouped according to water needs.
 - d. **Practical turf areas.** To reduce maintenance and utility costs, it is

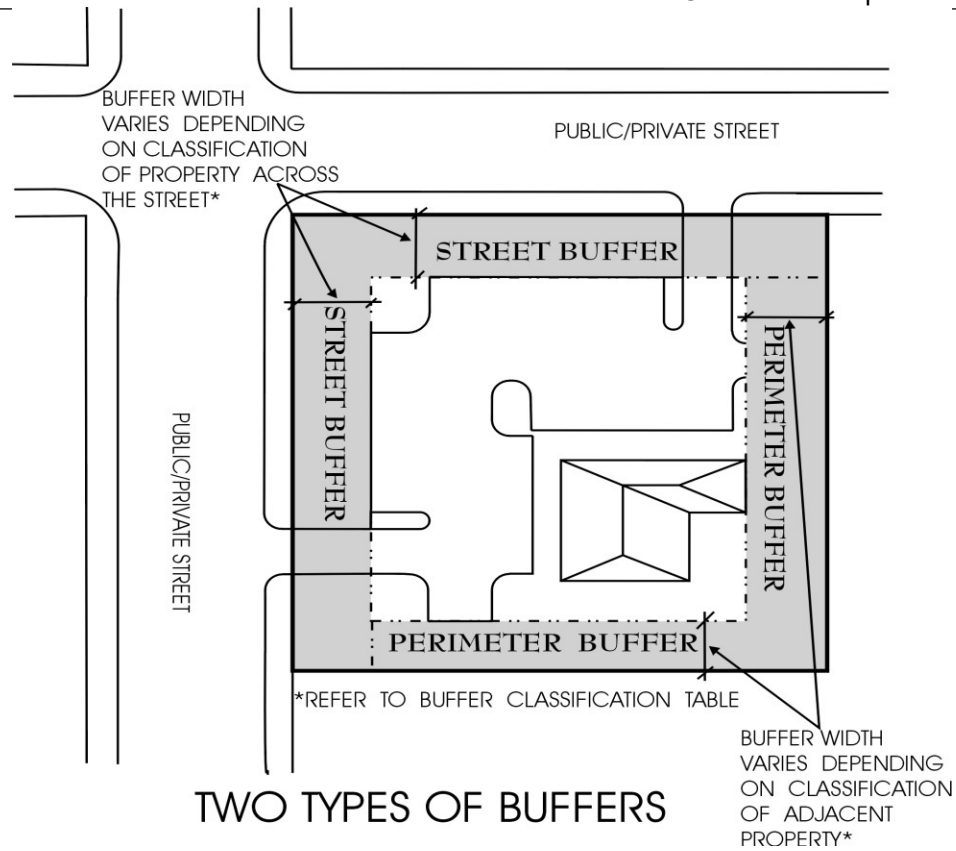
important to design turf areas that are specific to a use (i.e. accent area in front of a doorway, entertainment zone, or play area for children) and reduce or eliminate other areas of turf grass.

- e. **Efficient irrigation.** Zone the different plant materials by water requirements and provide the type of irrigation appropriate to the zone. Irrigate between the hours of 9:00 p.m. and 9:00 a.m. so as to decrease water loss due to evaporation. Use drip irrigation in beds that are mulched or on steep slopes to thoroughly soak the area without washing away the mulch or causing run-off. Wet the soil to a depth of six to eight inches to encourage deep root growth. Simply sprinkling mulched areas lightly can induce shallow root growth; shallow-rooted plants suffer in dry periods. If necessary, split water applications into two time blocks to allow the soil to absorb the water.
 - f. **Mulching.** Use two to four inches of fine-textured organic mulches (wood chips, composted leaves, shredded bark, pine straw) to conserve moisture and reduce the need for supplemental water. Do not use inorganic mulches, such as gravel, which accelerates water loss from plants and soil by absorbing and reradiating heat from the sun. Do not use plastic as a soil cover as it prevents oxygen exchange and encourages shallow root growth.
 - g. **Appropriate maintenance.** Maintain xeriscape planting by fertilizing less during dry periods so as not to dehydrate roots, prune lightly especially during dry periods to avoid production of new growth when water is scarce, test the soil pH and correct for deficiencies; water thoroughly at a rate that matches soil absorption to encourage deep root growth and reduce run-off; mow turf grass often and high to encourage deep root growth and to shade the soil thereby reducing water use; regularly maintain and adjust irrigation systems for maximum efficiency; and, aerate to correct soil compaction and to reduce weeds and pests.
4. **More information.** For more information on xeriscaping, refer to the Town of Garner Planting Manual (in Appendix E) for details.

K. **Buffers.**

1. **Purpose and intent.** Buffers are required where incompatible uses are adjacent to or directly across the street from each other. There are two types of buffers: perimeter buffers along side and rear lot lines and street buffers along lot lines adjacent to private or public streets. Perimeter buffers perform a dual role of providing both horizontal separation and vertical screening. Street buffers provide horizontal separation only. Both perimeter and street buffers shall retain all existing vegetation a minimum of four inches DBH or greater. The potential negative effect of the incompatible use of the subject property shall determine the required buffer width. No land disturbing activities are allowed except where specified below. Minor clearing of underbrush is allowed in order to maintain or enhance public safety. Buffer requirements may be met with supplemental planting.

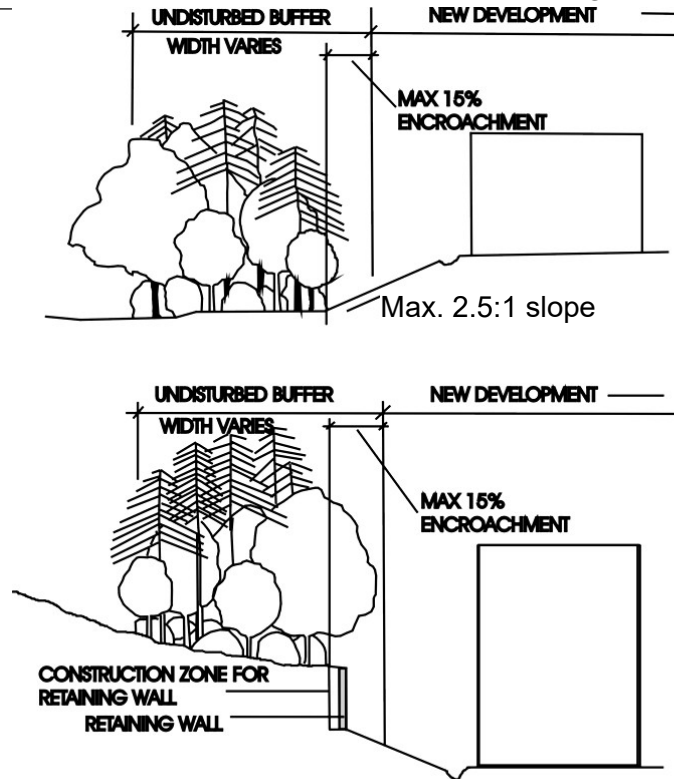
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2. **Buffer vegetation requirements.** No land disturbing activities are permitted in buffers containing existing trees with a minimum caliper DBH of four inches except as provided below. A tree survey, in accordance with [Section 7.1] I.7, Tree survey, may be required for buffers containing significant or specimen trees that meet the requirements set forth in Subsection G.3, Significant or specimen tree protection requirements. No land disturbing activities shall be permitted within the critical root zone of any retained significant or specimen trees. When development is unreasonably burdened by saving significant or specimen trees within buffer classifications 3 through 6, the developer may file a Variance application with the BOA to determine what replanting and/or screening measures shall be implemented.

- a. **Limited grading within buffers.** Limited grading within designated buffers may be permissible according to the following limitations when grading encroachment is the only practical solution after all other reasonable alternatives have been exhausted.

Note: Image to follow on next page.



LIMITED GRADING WITHIN BUFFERS

- (1) In cases where designated buffers completely lack existing trees and vegetation, grading within the buffer area is permitted.
 - (2) In all other cases, grading encroachment is allowed only in buffers 35 feet wide or greater and is limited to a maximum of 15 percent into the development side of the buffer as illustrated by the above graphic. The length of the grading encroachment in the buffer area is limited to a maximum of 15 percent of the total length of the affected buffer.
 - (3) If retaining walls are used, grading shall not exceed a slope ratio of 2 1/2:1.
- b. **Existing vegetation.** Existing vegetation can be used to meet all or part of the requirements of this section where such vegetation meets the minimum standard for vertical screening under the appropriate classification. Where supplemental planting is required, the Planning Director shall have the authority to specify the location to account for and provide maximum screening in the

event of significant grade differences between properties to which the buffer standard applies.

c. **Proposed vegetation.** Where supplemental planting is required in buffers, the Planning Director shall have the authority to specify the location to account for and provide maximum screening in the event of significant grade differences between properties to which the buffer standard applies. Proposed vegetation shall adhere to the following buffer planting requirements:

- (1) Required planting shall use a mix of deciduous overstory trees, evergreen trees, deciduous understory trees/large shrubs, and small evergreen shrubs to provide vertical screening;
- (2) Monoculture plantings are not permitted;
- (3) The mix shall create a 100 percent screening buffer within two years of planting.
- (4) In calculating buffer planting requirements, areas of driveways and sight distance triangles shall be excluded; and
- (5) Deciduous overstory trees, small trees or large shrubs, evergreen shrubs and evergreen trees shall be distributed along the entire length of the buffer. Due to unique characteristics of a site, or design objectives, alternative designs that achieve the required screening may be approved by the Planning Director.

3. **Site-specific conditions.** At the time of site plan approval, the Planning Director may require additional berming, landscaping, or screen walls to satisfy buffer separation and screening requirements on a case-by-case basis.

- a. If berming is used, it shall not exceed a slope ratio of 2:1 feet. The berm must be vegetated with plant material that will accomplish a height of six feet including the berm within two years of planting.
- b. If an opaque fence or wall is to be used, the height shall be six feet with the finished side facing adjacent property or right-of-way.

4. **Buffers and clear sight triangles.** No screening or buffering shall interfere with the sight distance triangles required for safe traffic movements at driveway or street intersections.

5. Land use buffer classifications.

Class	Uses Included
1	Single-family detached, modular single family homes, manufactured homes, cemeteries*, public park (passive use only)
2	Townhomes, condominiums (less than 12 units in project), two-family dwelling, apartments (12 units or less per acre), multiplex units, manufactured home parks, family care homes, group care homes, intermediate care homes, library, museum, art gallery, art center, day care facility, continuing care facility, group care facility, handicapped institution, intermediate care institution, nursing home, child care home, adult care, bank, community center (less than 5,000 sq. ft.)

3	Apartments (13 units or greater per acre), townhomes and condominiums (more than 12 units or more in project), business schools, public or private schools, post office, medical clinic, mental health facility, public park (active use only), minor utility, restaurant, public swimming pool, public tennis courts, indoor entertainment facility, theater, medical office, convenience store (without gasoline sales), office, retail sales with no outdoor operations, personal service, community ctr. (greater than 5,000 sq. ft.), gym, spa, bed and breakfast, religious institutions, agriculture, golf course/country club, private swimming pool), private indoor/outdoor tennis court, Town hall, hospice, hospitals or ambulatory health/emergency care facilities without heliport operations
4	Bus passenger terminal, taxi/limousine operations or facility, trade/vocational schools, hospital, major utility, telecommunication facility, drive in/up restaurant, horse stable, extended stay facility, hotel/motel, convenience store (with gasoline sales), open air markets, indoor veterinarian/kennel facility, car wash, vehicular repair, vehicular sales and rentals, limited vehicular service, commercial parking lots, private outdoor athletic facility, water slide, outdoor entertainment, shopping center
5	College or university, ambulance service, rescue squad, fire station, police station, solar farms, bar, tavern, night club, outdoor veterinarian/kennel facility, retail with outdoor operation, self-service storage (inside or outside), railroad tracks
6	Military reserve, prison or jail, sexually oriented business, drive in theater, aviation service, light industrial flex space, manufacturing/production, mining/quarry operations, warehouse or freight storage, truck terminals, reclamation landfill, recyclable material collections, salvage yard, sanitary landfill, wholesale sales, industrial (outside), vehicle towing, greenhouse, hospitals or ambulatory health/emergency care facilities with heliport operations

Note: Projects (new or expansion to existing ones) that abut an existing cemetery shall provide a minimum ten-foot wide buffer area with landscaping to achieve a 100 percent screen up to a height of six feet. New cemeteries or expansion to existing ones must meet required landscape and buffers requirements of this ordinance.

6. **Buffer width charts.** The following tables provide requirements for buffers between two uses. To use the tables identify the appropriate classification numbers for the proposed use and adjacent property or street. The required buffer width is listed at the intersection of the respective row and column.

a. Perimeter buffers adjacent to developed zoning district.

Proposed Use Classification	Adjacent Developed Classification (width in feet)					
	1	2	3	4	5	6
1	0	15	25	25	35	45
2	25	15	15	15	25	35
3	35	25	15	15	25	25
4	45	35	25	15	15	15
5	55	45	35	25	15	15
6	65	55	45	35	25	15

b. Perimeter buffers adjacent to undeveloped zoning district.

Proposed Use Classification	Adjacent Undeveloped Zoning District (width in feet)					
	SF	MF	NC, NO	CR, CBD, SB	OI	I-1, I-2
1	0	15	25	25	25	35
2	15	15	15	15	15	25

3	25	15	15	15	15	25
4	25	20	15	15	15	15
5	35	25	15	15	15	15
6	45	25	15	20	20	15

- c. **Street buffers across from existing and proposed development.** The street buffer has only a horizontal separation requirement. For screening requirements, refer to Section L.4.b, Planting requirements in vehicle surface area, and Section M., Screening of objectionable views. Street buffers include land classifications across an adjacent street or railroad track. Refer to overlay districts for further landscaping requirements specific to thoroughfares.

Proposed Use Classification	Street Buffer Width (width in feet)			
	1	2	3 and 4	5 and 6
1	0	15	20	25
2	15	15	15	25

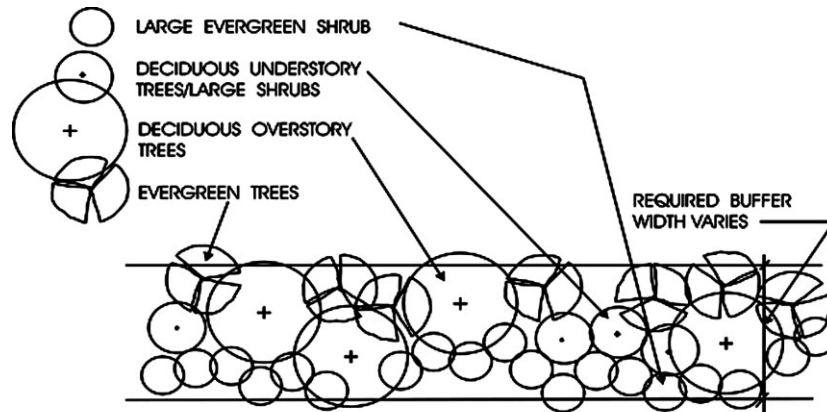
Proposed Use Classification	Street Buffer Width (width in feet)			
	1	2	3 and 4	5 and 6
3	20	15	15	15
4	25	25	15	15
5	25	25	15	15
6	25	25	15	15

7. **Buffer width reductions.**
- a. Where two adjacent properties, both in classifications 3 through 6, have planting requirements for perimeter buffers, the subject property may be allowed a 50% reduction in the required adjacent perimeter buffer width and planting. If the adjoining property is developed and has a continuous planting of existing, mature evergreen shrubs along the entire length of the adjacent side property line the subject property may reduce the adjacent perimeter buffer by up to 50 percent and install only half the required side buffer planting requirements.
 - b. If the adjoining property is undeveloped and has a planting requirement along the entire length of the adjacent side property line the subject property may reduce the adjacent perimeter buffer by up to 50 percent and install only half the required side buffer planting requirements.
8. **Planting requirements.** Planting requirements shall apply only to screening for perimeter buffers. Planting requirements shall apply to all classifications and shall be satisfied in accordance to this subsection.
- a. **Trees.** Trees shall be evenly distributed along the entire length of

the buffer. To calculate the required number of trees refer to Section K.5, Land use buffer classifications, and Section K.6, Buffer width charts, above. To calculate the spacing constraints for the respective trees/large shrubs and evergreen shrubs use the following applicable requirements:

(1) Deciduous overstory trees.

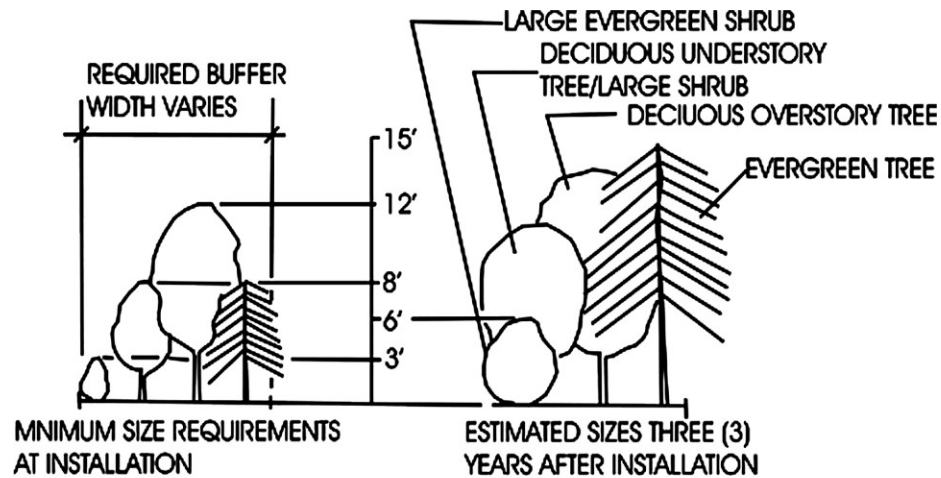
- (a) No tree with a caliper less than two and one-half inches shall be permitted.



PLANTING RATE NOTES:

1. EVERGREEN TREES AT 50% REQUIRED NUMBER
 2. DECIDUOUS OVERSTORY TREES AT 20% - 30% REQUIRED NUMBER
 3. DECIDUOUS UNDERSTORY TREES/LARGE SHRUBS AT 20% - 30% OF REQUIRED NUMBER
 4. LARGE EVERGREEN SHRUBS AT 1.2 TO 4 TIMES TOTAL NUMBER TREES
- *DISTRIBUTE THE VARIOUS PLANT TYPES ALONG LENGTH OF BUFFER

PLAN VIEW - TYPICAL BUFFER



SECTION VIEW - TYPICAL BUFFER

- (b) Of the total number of required trees, 20 to 30 percent shall be deciduous overstory trees.
- (c) The planting rate per square foot shall be calculated in accordance to the following table:

BUFFER POINTS FOR TREES	
Buffer Width	One Tree per Square Feet of Buffer
15 feet	200 square feet
25 feet	300 square feet
35 feet	350 square feet
45 feet	400 square feet
55 feet	475 square feet
65 feet and above	550 square feet

(2) Deciduous understory trees/large shrubs.

- (a) No deciduous understory tree/large shrub less than eight feet tall shall be permitted to be planted.
- (b) Of the total number of required trees, between 20 and 30 percent shall be deciduous understory trees/large shrubs.
- (c) The shrubs can be deciduous or evergreen.
- (d) If there is significant existing vegetation and/or significant site characteristics/design solutions that provide adequate screening, two smaller deciduous understory trees/large shrubs with a minimum height of four and half feet can be substituted for one required deciduous understory tree/large shrub.

(3) Large evergreen trees.

- (a) No large evergreen trees less than eight feet tall shall be permitted.
- (b) Of the total number of required trees, at least 50 percent shall be large evergreen trees.
- (c) If there is significant existing vegetation and/or significant site characteristics/design solutions that provide adequate screening, two smaller evergreen trees with a minimum height of four and half feet can be substituted for one required large evergreen tree.

b. Evergreen shrubs.

- (1) Evergreen shrubs shall be installed at a minimum height of 36 inches.
- (2) Evergreen shrubs shall reach six feet within two years of planting.
- (3) To calculate the required numbers of shrubs refer to Section K.5, Land use buffer classifications, and Section K.6, Buffer width charts.
- (4) Evergreen shrubs shall be evenly distributed along the entire length of the buffer at the following rates per square foot:

BUFFER POINTS FOR SHRUBS	
Buffer Width	One Shrub per Square Feet of Buffer
15 feet	50 square feet
25 feet	75 square feet
35 feet	125 square feet
45 feet	200 square feet
55 feet	300 square feet
65 feet and above	450 square feet

9. Sight line drawings.

- a. The Planning Director shall require sight line drawings to be submitted with landscape plans if the proposed development is adjacent to a residential district or use or in cases where the proposed development may have some impact on street views.
- b. The Planning Director may require sight line drawings to be submitted with landscape plans based on, but not limited to, the following criteria:
 - (1) Where existing vegetation or proposed vegetation and berming is not adequate;
 - (2) Where the first story finished floor elevation of the proposed development is a minimum six feet higher or lower than adjacent residential zoning or use;
 - (3) Where materials, character or architectural features for the proposed building are different from adjacent residential structures;
 - (4) Where the proposed building volume is five times or greater than adjacent residential building volume, and/or the height of the proposed building is three stories (or equivalent) or higher.
- c. Implications for site layout may include increased buffer width and standards, revision to building footprint dimension or location, revision to building orientation, revision to location of site support structures (dumpster, accessory buildings).

L. Street trees, street yard, side and rear yard, vehicular surface areas.

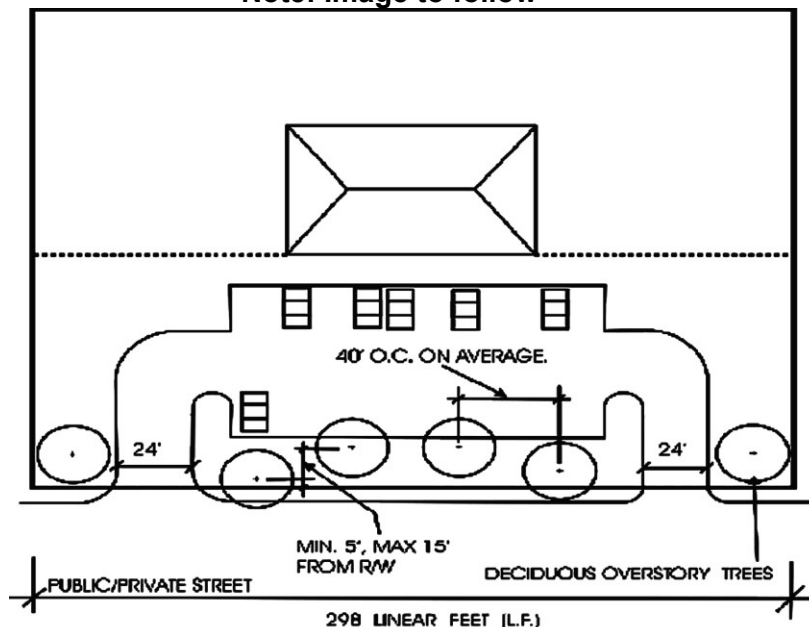
- 1. **Street trees.** Street trees shall create an environment that benefits from the aesthetic and environmental qualities of a consistent tree canopy along public and private streets and highways. Trees improve the overall appearance and provide shade, visual interest and reduce heat build up and run off.

- a. All new development and qualified expansion of existing

development, on both private and public street frontage, shall install at one overstory tree with a minimum caliper of two and one-half inches every 40 feet on average, or as close thereto as practicable. Planted trees shall be a minimum of five feet and maximum of 15 feet from the road right-of-way and shall be located within a public street tree easement. Variance from this spacing may be allowed to accommodate existing utilities or natural obstructions.

- b. Street trees shall be deciduous overstory trees that reach a minimum height of 35 feet at maturity. Where overhead wiring exists, small ornamental trees shall be used.
- c. To avoid a monoculture-planting scheme, it is recommended that a variety of tree species be planted for more diversity along the roadways.
- d. Credit will be given for the preservation of existing overstory trees that are healthy and of good quality. The developer may be required to submit a tree survey of all existing trees to be preserved. A minimum of two-thirds of the land area within each tree's critical root zone must be preserved for such trees to receive credit.

Note: Image to follow



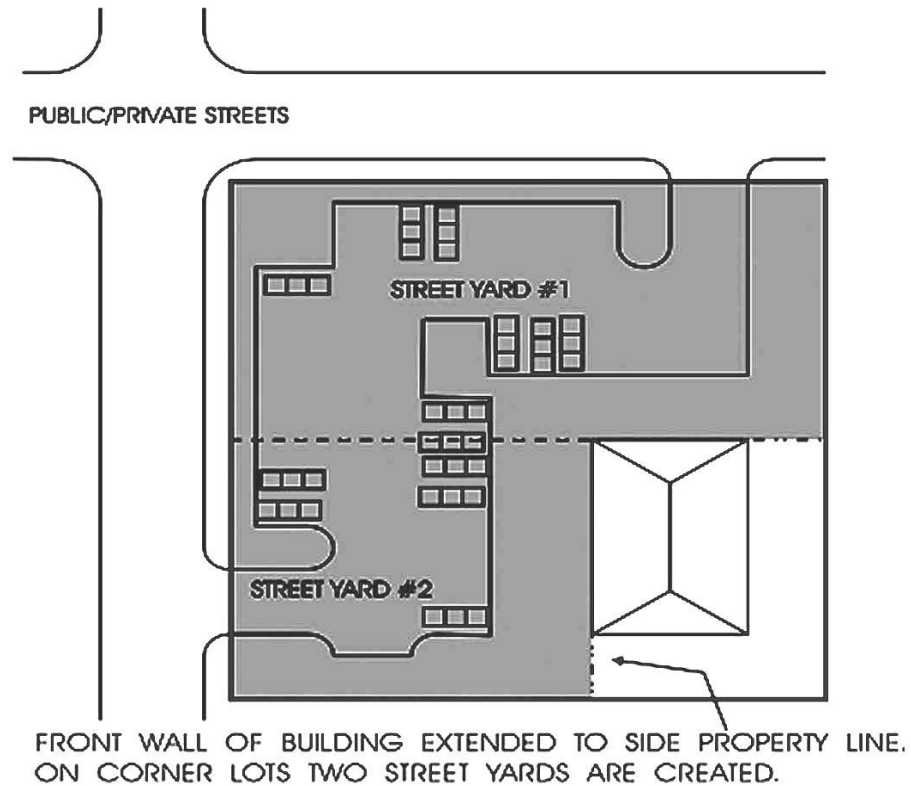
STREET TREE REQUIREMENTS

298 L.F. - 48 L.F. (DRIVEWAYS) = 250 L.F.
 250 L.F./40 = 6.25. i.e. 6. STREET TREES REQUIRED

- e. One hundred percent of the required street trees may be applied to the planting requirements of Section L.2, Street yards.
 - f. The BOA may waive strict compliance with this subsection if proposed alternative concepts would meet or exceed the visual impact provided by the deciduous overstory trees along the rights-of-way.
2. **Street yards.** A street yard is the protected landscape area contained by the existing or proposed street right-of-way and an imaginary line extending along the adjacent building facade or wall to the side property line (see illustrations on the next page). Street yards are intended to provide attractive vehicular and pedestrian views of the properties, to retain or supplement existing vegetation and to provide a visual and physical barrier between transportation routes and other land uses. Refer also to the overlay districts for discussion on street yards. Street yard requirements do

not apply to single-family residential districts or uses.

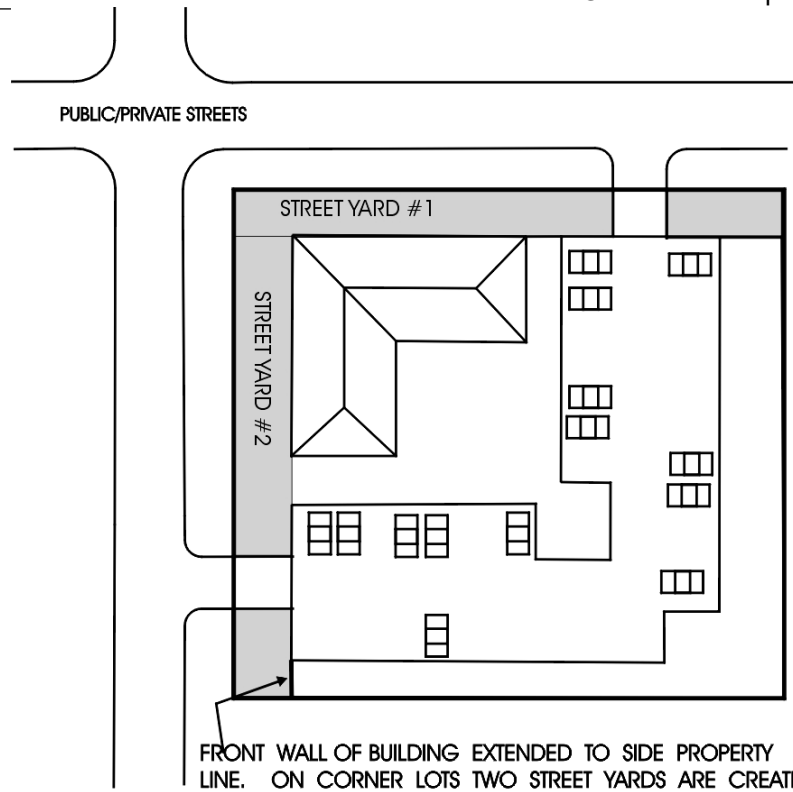
a. Design requirements.



STREET YARD AREA

- (1) Landscaping within the right-of-way of state roads requires an encroachment agreement from North Carolina's Department of Transportation (NCDOT). Applicants must contact NCDOT for their approval and coordinate landscape installation with any existing or proposed utility easements or services in the right-of-way. Applicants must provide the Town of Garner Planning Department with a copy of an approved encroachment agreement prior to the issuance of a building permit.
- (2) Sight distance triangles must be maintained at all intersections (see Section K.4). Plantings must not create any visual obstruction between 30 inches and seven feet in height within this triangle.

Note: Image to follow



STREET YARD AREA

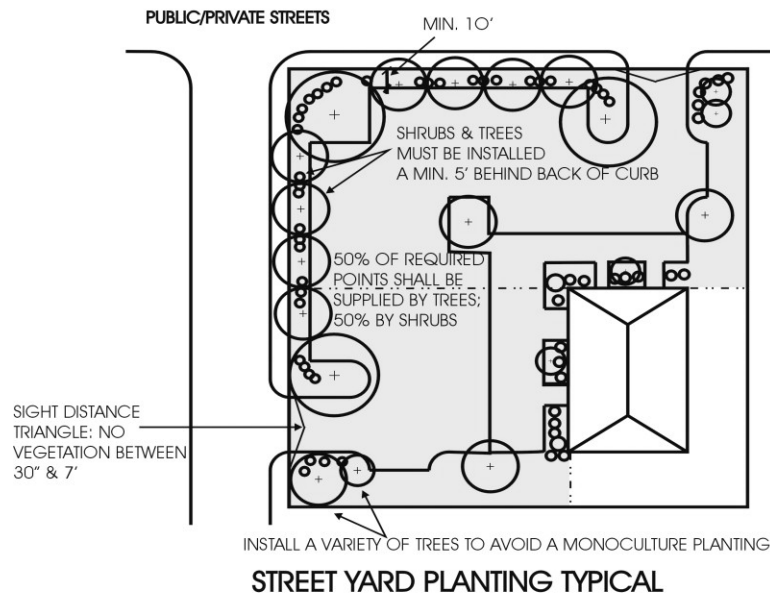
- (3) Refer to the plant point table in Section D.3 for point assignments specific to plant types and sizes. Refer to Section L.4.b, Planting requirements in vehicle surface area, for additional required screening of views of vehicles from the street right-of-way.
 - (4) If two street yards cross, the street yard with the lesser width between the right-of-way and the building wall/facade shall be used in this area of overlap. Refer to overlay districts for additional requirements.
- b. **Modification permitted in industrial subdivisions.** The landscaping requirements for industrial subdivision shall be met in a manner that enhances street appeal and maximizes screening of objectionable views. Up to 75 percent of the required plantings in the side and rear yard area, and vehicular surface area plantings can be applied toward street yard areas for maximum street appeal. No reduction shall be allowed in side and rear yards where that yard is adjacent to existing residential uses or districts.
- c. **Planting requirements.** The required tree and shrub installation is based on the total required points in street yards for the subject property.
- (1) Calculate the required points by determining the area in street yard(s). Multiply that area by a factor specific to the subject property's zoning district as follows:

Proposed Use	Points per Square Foot of Street Yard
Residential and Multifamily	0.06
Office and Industrial	0.025

Commercial	0.025
Retail, up to 3 acres	0.025
Retail, 3 acres or greater	0.015

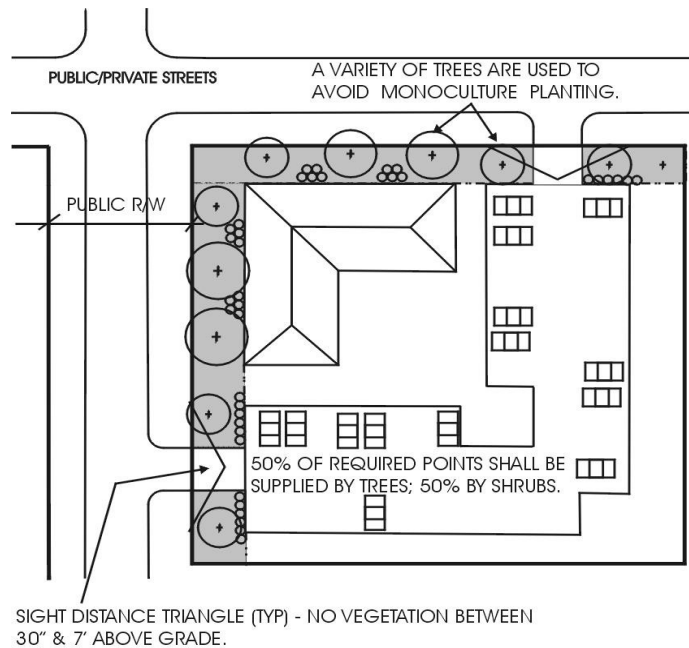
- (2) Reduction of total required points in street yards is allowed for large front setbacks according to the following percentages:
 - (a) Setbacks for commercial, office, and industrial districts up to 100 feet shall meet 100 percent of the total landscape credit requirements in the street yard for planting development.
 - (b) Setbacks for commercial, office, and industrial districts up to 200 feet shall meet 85 percent of the total landscape credit requirements in the street yard for planting development.
 - (c) Setbacks for commercial, office, and industrial districts greater than 200 feet shall meet 75 percent of the total landscape credit requirements in the street yard for their planting development.
- (3) Fifty percent of all required points in street yards shall be supplied by trees, and 50 percent of all required points in street yards shall be supplied by shrubs.
- (4) Required buffer plantings, required street trees, required street yard plantings, and required vehicular surface area (VSA) plantings may be credited at 100 percent towards street yard plant point requirements.

Note: Images to follow on next page.



NOTES:

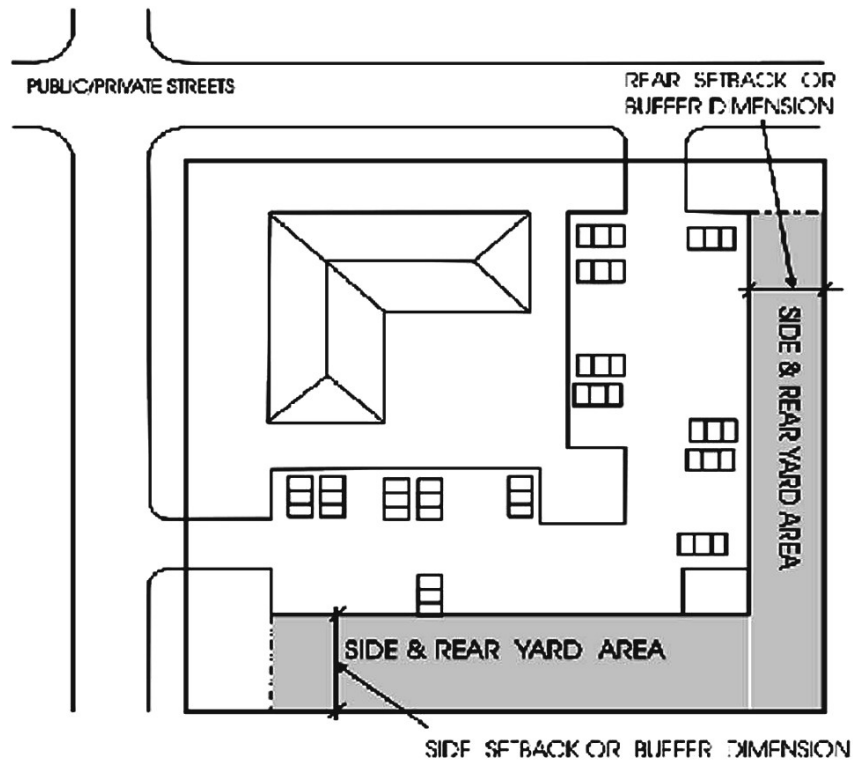
- 1. SEE ALSO VEHICULAR SURFACE AREA (VSA) PLANTING REQUIREMENTS.
- 2. REQUIRED BUFFER PLANTINGS, AND REQUIRED VSA PLANTINGS MAY BE CREDITED AT 100% TOWARDS REQUIRED TREE COVER PLANTINGS.
- 3. SHOW ALL CALCULATIONS FOR REQUIRED PLANTINGS.



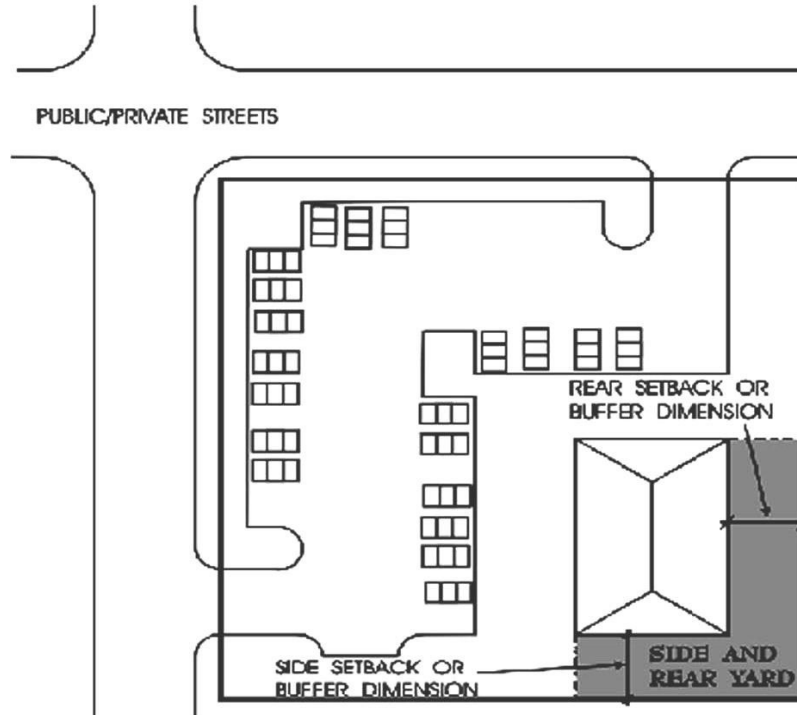
STREET YARD PLANTING - TYPICAL

NOTES:

1. SEE ALSO VEHICULAR SURFACE AREA (VSA) PLANTING REQUIREMENTS.
 2. REQUIRED BUFFER PLANTINGS, REQUIRED STREET TREES, REQUIRED STREET YARD PLANTINGS, AND REQUIRED VSA PLANTINGS MAY BE CREDITED AT 100% TOWARDS REQUIRED TREE COVER PLANTINGS.
 3. SHOW ALL CALCULATIONS FOR REQUIRED PLANTINGS.
3. **Side and rear yards.** The side and rear yard is that part of the lot not in the street yard. Side and rear yard plant distribution shall occur throughout the entire side and rear yard. The side and rear yard area planting requirements shall be calculated by measuring the area bounded by the property line and the required side and rear building setbacks or the areas of required buffer, whichever area is greater.
- a. **Design requirements.**
- (1) Where the planting requirements are greater for the side and rear yard than the perimeter buffer then 100 percent of both requirements shall be installed.



SIDE & REAR YARD AREA CALCULATION
 Note: Image to follow on next page.



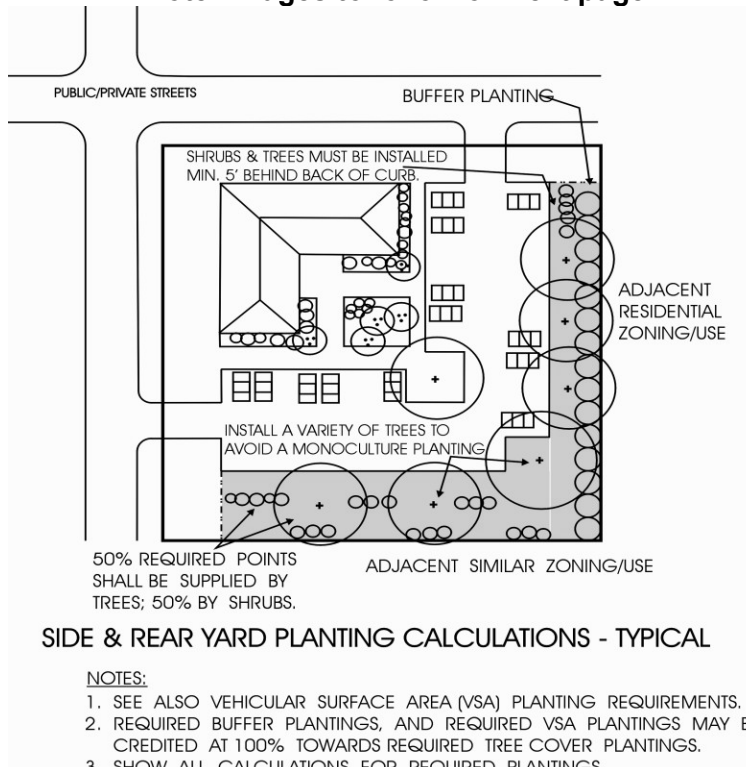
SIDE & REAR YARD AREA CALCULATION

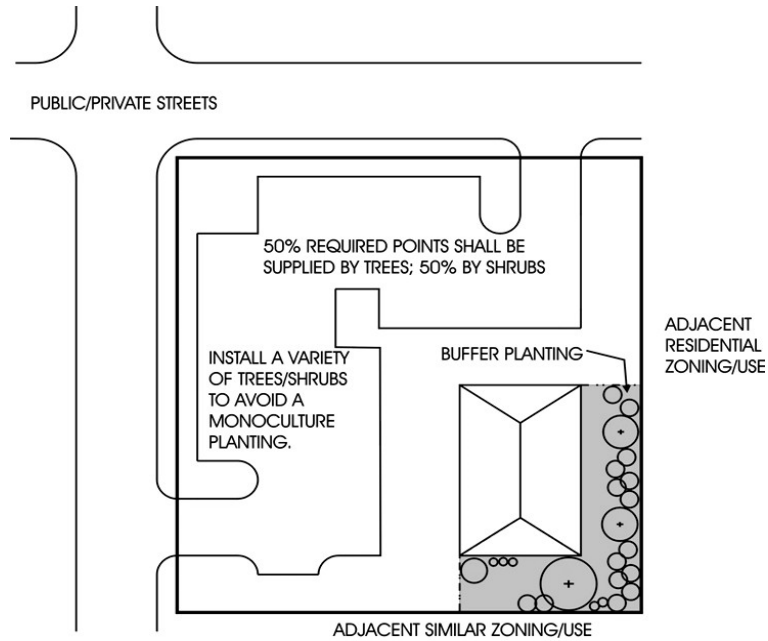
- (2) Where the planting requirements are greater for the perimeter buffer than the side and rear yard then only the buffer requirements shall be installed.
- b. **Planting requirements.** The required tree and shrub installation is based on the total required plant points in the side and rear yard for the subject property. The required plant points vary according to the UDO 7:34

zoning district of the subject property as listed on the following page. At least 50 percent of the plant points must be from trees, and the remainder must be from shrubs.

Proposed Use	Points per Square Foot of Side/Rear Yard
Residential and Multifamily	0.030
Office	0.020
Commercial	0.020
Retail, up to 3 acres	0.015
Retail, 3 acres or greater	0.010
Industrial	0.025

Note: Images to follow on next page.



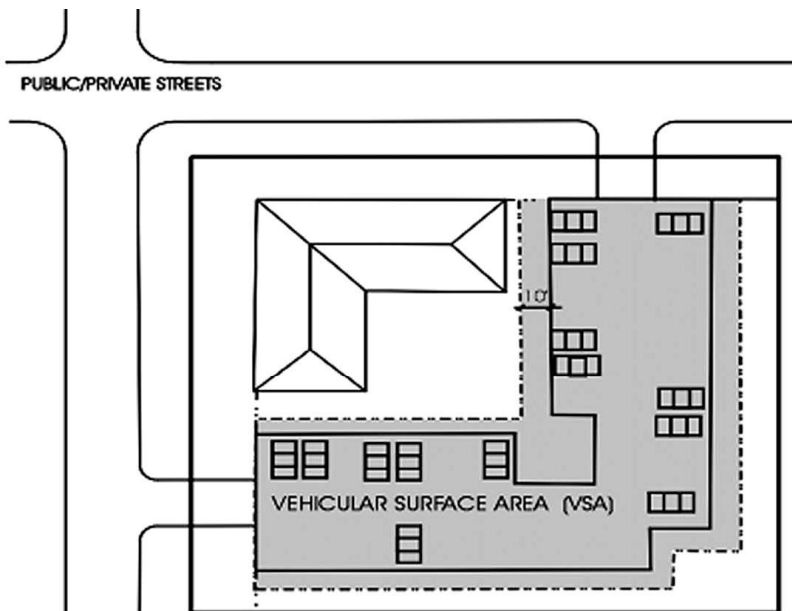


SIDE & REAR YARD PLANTING CALCULATIONS - TYPICAL

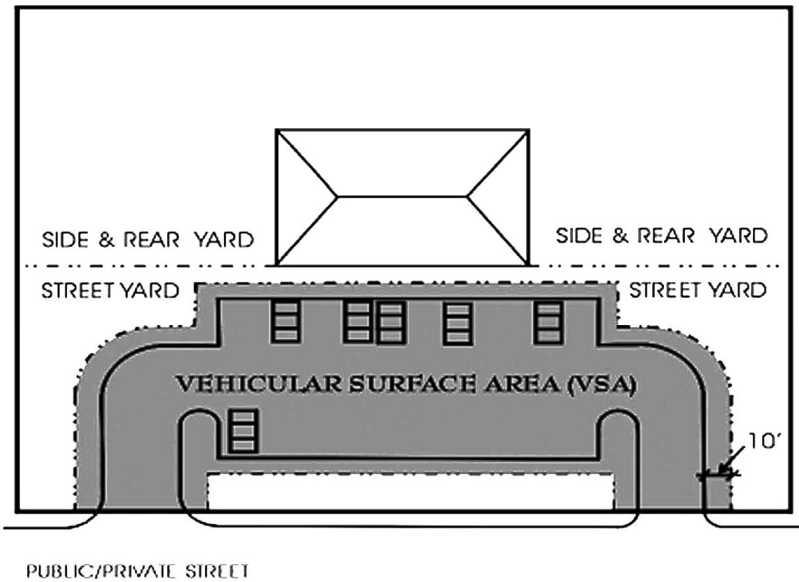
NOTES:

1. SEE ALSO VEHICULAR SURFACE AREA (VSA) PLANTING REQUIREMENTS
2. REQUIRED BUFFER PLANTINGS, AND REQUIRED VSA PLANTINGS MAY BE CREDITED AT 100% TOWARDS REQUIRED TREE COVER PLANTINGS.
3. SHOW ALL CALCULATIONS FOR REQUIRED PLANTINGS.

4. **Vehicular surface areas.** The purpose of this section is to provide visual relief from large expanses of pavement through the introduction of landscape plantings. Landscaping lessens the visual impact of parking areas while reducing heat, glare and pollution.



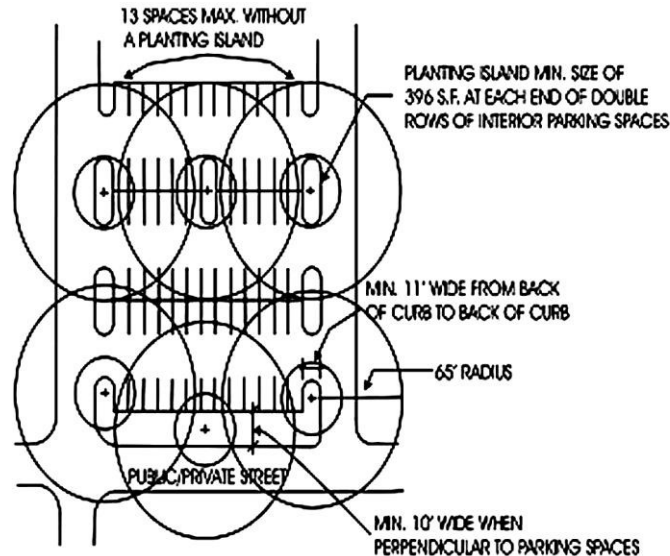
**VEHICULAR SURFACE AREA
IN SIDE AND REAR YARD**



VEHICULAR SURFACE AREA IN STREET YARD

- a. **Design requirements.** Vehicular surface areas may be located within the street, side and rear yards. Planting requirements are created for these vehicular surface areas based upon the yards they are within. Planting incorporated into these areas shall be designed using the following design guidelines and criteria.
- (1) Landscape islands shall be evenly distributed throughout the vehicular surface areas for maximum shade. No parking space shall be more than 65 feet from the trunk of a deciduous overstory tree. Trees are permitted to be planted in clusters provided that it exceeds all other planting requirements..
 - (2) Plantings used to meet these requirements shall be located within the vehicular surface area or in plant beds within ten feet of the parking surface areas. Trees in the adjacent street or side and rear yard that are within ten feet from the vehicular surface area may be used to meet this requirement.
 - (3) Landscape islands within the vehicular surface area shall be a minimum of 198 square feet in area and 11 feet in width from back-of-curb to back-of-curb.
 - (4) Landscape planting areas adjacent to vehicular surface areas and perpendicular to parking spaces shall be a minimum of ten feet in width. Unless a parking space contains a specified wheel stop, trees and shrubs shall be a minimum of five feet from the edge of the pavement.

Note: Image to follow on next page.



PARKING LOT TREE PLANTING REQUIREMENTS

NOTES:

1. EVERY PARKING SPACE SHALL FALL WITHIN A 65' RADIUS OF AN OVERSTORY TREE TRUNK
2. FOR EVERY PLANTING ISLAND AT THE END OF AN INTERIOR SINGLE PARKING ROW THAT IS A MINIMUM 324 S.F. (18 x 18) THERE MAY BE A REDUCTION OF UP TO 12% OF TOTAL REQUIRED PARKING SPACES IN PARKING LOTS 75,000 S.F. OR LARGER.
3. DO NOT INSTALL POLE-MOUNT LIGHTS IN THE SAME PLANTING ISLAND AS HOUSES AN OVERSTORY.

- (5) Planting areas at the end of parking space rows shall be required as follows:
 - (a) The maximum number of continuous parking spaces shall be 13.
 - (b) There shall be a planting island at least 198 square feet in size at the end of every row of perimeter parking spaces exceeding 13 parking spaces.
 - (c) There shall be a planting island at least 198 square feet in size at the end of every single row of interior parking spaces.
 - (d) There shall be a planting island at least 396 square feet in size at the end of every double row of interior parking spaces.
 - (e) Planting areas inside of parking islands shall contain positive drainage with no low spots that could trap water. All parking lot planting islands shall have curbing, pavement edging, or similar treatment around the perimeter to protect plant material.

b. Planting requirements.

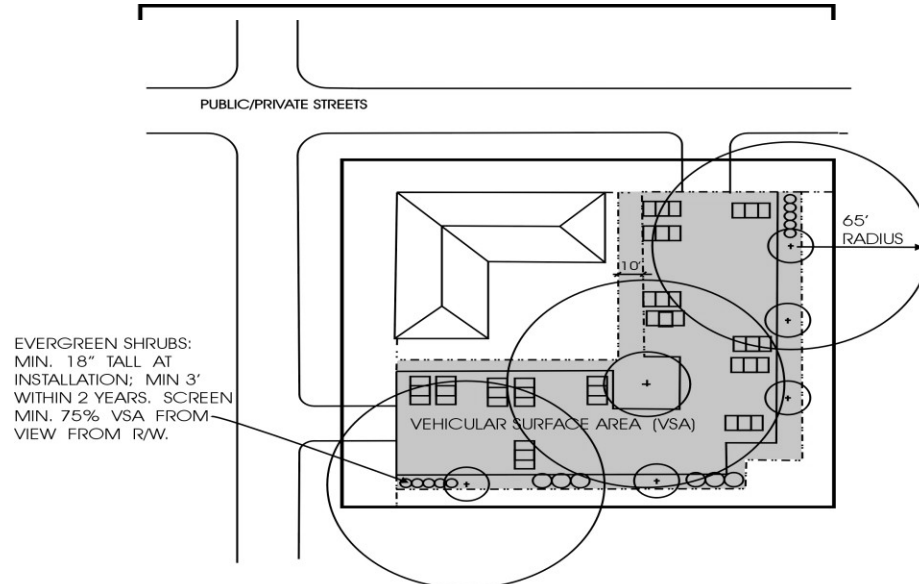
- (1) Screening of vehicular surface area from adjacent public rights-of-way or private streets is required. One hundred percent of the vehicular surface area requirements can be applied toward yard and buffer planting requirements if the planting used to meet specific yard and buffer planting requirements do not adequately provide the proper screening.
 - (a) Vehicular surface areas shall have a visually modifying year-round screen that screens a

minimum of 75 percent of the vehicular surface area from the public right-of-way and private street. The screen shall have a minimum height of 18 inches at planting. The screening must reach a height of three feet within two years of planting.

- (b) The screen used may be composed of plant material, fences, walls, berms or any combination of these elements. Berms shall have a slope ratio no greater than 2.5:1 (max. slope) with a minimum crown width of at least two feet and shall be stabilized and predominantly covered with staggered clusters of shrub plantings an average six feet on center.
- (c) Fences and walls shall be compatible with the adjacent existing or proposed structures. Fence or walls shall be supplemented with plant material, which shall screen 25 percent of the fence or wall area within one year of plant installation.
- (d) The required area to be landscaped within and directly adjacent to the vehicular surface area is based on the total size in vehicular surface area as follows:

Vehicular Surface Area	Required Landscaping
Under 10,000 square feet	5 percent
10,000 to 40,000 square feet	6 percent
Over 40,000 square feet	8 percent

- (2) Verification of obstructions shall be the responsibility of the developer through the use of sections and details illustrating the site conditions.



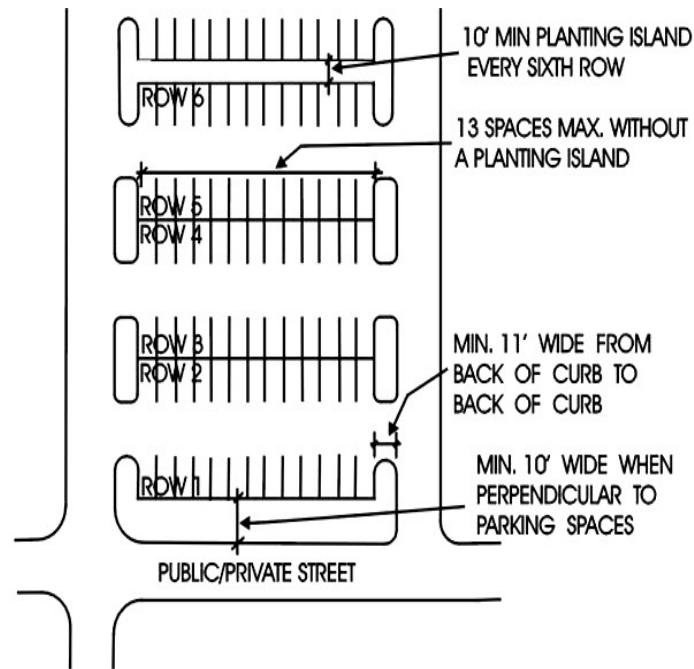
VEHICULAR SURFACE AREA IN SIDE AND REAR YARD - TYPICAL PLANTING

NOTES:

1. PLANTINGS USED FOR SIDE AND REAR YARD MAY ALSO BE CREDITED IN VSA IF INSTALLED WITHIN 10' OF PARKING LOT.
2. ALL PARKING SPACES MUST BE WITHIN 65' OF THE TRUNK OF AN OVERSTORY TREE.

c. Parking lots equal to or greater than 75,000 square feet.

- (1) A planting median is required in parking lots of all new development and qualified expansion of existing development. Parking lots equal to or greater than 75,000 square feet are required to provide a planting island a minimum of ten feet wide after every sixth single parking row.
- (2) The planting median shall contain at a minimum one shade tree for every 65 linear feet. A maximum of 30 percent of the island can be an impervious surface.
- (3) Existing, healthy trees protected in an island may be counted toward this requirement after completion of all construction in the adjacent area.



MEDIAN AND ISLAND REQUIREMENTS FOR PARKING LOTS 75,000 S.F. OR GREATER.

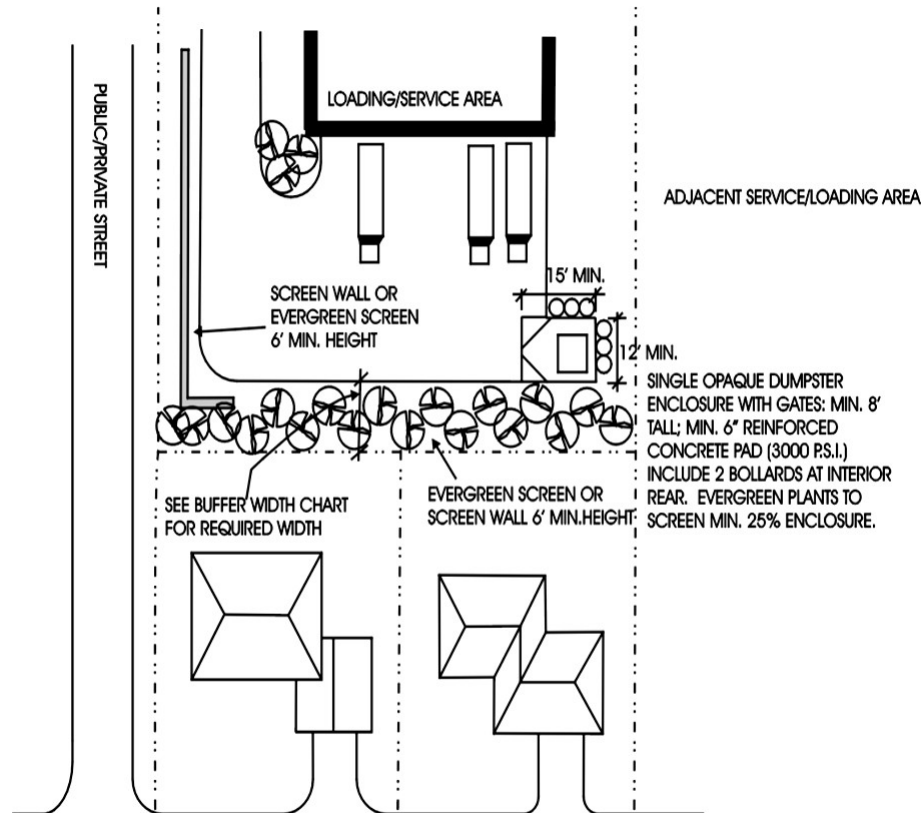
- (4) The installation of every planting island that is a minimum of 306 square feet in area at the end of a single or perimeter row or a minimum of 612 square feet at the end of every double row of interior parking spaces may result in the reduction of one required off-street parking space for a maximum of a 12 percent reduction in required off-street parking spaces.

M. Screening of objectionable views.

1. **Trash container areas.** Trash container areas shall be subject to the following requirements:
 - a. Trash container areas shall be separated at least 50' from residential districts or uses.
 - b. Trash collection areas shall be fully enclosed with a fence or wall to a minimum height of eight feet to block 100 percent of the view into the enclosed area. The enclosure shall match the primary color and material of the building when viewed from public or private right-of-way and/or adjacent residential districts and uses. If the enclosure is not visible from a public or private right-of-way and/or adjacent residential district or use the enclosure panels and gate may be constructed of wood on metal posts/supports. The minimum eight-foot tall gate shall include a self-latching mechanism.
 - c. Plant material shall supplement berms, walls or fences. Planting material shall screen 25 percent of the dumpster wall area. Planting material shall consist of a minimum of six low branching evergreens shrubs a minimum of three feet in height at time of planting.
 - d. Standard dumpster enclosures shall be a minimum of 12 feet across by 12 feet deep for a single dumpster and 24 feet wide for a double dumpster. A six-inch thick reinforced concrete (3,000 psi) pad shall be 12 feet wide by 15 feet deep per container.
2. **Service and loading areas.** Service and loading areas shall be subject to the following screening requirements:
 - a. Provide a minimum 100 percent year-round screen of all loading

and service areas from the adjacent public and private right-of-way, and/or adjacent residential districts and uses.

- b. This screen shall consist of berms, walls, fences, plant material or combination totaling eight feet in height at installation or completion of construction.
- c. Wall or fence materials shall be compatible with the primary structure. Plantings shall be low branching evergreens and a minimum height of five feet at time of installation.
- d. Where a service or loading area is located closer than 25 feet from a property line adjacent to a residential district, the minimum required height of the plantings shall be six feet at time of installation.



SERVICE AND LOADING AREA REQUIREMENTS

- 3. **Stormwater devices.** All detention/retention ponds shall be screened on all sides with evergreen shrubs maintained at a minimum height of four feet. (Note: See also the general fencing requirements)
- 4. **Utility elements.** Utility elements shall be subject to the following requirements:
 - a. All utility devices visible from the public right-of-way or private street shall be screened with low branching evergreen shrubs a minimum of 30 inches tall at installation. Screening material shall be planted a minimum of ten feet from the access doors to provide room for service and utility maintenance activities.
 - b. Property owners shall follow the above requirements concerning utilities located on their property.
 - c. Miscellaneous elements (air conditioning units, storage tanks, non-utility transformers, compactors, and other similar elements) shall be screened entirely from vehicular view from the public right-of-

- way and private streets. Access to elements shall be from a side other than side facing the right-of-way.
- d. All roof-mounted elements shall be 100 percent screened from view from the public right-of-way and/or adjacent properties.
5. **Solar Farms.** In addition to the buffer requirements of Section 7.1K, solar farms shall be screened from view as follows:
- a. Where a solar farm area is visible from a public right-of-way or private street, an evergreen screen of low-branching trees/shrubs shall be provided. All screening material shall be installed adjacent to security fencing surrounding the solar farm area and be a minimum of six (6) feet in height with an expected minimum height at maturity of 10 feet.
 - b. Screening material required by subsection (1) shall be planted on center no more than 10 feet apart.
6. **Screening industrial properties.** Screening in industrial subdivisions shall be subject to the following requirements:
- a. Fencing, walls, hedges, landscaping, berms, natural areas or any combination of the above which is consistent with the requirements of this section shall be provided to obscure uses or portions of a specific use which by their nature have the potential to negatively impact the community and properties outside the subdivision.
 - b. The following specific uses shall be 100 percent screened from adjacent properties outside the subdivision and from view from public rights-of-way:
 - (1) Dumpsters and trash handling areas.
 - (2) Service entrances and utility facilities.
 - (3) Loading docks or spaces.
 - (4) Outdoor storage and any material stocks or equipment, including, but not limited to, motor vehicles, farm or construction equipment, or other similar items.
 - c. No buffer or screening is required in the side or rear yards between parcels with an industrial subdivision. The following standards shall apply where adjacent parcels are not within the industrial subdivision.
 - (1) **Buffer.**
 - (a) A minimum 15-foot evergreen vegetative buffer will be required adjacent to lots not within the subdivision unless buffer table dictates wider buffer requirements.
 - (b) Where lots adjacent to industrial subdivisions are vacant at the time the industrial subdivision receives site permit approval, then the minimum vegetative buffer shall be 15 feet unless the buffer table dictates wider buffer requirements.
 - (2) **Screening.**
 - (a) One hundred percent screening will be required in the 15-foot buffer area.
 - (b) Existing vegetation meeting the standards of this UDO can be used on a one-for-one basis in the areas where it meets the screening requirements.
- N. **Maintenance requirements.**
1. **Owner/agent responsibility.** The owner/agent is responsible for the upkeep of their property with a regular and proper maintenance program. A proper program will reduce disease, insect problems, weed control,

-
- pruning and watering. For further details refer to the Town of Garner Planting Manual in Appendix E for landscape maintenance guidelines.
2. **Slope stabilization.** All disturbed areas shall be stabilized from soil erosion immediately upon planting and shall be permanently maintained. Slopes greater than three to one shall not be stabilized with turf grass and shall require the planting of groundcover to stabilize any disturbed soil.
 3. **Replacement planting.** The owner is responsible for maintaining all required plant material in good health. Any dead, unhealthy or missing plants must be replaced in a manner consistent with the requirements contained in paragraph O., below (for replacement requirements where significant plant material has been lost due to catastrophe or natural causes).
 4. **Re-inspection program.** The owner is responsible for maintaining all required plant material in good health for the duration of the use of the property. Any dead, unhealthy or missing plants must be replaced with locally adapted vegetation, which conforms to the initial planting standards of this UDO and the Town of Garner Planting Manual contained in Appendix E.
 5. **Excessive tree pruning prohibited.** The owner is responsible for following accepted pruning practices for all required plant material and shall avoid excessive pruning of said material. Excessive pruning is defined as: removal of more than 25 percent of the crown or root system; failure to conform to standard pruning practices; or cutting other than for hazard, utility, or maintenance pruning. Illegally pruned trees must be replaced with trees proportional to the size of the tree damaged with the minimum replacement size of three inches caliper in a 200 square foot plant bed required. The applicable penalty provisions of Article 10 shall be applied to excessive pruning violations.
- O. **Loss due to catastrophe.** Should significant amounts of landscaping used to meet the requirements of this section be lost due to unusual causes or catastrophe, the owner of the property shall submit a plan detailing his/her intent in replacing lost material. Replacement planting may occur on a phased basis as approved by the Planning Director. Maximum time allowed in the phasing program is two years from the submittal of plans to the Town.
- P. **Flexibility in administration authorized.** The landscaping and tree protections requirements are established by the Town Council as standards that presumptively result in a better overall appearance of the built environment and protect the natural resources of the community. The Town Council recognizes that due to the particular nature of a tract, the nature of the proposed facilities, or other factors, the objectives of this article may be achieved even though the standards are not adhered to with mathematical precision.
1. The Planning Director shall permit minor deviations of no more than 10 percent from the general landscape standards and up to a 30 percent buffer width reduction.
 2. The BOA may allow greater deviations only for situations where a building or development was constructed prior to the adoption of the UDO and the buffer landscape planting standards or buffer width requirements cannot be met without removing significant portions of an existing building or significantly altering the property.
 3. Any deviation under this section may only be allowed when it is determined that:
 - (a) The objectives underlying these standards can be met without strict adherence to them.
 - (b) Because peculiarities in the developer's tract of land or the facilities

proposed it would be unreasonable to require strict adherence to these standards.

4. Where deviations are authorized, the official record of action taken on the development application shall contain a statement of the reasons for the deviation.

(Ord. No. 3396, § 15, 4-3-06; Ord. No. 3558, § 2, 7-7-09; Ord. No. 3656, § 4, 2-21-12; Ord. No. 3780, §§ 10, 11, 7-7-15; Ord. No. 3881, §§ 5, 6, 9-5-17)

7.2. Stormwater management.

Commentary: The stormwater management provisions apply seven sets of rules, covering the areas of erosion control, stormwater quantity, conservation or protected buffers, nitrogen reduction, water supply, watershed protection, environmentally sensitive watershed protection and floodplain management. Often, more than one element will apply to an individual property. Questions about the application of these provisions should be discussed with the Town Engineer.

A. Application to existing development.

1. Existing structures which become nonconforming with respect to watershed regulation by the adoption of this UDO are not affected unless and until there is a repair or expansion of or reconstruction of such structure.
2. Existing structures which become nonconforming with respect to watershed regulation by the adoption of this UDO may be repaired or reconstructed without a stormwater permit or watershed protection occupancy permit provided that there is no net increase in impervious surface.
3. Existing structures, whether conforming or nonconforming, may be added to or expanded without a stormwater permit or watershed protection occupancy permit provided there is no net increase in impervious surface.
4. In determining whether there is additional impervious surface area, and in determining the best management practices to be utilized in watershed protection in connection with an addition or expansion to an existing structure, the built-upon area of the existing development is to be excluded from any density calculations which are required to be performed.

Commentary: This means, for example, that the owner of an existing lot may build on up to 70 percent of the remaining pervious surface, rather than the 70 percent limitation being applied to the entire lot including pre-existing development.

B. Stormwater Compliance Required

1. Application
Stormwater compliance review materials shall be submitted to the Town Engineer for review and determination of completeness.
2. Issuance
The Town Engineer, the Board of Adjustment sitting as the Watershed Review Board, or in the case of a variance, the Environmental Management Commission.
3. Vested Rights.
See Article 3. All other stormwater compliance(s) shall expire within twelve (12) months of the date of issuance.
4. Watershed Protection Occupancy Permit.
Upon completing construction, the applicant shall report to the Town and request issuance of a watershed protection occupancy permit described.
5. Variances
 - a. In the event of a deviation from the stormwater management standards outlined in this UDO, the variance process described in Article 3.

-
- b. Records shall be submitted to the supervisor of the classification and standards group, water quality section, and Division of Environmental Management on or before January 1st of the following year.
- C. Erosion and sedimentation control.**
- 1. A permit shall be obtained from the Wake County Erosion Control Inspector before a developer undertakes any land disturbing activity that would result in the uncovering of 40,000 square feet or more, and that no such permit may be issued for any development that would uncover 40,000 square feet or more until an erosion and sedimentation control plan is submitted and approved, provided, that this section does not apply to activity under the exclusive jurisdiction of the North Carolina Sedimentation Control Commission.
 - 2. No use permit may be issued or final plat approval be given for any development that would cause land disturbing activity subject to the jurisdiction of Wake County Erosion Control Inspector or the North Carolina Sedimentation Control Commission unless such inspector or agency has certified to the Town that:
 - a. Any permit required by such inspector or agency has been issued or any erosion control plan required by such inspector or agency has been approved; or
 - b. Upon examination of the preliminary plans for the development it appears that any required permit or erosion control plan can be approved upon submission by the developer of more detailed construction or design drawings. However, construction of the development may not begin until such inspector or agency issues any required permit or approves any required erosion control plan.
- D. Stormwater quantity.**
- 1. **Stormwater management; relation to adjacent properties.** No development shall unreasonably burden adjacent properties with surface waters as a result of such development, including specifically the following:
 - a. No development may be constructed or maintained so that such development unreasonably impedes the natural flow of water from higher to lower properties, thereby causing substantial damage to such higher properties; and
 - b. No development may be constructed or maintained so that surface waters from such development are unreasonably collected or diverted onto lower properties, thereby causing substantial damage to lower properties.
 - 2. **Stormwater runoff design standards.**
 - a. To the extent practicable, all development shall conform to the natural contours and drainage patterns (watersheds) of the land, and retain existing patterns of flow;
 - b. To the extent practicable, lot boundaries shall be made to coincide with natural drainage ways within subdivisions to avoid the creation of lots that can be built upon only by altering such natural drainage ways;
 - c. All developments shall have a drainage system adequate to prevent the undue retention of surface water on the development site. Surface water shall not be regarded as unduly retained if:
 - (1) The retention results from a deliberate approved sedimentation or storm water run-off control plan.
 - (2) The retention is not substantially different in location or degree than in the site's pre-development stage, unless

such retention presents a danger to health or safety.

- d. No surface water may be channeled or directed into a sanitary sewer;
 - e. Whenever practicable, drainage systems shall coordinate with and connect to drainage systems or drainage ways on surrounding properties or streets; and
 - f. Drainage swales in subdivisions are provided for in Article 8, Streets. Private roads and access ways within unsubdivided developments shall utilize curb and gutter and storm drains to provide adequate drainage if the grade of such roads or access ways is too steep to provide drainage in another manner or if other sufficient reasons exist to require such construction.
3. **Evaluation of detention needs.** Applicants for development approval shall evaluate detention needs for the development as follows:
- a. Except in certain situations, stormwater detention will be required on new development. The design standard for detention will be based upon peak flow reduction to predevelopment (existing) conditions for the 1-, 10-, 25-, and in some cases, the 100-year return frequency storm events.
 - b. Detention requirements may be reduced or eliminated by the Town Engineer upon a showing that installation of reduced or eliminated detention facilities will not create adverse downstream impacts.
4. **Stormwater control structure requirements.**
- a. All stormwater control structures and any modifications thereto, shall be designed and sealed by a North Carolina registered professional engineer, except such a structure may be designed by a registered land surveyor, where the runoff consists solely incidental drainage within a subdivision, as provided in G.S. § 89(c)-3(7); and
 - b. All water quality controls shall use retention ponds, bioretention areas or other approved devices, as a primary treatment system. All approved devices shall be designed for specific pollutant removal according to modeling techniques approved by the North Carolina Division of Environmental Management. Specific requirements for these systems shall be in accordance with the North Carolina Division of Environmental Management design criteria or otherwise as approved by the Town Engineer.
 - c. All water quantity controls shall use detention ponds, bioretention areas or other devices or systems as approved by the Town Engineer. Detention facilities shall be designed using the design procedures set forth in Elements of Urban Stormwater Design, Malcolm, or other design procedures as approved by the Town Engineer.
 - d. A maintenance and operations plan, acceptable to the Town Engineer, shall be developed for each water quantity and water quality control structure proposed as part of the development.
5. **Maintenance of retention facilities and private streets.**
- a. All water quality controls and devices which are installed solely to provide 85 percent total suspended solid (TSS) removal in order to satisfy the water supply watershed protection section of the UDO shall be maintained by the Town of Garner. Such maintenance by the Town will be limited to the water quality treatment function of the stormwater control system. Maintenance activities not related to

water quality such as aesthetics, nuisance control, etc. will not be the responsibility of the Town but shall be the responsibility of the owner. The developer shall deed, dedicate or grant sufficient easement or right-of-way to allow for the access and maintenance of the water quality control system.

- b. All water quality controls and devices which are installed to meet the nitrogen reduction requirements of this UDO shall maintained by the property owner or the person or persons responsible for the maintenance of the property. In the case of residential or commercial subdivisions, a home owners association or merchants association shall be established in order to identify the person or persons responsible for the maintenance of the property. The developer shall deed, dedicate, or grant sufficient easement or right-of-way to for the access and inspection of the water quality control system.
- c. All water quantity controls and devices shall maintained by the property owner or the person or persons responsible for the maintenance of the property. In the case of residential or commercial subdivisions, a home owners association or merchants association shall be established in order to identify the person or persons responsible for the maintenance of the property. The developer shall deed, dedicate, or grant sufficient easement or right-of-way to for the access and inspection of the water quality control system.

E. Watershed Conservation Buffer Areas.

1. Areas defined.

- a. The development on lots abutting or including Lake Benson or any of the streams identified in this section shall be limited by an adjacent buffer area.
- b. This section shall apply to the following streams and lakes, including all branches of the identified streams to the limit of the intermittent and perennial streams as defined by the Neuse River Riparian Buffer rule, and if a future extraterritorial expansion includes any stream having a designated 100-year floodplain, such stream shall automatically be included as if listed below:

Stream Name	
Adams Branch	Mahler's Creek
Bagwell Branch	Reedy Branch
Big Branch #1	Reedy Creek Tributary
Big Branch #2, Mill Creek	Swift Creek
Big Branch Tributary	Walnut Creek
Buck Branch	White Oak Creek (see c. below)
Echo Creek	Yates Branch
Hilliard Creek	

- c. The Watershed Conservation Buffer Area requirements for nonresidential development shall not apply for property located adjacent to White Oak Creek. This exemption shall not apply to residential development to adjacent to White Oak Creek. In such cases where residential development adjoins White Oak Creek, a Watershed Conservation Buffer Area shall be required according to

the provisions of this section.

2. Limitations on development in Conservation Buffer Areas.

a. Development is prohibited in both the floodplain and the Watershed Conservation Buffer Areas for streams described in paragraph 1., above.

(1) Development within and adjacent to the Watershed Conservation Buffer Areas shall be subject to the following criteria:

(2) Buffer width: Along the lakefront or streams within 5,000 feet of the Lake Benson shoreline, the buffer area shall include the 100-year floodplain plus an area whose width is proportional to its distance from Lake Benson, beyond the edge of the floodplain and parallel to the stream, as follows:

Distance from Lake Benson	Buffer
Lakefront and within 1,000 feet of lakefront	100 feet
100 to 2,000 feet from lake	90 feet
2,001 to 3,000 feet from lake	80 feet
3,001 to 4,000 feet from lake	70 feet
4,001 to 5,000 feet from lake	60 feet

(3) Along other identified streams and along streams beyond 5,000 feet from the lakefront, the buffer area shall include the 100-year floodplain plus a 50-foot wide area beyond the edge of the floodplain and parallel to the stream; and

(4) If no floodplain exists on the portion of a stream in question, the buffer shall be considered to be the calculated 100-year storm high water mark based upon a built-out condition upstream.

(5) Application of a conservation buffer shall not diminish other riparian buffer requirements.

b. Buffers from which the vegetation cover has been removed shall be provided with ground cover. Crossings by streets, bridges, utilities or other facilities shall be kept at a minimum and their negative impact minimized.

c. Residential accessory buildings, on lots of record prior to March 1984, may encroach into designated conservation buffers provided that:

(1) Such buildings not exceed 25 percent of the area of the principal building served; and

(2) Such accessory building shall not be located in any designated floodway.

d. Placement of an accessory building in a flood fringe area shall meet all applicable construction requirements; and the area of the lot covered by impervious surfaces, including the accessory building, shall not exceed 25 percent.

e. Buffers shall be protected by easements and shall remain, where possible, in private ownership.

3. Land disturbance limits in Conservation Buffer Areas.

a. No land-disturbing activities (including agricultural uses) are permitted within the Conservation Buffer Areas, except for the following uses:

-
- (1) Street and associated facilities;
 - (2) Greenways and pedestrian paths; and
 - (3) Utility mains, pump stations and drainage facilities which comply with Town of Garner standards.
- b. Community service facilities, educational facilities, government facilities, parks and open space uses or public or private water dependent structures (functionally dependent facilities) may encroach into conservation buffer areas provided that:
- (1) The area of encroachment does not exceed ten percent of the total buffer area on the project site and a minimum of 40 feet of the buffer width remains undisturbed;
 - (2) The area of encroachment is the minimum amount necessary in order to reasonably use the property;
 - (3) No direct discharge of stormwater into the buffer from rooftops is allowed;
 - (4) No vehicular parking/loading areas or driveways are allowed within the buffer;
 - (5) The elevation of all finished floors of all structures located within the buffer shall be a minimum of two feet above the base flood elevation; and
 - (6) No encroachment into the floodplain or floodway shall be allowed except for water dependent structures and then only in accordance with the requirements and restrictions contained within Subsection 7.2.H. of this article.
- c. Within areas of the Lake Benson Conservation District not constituting the Conservation Buffer Areas, site disturbance on existing lots of record as of March 1984, except for agricultural use, including the cutting of trees, shall be permitted only pursuant to a removal plan approved by the Planning Director and the cutting of trees shall not exceed five times the actual impervious surface area planned for each site.
- d. Throughout the Lake Benson Conservation District and Conservation Buffer Areas, strict compliance with the Wake County Erosion and Sedimentation Control Ordinance is required. No construction is allowed in classes of soils which have severe erosion potential, or are classified as being otherwise unsuitable for urban uses, under the Urban Suitability Soil Groups in the Planning Guide to the Wake County Soil Survey (1970), unless the developer can provide either of the following:
- (1) An independent (sealed) engineering study which documents that the soils to be developed are not in the stated erosion categories, or
 - (2) Erosion prevention control measures that satisfy the Wake County Erosion and Sedimentation Control Ordinance.

F. Nitrogen reduction.

1. **Stormwater requirements for nitrogen control.** All new development shall meet the requirements of the "The Town of Garner Stormwater Program for Nitrogen Control." The major requirements that must be met by new development, as contained in the stormwater program, are as follows:
 - a. New development shall comply with the requirements for protecting and maintaining riparian buffers as specified in the Riparian Buffer Rule 15A NCAC 2B.0233.
 - b. As required by the Neuse Stormwater Rule 15A NCAC 2B.0235 the

nutrient load contributed by new development activities is limited to 3.6 pounds per acre per year (lbs/ac/yr) of nitrogen loading. Development shall have the option of partially offsetting projected nitrogen loads by funding wetland or riparian area restoration through the North Carolina Wetland Restoration Program. However, the total nitrogen loading rate cannot exceed 6.0 lbs/ac/yr for residential development or 10.0 lbs/ac/yr for nonresidential development. Best management practices (bmps) provided for in the stormwater program must be used to reduce nitrogen loading to the 6.0 and 10.0 limits and may be used to reduce nitrogen loading to the 3.6 limit. Maintenance of any bmps installed will be the responsibility of the development.

- c. Except in certain situations, stormwater detention will be required on new development. The design standard for detention will be based upon peak flow reduction to predevelopment (existing) conditions for the 1-, 10-, 25-, and in some cases, the 100-year return frequency storm events.

G. **Water supply watershed protection.** The water supply watershed protection areas described below are identified on the Town of Garner Watershed Protection Map.

1. **Water supply watershed protection areas.**

- a. **Swift Creek Watershed Protection Area.** The Town of Garner Swift Creek-Lake Benson public water supply watershed protection area (also variously known as the Swift Creek Watershed, Lake Benson Watershed, or Watershed Protection Area) is that portion of the land area within the present Town of Garner zoning jurisdiction designated on the Town of Garner Watershed Protection Map.
- b. **Lake Benson Conservation District.** This district constitutes what the state refers to as the critical area north of Lake Benson. Additional information is included in the zoning overlay district in Article 4.
- c. **Conditional zoning districts.** Conditional zoning district SB-C22 and conditional zoning district R-12-C53 and R1 2PR-C54. These constitute the portion of the Swift Creek critical area west of Lake Benson which is within the Town zoning limits.

2. **Exemptions.** The water supply watershed protection ordinances of the Town of Garner shall apply to the above-described land area, except, however that the watershed protection ordinances shall not apply to:

- a. Existing development, although they shall apply to future additions, expansion, repair, or reconstruction of existing development which are of such nature to create additional impervious surface; or
- b. To the development of a single existing lot for single-family residential purposes; although they shall apply to single-family residential development of multiple contiguous lots with common ownership.

3. **Impervious surface limits.**

- a. **Swift Creek Watershed Protection Area.** Within the Garner Swift Creek Watershed, impervious limits may not exceed 12 percent of land area, per lot, except that impervious limits may be a maximum of 70 percent, known as the high density option, where the stormwater runoff from a one inch rainfall event is retained by retention ponds, or other approved devices designed to achieve 85 percent total suspended solids as approved by the North

Carolina Division of Environmental Management and the Town of Garner, constructed in accordance with best management practices.

- b. **Lake Benson Conservation District.** Within that part of the Swift Creek Watershed Protection Area designated as the Lake Benson Conservation District, the impervious surface may not exceed six percent of land area per lot, except where runoff as described above is retained by retention ponds or other approved devices constructed pursuant to best management practices in which case it may not exceed, but may be a maximum of 35 percent. Performance standards are illustrated in the table captioned Lake Benson/Swift Creek Watershed Performance Standards.
- c. **Conditional districts.** Within that area subject to CUD SB-C- 22 or CUD R-L PR-C29, the impervious surface limits set therein, of 12 percent to 30 percent with retention ponds, or other approved devices, retaining the runoff as described and constructed pursuant to the best management practices in the area previously classified by the Swift Creek Land Management Plan as suburban new and 12 percent to 70 percent with retention ponds, or other approved devices, retaining the runoff as described above and constructed pursuant to the best management practices in the area classified in the Swift Creek Land Management Plan as urban new, shall apply pursuant to those Ordinances No. (1988) 2293 and (1989) 2370.
- d. **Watershed performance standards.** Watershed performance standards are contained in the table below.

Area	Maximum Impervious Surface			Maximum Residential Density
	Low Density Option	High Density Option*		
		Residential	Non-residential	
Swift Creek Watershed (except areas listed below)	12 percent	70 percent	70 percent	Controlled by underlying zoning
Lake Benson Conservation District (Critical Area)	6 percent	35 percent	35 percent	2.5 DU/Acre
Conditional District SB- C22 and R-12 PR-C29	12 percent	30 percent	70 percent	2.0 DU/Acre
Conservation Buffer Areas	See Section 4.8			

***Note: High density option requires construction of on-site retention ponds designed to retain runoff from a one-inch rainfall event or other approved devices.**

- e. **Front yards.** Impervious surface shall occupy no more than 40 percent of the required front yard.

H. Swift Creek Conservation District.

1. **Location.** This district constitutes an environmentally sensitive area located in the Swift Creek Watershed below Lake Benson as illustrated on the Town of Garner Official Zoning Map. Additional information is provided in Article 4 regarding zoning overlay districts.
 2. **Use regulations.** The uses permitted or prohibited in the Swift Creek Conservation District shall be those uses permitted or prohibited in the underlying zoning district that apply to a particular parcel of land.
 3. **Exempt from regulations.** All parcels of land that fall within the boundaries of the Swift Creek Conservation District which are identified on the Town of Garner Official Zoning Map as being exempt properties, shall not be subject to provisions of this overlay district.
 4. **Existing development, redevelopment, and expansions.** Existing development (residential or non-residential) is not subject to the requirements of this section; existing development shall be considered to be existing any impervious surfaces, or for which plan or permit approval has been officially granted; or where a vested right has been established, as of May 31, 2005. Redevelopment or expansion of any existing non-residential development shall be subject to the requirements of this section; however, the impervious surface coverage of the existing development is not required to be included when applying the impervious surface coverage limits of this section.
 5. **Development standards.** The following standards shall apply for new residential and non-residential development in Swift Creek Conservation District:
 - (1) The standards of both the Swift Creek Conservation District and the underlying zoning district shall apply to each parcel. Where the standards of the Overlay District and the underlying district differ, the more restrictive standards shall control development in new projects created after effective date of the Swift Creek Conservation District which is May 31, 2005.
 - (2) The maximum impervious surface coverage of the new residential development projects and new non-residential development projects, which are defined as those projects approved or permitted after the effective date of the Swift Creek Conservation District are as follows:
 - a. New single family detached residential subdivision development projects shall be limited to a maximum of 30 percent total impervious surface area.
 - b. New multi-family residential development projects defined to include townhomes, condominiums, or apartments shall be limited to a maximum of 50 percent total impervious surface area.
 - c. New non-residential development projects shall be limited to a maximum of 70 percent of total of impervious surface area.
 6. **Lake Benson and buffer area development standards.** All building footprints and front, rear, and side yard areas as required by this UDO shall be provided outside of conservation buffers protecting the watershed of Lake Benson or other officially designated protected buffer areas. Rear yard areas adjacent to a conservation buffer shall be reduced to a minimum of fifteen feet during the review of a subdivision. However, no reduction, waiver, or variance below this fifteen-foot minimum shall be permitted.
- I. **Floodplain management.**
Commentary: The stormwater management provisions apply seven sets of

rules, covering the areas of erosion control, stormwater quantity, conservation or protected buffers, nitrogen reduction, water supply watershed protection, environmentally sensitive watershed protection and floodplain management. The Town of Garner adopted floodplain regulations to be consistent with federal and state requirements. However, Town regulations specifically prohibit development in the 100-year floodplain and in conservation or protected buffers areas except as noted in Section 7.2.D.1(c).

Often, more than one element of the stormwater provisions will apply to an individual property. Questions about the application of these provisions should be discussed with the Town Engineer.

1. Statutory authorization, findings of fact, purpose and objectives.

A. Statutory authorization. The Legislature of the State of North Carolina has delegated to local governmental the responsibility units to adopt regulations designed to promote the public health, safety, and general welfare of its citizenry. Therefore, the Town Council of the Town of Garner North Carolina, does ordain the following findings of fact:

- (1) The flood prone areas within the jurisdiction of Town of Garner are subject to periodic inundation which results in loss of life, property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures of flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety, and general welfare.
- (2) These flood losses are caused by the cumulative effect of obstructions in floodplains causing increases in flood heights and velocities and by the occupancy in flood prone areas of uses vulnerable to floods or other hazards.

B. Statement of purpose. It is the purpose of this ordinance to promote public health, safety, and general welfare and to minimize public and private losses due to flood conditions within flood prone areas by provisions designed to:

- (1) Restrict or prohibit uses that are dangerous to health, safety, and property due to water or erosion hazards or that result in damaging increases in erosion, flood heights or velocities;
- (2) Require that uses vulnerable to floods, including facilities that serve such uses, be protected against flood damage at the time of initial construction;
- (3) Control the alteration of natural floodplains; stream channels, and natural protective barriers, which are involved in the accommodation of floodwaters;
- (4) Control filling, grading, dredging, and all other development that may increase erosion or flood damage; and
- (5) Prevent or regulate the construction of flood barriers that will unnaturally divert flood waters or which may increase flood hazards to other lands.

C. Objectives. The objectives of this ordinance are:

- (1) To protect human life and health;
- (2) To minimize expenditure of public money for costly flood control projects;
- (3) To minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;

- (4) To minimize prolonged business losses and interruptions;
- (5) To minimize damage to public facilities and utilities (i.e. water and gas mains, electric, telephone, cable and sewer lines, streets, and bridges) that are located in flood prone areas;
- (6) To help maintain a stable tax base by providing for the sound use and development of flood prone areas; and
- (7) To ensure that potential buyers are aware that property is in a special flood hazard area.

2. **Definitions.** Unless specifically defined below, words or phrases used in this ordinance shall be interpreted so as to give them the meaning they have in common usage and to give this ordinance its most reasonable application. The definitions listed below apply to Section 7.2H only.

"Accessory structure (appurtenant structure)" means a structure located on the same parcel of property as the principal structure and the use of which is incidental to the use of the principal structure. Garages, carports and storage sheds are common urban accessory structures. Pole barns, hay sheds and the like qualify as accessory structures on farms, and may or may not be located on the same parcel as the farm dwelling or shop building.

"Addition (to an existing building)" means an extension or increase in the floor area or height of a building or structure.

"Appeal" means a request for a review of the floodplain administrator's interpretation of any provision of this ordinance.

"Area of shallow flooding" means a designated Zone AO on a community's flood insurance rate map (FIRM) with base flood depths determined to be from one to three feet. These areas are located where a clearly defined channel does not exist, where the path of flooding is unpredictable and indeterminate, and where velocity flow may be evident.

"Area of special flood hazard" see "Special flood hazard area (SFHA)".

"Basement" means any area of the building having its floor subgrade (below ground level) on all sides.

"Base flood" means the flood having a one percent chance of being equaled or exceeded in any given year.

"Base flood elevation (BFE)" means a determination of the water surface elevations of the base flood as published in the flood insurance study. When the BFE has not been provided in a "special flood hazard area", it may be obtained from engineering studies available from federal or state or other source using FEMA approved engineering methodologies. This elevation, when combined with the "freeboard", establishes the "regulatory flood protection elevation".

"Building" see "Structure".

"Chemical storage facility" means a building, portion of a building, or exterior area adjacent to a building used for the storage of any chemical or chemically reactive products.

"Development" means any man-made change to improved or unimproved real estate, including, but not limited to, buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations, or storage of equipment or materials.

"Disposal" means, as defined in NCGS 130A-290(a)(6), the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste into or on any land or water so that the solid waste or any constituent part of the solid waste may enter the environment or be emitted into the air or discharged into any waters, including groundwaters.

"Elevated building" means a non-basement building which has its lowest elevated floor raised above ground level by foundation walls, shear walls, posts, piers, pilings, or columns.

"Encroachment" means the advance or infringement of uses, fill, excavation, buildings, permanent structures or development into a floodplain, which may impede or alter the flow capacity of a floodplain.

"Existing manufactured home park or manufactured home subdivision" means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including, at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) was completed before the original effective date of the floodplain management regulations adopted by the community.

"Flood" or *"flooding"* means a general and temporary condition of partial or complete inundation of normally dry land areas from:

- (1) The overflow of inland or tidal waters; and/or
- (2) The unusual and rapid accumulation of runoff of surface waters from any source.

"Flood boundary and floodway map (FBFM)" means an official map of a community, issued by the federal emergency management agency, on which the special flood hazard areas and the floodways are delineated. This official map is a supplement to and shall be used in conjunction with the flood insurance rate map (FIRM).

"Flood hazard boundary map (FHBM)" means an official map of a community, issued by the federal emergency management agency, where the boundaries of the special flood hazard areas have been defined as Zone A.

"Flood insurance" means the insurance coverage provided under the National Flood Insurance Program.

"Flood insurance rate map (FIRM)" means an official map of a community, issued by the federal emergency management agency, on which both the special flood hazard areas and the risk premium zones applicable to the community are delineated.

"Flood insurance study (FIS)" means an examination, evaluation, and determination of flood hazards, corresponding water surface elevations (if appropriate), flood hazard risk zones, and other flood data in a community issued by the federal emergency management agency. The flood insurance study report includes flood insurance rate maps (FIRMs) and flood boundary and floodway maps (FBFMs), if published.

"Flood prone area" see "Floodplain".

"Floodplain" means any land area susceptible to being inundated by water from any source.

"Floodplain administrator" is the individual appointed to administer and enforce the floodplain management regulations.

"Floodplain development permit" means any type of permit that is required in conformance with the provisions of this ordinance, prior to the commencement of any development activity.

"Floodplain management" means the operation of an overall program of corrective and preventive measures for reducing flood damage and preserving and enhancing, where possible, natural resources in the floodplain, including, but not limited to, emergency preparedness plans, flood control works, floodplain management regulations, and open space plans.

"Floodplain management regulations" means this ordinance and other

zoning ordinances, subdivision regulations, building codes, health regulations, special purpose ordinances, and other applications of police power which control development in flood-prone areas. This term describes federal, state or local regulations, in any combination thereof, which provide standards for preventing and reducing flood loss and damage.

"Floodproofing" means any combination of structural and nonstructural additions, changes, or adjustments to structures, which reduce or eliminate flood damage to real estate or improved real property, water and sanitation facilities, structures, and their contents.

"Floodway" means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one foot.

"Flood zone" means a geographical area shown on a flood hazard boundary map or flood insurance rate map that reflects the severity or type of flooding in the area.

"Freeboard" means the height added to the base flood elevation (BFE) to account for the many unknown factors that could contribute to flood heights greater than the height calculated for a selected size flood and floodway conditions, such as wave action, bridge openings, and the hydrological effect of urbanization on the watershed. The base flood elevation plus the freeboard establishes the "regulatory flood protection elevation".

"Functionally dependent facility" means a facility which cannot be used for its intended purpose unless it is located in close proximity to water, such as a docking or port facility necessary for the loading and unloading of cargo or passengers, shipbuilding, or ship repair. The term does not include long-term storage, manufacture, sales, or service facilities.

"Hazardous waste facility" means, as defined in NCGS 130A, Article 9, a facility for the collection, storage, processing, treatment, recycling, recovery, or disposal of hazardous waste.

"Highest adjacent grade (HAG)" means the highest natural elevation of the ground surface, prior to construction, immediately next to the proposed walls of the structure.

"Historic structure" means any structure that is:

- (a) Listed individually in the National Register of Historic Places (a listing maintained by the U.S. Department of Interior) or preliminarily determined by the Secretary of Interior as meeting the requirements for individual listing on the National Register;
- (b) Certified or preliminarily determined by the Secretary of Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district;
- (c) Individually listed on a local inventory of historic landmarks in communities with a "Certified Local Government (CLG) Program"; or
- (d) Certified as contributing to the historical significance of a historic district designated by a community with a "Certified Local Government (CLG) Program".

Certified Local Government (CLG) Programs are approved by the U.S. Department of the Interior in cooperation with the North Carolina Department of Cultural Resources through the State Historic Preservation Officer as having met the requirements of the National Historic Preservation

Act of 1966 as amended in 1980.

"Lowest adjacent grade (LAG)" means the elevation of the ground, sidewalk or patio slab immediately next to the building, or deck support, after completion of the building.

"Lowest floor" means lowest floor of the lowest enclosed area (including basement). An unfinished or flood resistant enclosure, usable solely for parking of vehicles, building access, or limited storage in an area other than a basement area is not considered a building's lowest floor, provided that such an enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirements of this ordinance.

"Manufactured home" means a structure, transportable in one or more sections, which is built on a permanent chassis and designed to be used with or without a permanent foundation when connected to the required utilities. The term "manufactured home" does not include a "recreational vehicle".

"Manufactured home park or subdivision" means a parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.

"Market value" means the building value, not including the land value and that of any accessory structures or other improvements on the lot. Market value may be established by independent certified appraisal; replacement cost depreciated for age of building and quality of construction (actual cash value); or adjusted tax assessed values.

"Mean sea level" means, for purposes of this ordinance, the National Geodetic Vertical Datum (NGVD) as corrected in 1929, the North American Vertical Datum (NAVD) as corrected in 1988, or other vertical control datum used as a reference for establishing varying elevations within the floodplain, to which base flood elevations (BFEs) shown on a FIRM are referenced. Refer to each FIRM panel to determine datum used.

"New construction" means structures for which the "start of construction" commenced on or after the effective date of the original version of the community's flood damage prevention ordinance and includes any subsequent improvements to such structures.

"Non-encroachment area" means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one foot as designated in the flood insurance study report.

"Post-FIRM" means construction or other development for which the "start of construction" occurred on or after the effective date of the initial flood insurance rate map for the area.

"Pre-FIRM" means construction or other development for which the "start of construction" occurred before the effective date of the initial flood insurance rate map for the area.

"Principally above ground" means that at least 51 percent of the actual cash value of the structure is above ground.

"Public safety" and/or *"nuisance"* means anything which is injurious to the safety or health of an entire community or neighborhood, or any considerable number of persons, or unlawfully obstructs the free passage or use, in the customary manner, of any navigable lake, or river, bay, stream, canal, or basin.

"Recreational vehicle (RV)" means a vehicle, which is:

- (a) Built on a single chassis;
- (b) Four hundred square feet or less when measured at the

- largest horizontal projection;
- (c) Designed to be self-propelled or permanently towable by a light duty truck; and
 - (d) Designed primarily not for use as a permanent dwelling, but as temporary living quarters for recreational, camping, travel, or seasonal use.

"Reference level" is the top of the lowest floor for structures within special flood hazard areas designated as Zone A1--A30, AE, A, A99 or AO. (Alternative acceptable language for reference level) *"Reference level"* is the bottom of the lowest horizontal structural member of the lowest floor, excluding the foundation system, for structures within all special flood hazard areas.

"Regulatory flood protection elevation" means the "base flood elevation" plus the "freeboard". In "special flood hazard areas" where base flood elevations (BFEs) have been determined, this elevation shall be the BFE plus two feet of freeboard. In "special flood hazard areas" where no BFE has been established, this elevation shall be at least two feet above the highest adjacent grade.

"Remedy a violation" means to bring the structure or other development into compliance with state and community floodplain management regulations, or, if this is not possible, to reduce the impacts of its noncompliance. Ways that impacts may be reduced include protecting the structure or other affected development from flood damages, implementing the enforcement provisions of the ordinance or otherwise deterring future similar violations, or reducing federal financial exposure with regard to the structure or other development.

"Riverine" means relating to, formed by, or resembling a river (including tributaries), stream, brook, etc.

"Salvage yard" means any non-residential property used for the storage, collection, and/or recycling of any type of equipment, and including but not limited to vehicles, appliances and related machinery.

"Solid waste disposal facility" means, as defined in NCGS 130A-290(a)(35), any facility involved in the disposal of solid waste.

"Solid waste disposal site" means, as defined in NCGS 130A-290(a)(36), any place at which solid wastes are disposed of by incineration, sanitary landfill, or any other method.

"Special flood hazard area (SFHA)" means the land in the floodplain subject to a one percent or greater chance of being flooded in any given year, as determined in Section 7.2H(3)b of this ordinance.

"Start of construction" includes substantial improvement, and means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, rehabilitation, addition placement, or other improvement was within 180 days of the permit date. The actual start means either the first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation; or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading, and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footings, piers, or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure. For a substantial improvement, the actual start of construction means the first alteration of any wall, ceiling, floor, or other structural part of the building,

whether or not that alteration affects the external dimensions of the building.

"Structure" means a walled and roofed building, a manufactured home, or a gas, liquid, or liquefied gas storage tank that is principally above ground.

"Substantial damage" means damage of any origin sustained by a structure during any one-year period whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred. See definition of "substantial improvement". Substantial damage also means flood-related damage sustained by a structure on two separate occasions during a 10-year period for which the cost of repairs at the time of each such flood event, on the average, equals or exceeds 25 percent of the market value of the structure before the damage occurred. (The last sentence is OPTIONAL but required for eligibility for increased cost of compliance (ICC) benefits for repetitive losses.)

"Substantial improvement" means any combination of repairs, reconstruction, rehabilitation, addition, or other improvement of a structure, taking place during any one-year period for which the cost equals or exceeds 50 percent of the market value of the structure before the "start of construction" of the improvement. This term includes structures which have incurred "substantial damage", regardless of the actual repair work performed. The term does not, however, include either:

- (a) Any correction of existing violations of state or community health, sanitary, or safety code specifications which have been identified by the community code enforcement official and which are the minimum necessary to assure safe living conditions; or,
- (b) Any alteration of a historic structure, provided that the alteration will not preclude the structure's continued designation as a historic structure.

"Variance" is a grant of relief from the requirements of this ordinance.

"Violation" means the failure of a structure or other development to be fully compliant with the community's floodplain management regulations. A structure or other development without the elevation certificate, other certifications, or other evidence of compliance required in Sections 7.2H(3) and 7.2H(4) are presumed to be in violation until such time as that documentation is provided.

"Water surface elevation (WSE)" means the height, in relation to mean sea level, of floods of various magnitudes and frequencies in the floodplains of coastal or riverine areas.

"Watercourse" means a lake, river, creek, stream, wash, channel or other topographic feature on or over which waters flow at least periodically. Watercourse includes specifically designated areas in which substantial flood damage may occur.

3. **General provisions.**

- a. **Lands to which this ordinance applies.** This ordinance shall apply to all special flood hazard areas within the jurisdiction, including extra-territorial jurisdictions (ETJs) if applicable, of Town of Garner and within the jurisdiction of any other community whose governing body agrees, by resolution, to such applicability.
- b. **Basis for establishing the special flood hazard areas.** The special flood hazard areas are those identified under the cooperating technical state (CTS) agreement between the State of North Carolina and FEMA in its Flood Insurance Study (FIS) and its

accompanying flood insurance rate maps (FIRM), for Wake County dated May 2, 2006, which are adopted by reference and declared to be a part of this ordinance.

- c. **Establishment of floodplain development permit.** A floodplain development permit shall be required in conformance with the provisions of this ordinance prior to the commencement of any development activities within special flood hazard areas determined in accordance with Section 7.2(4)c of this ordinance.
 - d. **Compliance.** No structure or land shall hereafter be located, extended, converted, altered, or developed in any way without full compliance with the terms of this ordinance and other applicable regulations.
 - e. **Abrogation and greater restrictions.** This ordinance is not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this ordinance and another conflict or overlap, whichever imposes the more stringent restrictions shall prevail.
 - f. **Interpretation.** In the interpretation and application of this ordinance, all provisions shall be:
 - (1) Considered as minimum requirements;
 - (2) Liberally construed in favor of the governing body; and
 - (3) Deemed neither to limit nor repeal any other powers granted under state statutes.
 - g. **Warning and disclaimer of liability.** The degree of flood protection required by this ordinance is considered reasonable for regulatory purposes and is based on scientific and engineering consideration. Larger floods can and will occur. Actual flood heights may be increased by man-made or natural causes. This ordinance does not imply that land outside the special flood hazard areas or uses permitted within such areas will be free from flooding or flood damages. This ordinance shall not create liability on the part of Town of Garner or by any officer or employee thereof for any flood damages that result from reliance on this ordinance or any administrative decision lawfully made hereunder.
 - h. **Penalties for violation.** Violation of the provisions of this ordinance or failure to comply with any of its requirements, including violation of conditions and safeguards established in connection with grants of variance or special exceptions, shall constitute a misdemeanor. Any person who violates this ordinance or fails to comply with any of its requirements shall, upon conviction thereof, be fined not more than \$50.00 or imprisoned for not more than 30 days, or both. Each day such violation continues shall be considered a separate offense. Nothing herein contained shall prevent Town of Garner from taking such other lawful action as is necessary to prevent or remedy any violation.
4. **Administration.**
- a. **Designation of Floodplain Administrator.** The Town Engineer, hereinafter referred to as the "Floodplain Administrator", is hereby appointed to administer and implement the provisions of this ordinance.
 - b. **Floodplain development application requirements.**
 . Application for a floodplain development permit shall be made to the floodplain administrator prior to any development activities located within special flood hazard areas. The following items shall

be presented to the floodplain administrator to apply for a floodplain development permit:

- (1) A plot plan drawn to scale which shall include, but shall not be limited to, the following specific details of the proposed floodplain development:
 - (a) The nature, location, dimensions, and elevations of the area of development/disturbance; existing and proposed structures, utility systems, grading/pavement areas, fill materials, storage areas, drainage facilities, and other development;
 - (b) The boundary of the special flood hazard area as delineated on the FIRM or other flood map as determined in Section 7.2H(3)b or a statement that the entire lot is within the special flood hazard area;
 - (c) Flood zone(s) designation of the proposed development area as determined on the FIRM or other flood map as determined in Section 7.2H(3)b the boundary of the floodway(s) or non-encroachment area(s) as determined in Section 7.2H(3)b;
 - (d) The base flood elevation (BFE) where provided as set forth in Section 7.2H(3)b; 7.2H(4)e(11 and 12) or 7.2H(5)d;
 - (e) The old and new location of any watercourse that will be altered or relocated as a result of proposed development;
 - (f) Certification of the plot plan by a registered land surveyor or professional engineer.
- (2) Proposed elevation, and method thereof, of all development within a special flood hazard area including but not limited to:
 - (a) Elevation in relation to mean sea level of the proposed reference level (including basement) of all structures;
 - (b) Elevation in relation to mean sea level to which any non-residential structure in Zone AE, A or AO will be flood-proofed; and
 - (c) Elevation in relation to mean sea level to which any proposed utility systems will be elevated or floodproofed;
- (3) If floodproofing, a floodproofing certificate (FEMA Form 81-65) with supporting data and an operational plan that includes, but is not limited to, installation, exercise, and maintenance of floodproofing measures.
- (4) A foundation plan, drawn to scale, which shall include details of the proposed foundation system to ensure all provisions of this ordinance are met. These details include but are not limited to:
 - (a) The proposed method of elevation, if applicable (i.e., fill, solid foundation perimeter wall, solid backfilled foundation, open foundation on columns/posts/piers/piles/shear walls);
 - (b) Openings to facilitate equalization of hydrostatic flood forces on walls in accordance with Section

7.2H(5)(b)(4), when solid foundation perimeter walls are used in Zones A, AO, AE, and A1--30;

- (5) Usage details of any enclosed areas below the regulatory flood protection elevation.
 - (6) Plans and/or details for the protection of public utilities and facilities such as sewer, gas, electrical, and water systems to be located and constructed to minimize flood damage;
 - (7) Copies of all other local, state and federal permits required prior to floodplain development permit issuance (wetlands, endangered species, erosion and sedimentation control, riparian buffers, mining, etc.)
 - (8) Documentation for placement of recreational vehicles and/or temporary structures, when applicable, to ensure Section 7.2H(5)(b)(6 and 7) of this ordinance are met.
 - (9) A description of proposed watercourse alteration or relocation, when applicable, including an engineering report on the effects of the proposed project on the flood-carrying capacity of the watercourse and the effects to properties located both upstream and downstream; and a map (if not shown on plot plan) showing the location of the proposed watercourse alteration or relocation.
- c. **Permit requirements.** The floodplain development permit shall include, but not be limited to:
- (1) A description of the development to be permitted under the floodplain development permit.
 - (2) The special flood hazard area determination for the proposed development per available data specified in Section 7.2H(3)b.
 - (3) The regulatory flood protection elevation required for the reference level and all attendant utilities.
 - (4) The regulatory flood protection elevation required for the protection of all public utilities.
 - (5) All certification submittal requirements with timelines.
 - (6) A statement that no fill material or other development shall encroach into the floodway or non-encroachment area of any watercourse, as applicable.
 - (7) The flood openings requirements, if in Zones A, AO, AE or A1--30.
- d. **Certification requirements.**
- (1) Elevation certificates.
 - (a) An elevation certificate (FEMA Form 81-31) is required prior to the actual start of any new construction. It shall be the duty of the permit holder to submit to the floodplain administrator a certification of the elevation of the reference level, in relation to mean sea level. The floodplain administrator shall review the certificate data submitted. Deficiencies detected by such review shall be corrected by the permit holder prior to the beginning of construction. Failure to submit the certification or failure to make required corrections shall be cause to deny a floodplain development permit.

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- (b) A final as-built elevation certificate (FEMA Form 81-31) is required after construction is completed and prior to certificate of compliance/occupancy issuance. It shall be the duty of the permit holder to submit to the floodplain administrator a certification of final as-built construction of the elevation of the reference level and all attendant utilities. The floodplain administrator shall review the certificate data submitted. Deficiencies detected by such review shall be corrected by the permit holder immediately and prior to certificate of compliance/occupancy issuance. In some instances, another certification may be required to certify corrected as-built construction. Failure to submit the certification or failure to make required corrections shall be cause to withhold the issuance of a certificate of compliance/occupancy.
- (2) Floodproofing certificate. If non-residential floodproofing is used to meet the regulatory flood protection elevation requirements, a floodproofing certificate (FEMA Form 81-65), with supporting data and an operational plan, is required prior to the actual start of any new construction. It shall be the duty of the permit holder to submit to the floodplain administrator a certification of the floodproofed design elevation of the reference level and all attendant utilities, in relation to mean sea level. Floodproofing certification shall be prepared by or under the direct supervision of a professional engineer or architect and certified by same. The floodplain administrator shall review the certificate data and plan. Deficiencies detected by such review shall be corrected by the applicant prior to permit approval. Failure to submit the certification or failure to make required corrections shall be cause to deny a floodplain development permit. Failure to construct in accordance with the certified design shall be cause to withhold the issuance of a certificate of compliance/occupancy.
- (3) If a manufactured home is placed within Zone A, AO, AE, or A1--30 and the elevation of the chassis is more than 36 inches in height above grade, an engineered foundation certification is required per Section 7.2H(5)(b)3.
- (4) If a watercourse is to be altered or relocated, a description of the extent of watercourse alteration or relocation; a professional engineer's certified report on the effects of the proposed project on the flood-carrying capacity of the watercourse and the effects to properties located both upstream and downstream; and a map showing the location of the proposed watercourse alteration or relocation shall all be submitted by the permit applicant prior to issuance of a floodplain development permit.
- (5) Certification exemptions. The following structures, if located within Zone A, AO, AE or A1--30, are exempt from the elevation/floodproofing certification requirements specified in item (a) of this subsection:
- (a) Recreational vehicles meeting requirements of

Section 7.2H(5)b(6)a;

- (b) Temporary structures meeting requirements of Section 7.2H(5)b(7); and
- (c) Accessory structures less than 150 square feet meeting requirements of Section 7.2H(5)b(8).

e. **Duties and responsibilities of the Floodplain Administrator.**

The Floodplain Administrator shall perform, but not be limited to, the following duties:

- (1) Review all floodplain development applications and issue permits for all proposed development within special flood hazard areas to assure that the requirements of this ordinance have been satisfied.
- (2) Advise permittee that additional federal or state permits (wetlands, endangered species, erosion and sedimentation control, riparian buffers, mining, etc.) may be required, and require that copies of such permits be provided and maintained on file with the floodplain development permit.
- (3) Notify adjacent communities and the North Carolina Department of Crime Control and Public Safety, Division of Emergency Management, State Coordinator for the National Flood Insurance Program prior to any alteration or relocation of a watercourse, and submit evidence of such notification to the federal emergency management agency (FEMA).
- (4) Assure that maintenance is provided within the altered or relocated portion of said watercourse so that the flood-carrying capacity is not diminished.
- (5) Prevent encroachments into floodways and non-encroachment areas unless the certification and flood hazard reduction provisions of Section 7.2H(5)e are met.
- (6) Obtain actual elevation (in relation to mean sea level) of the reference level (including basement) and all attendant utilities of all new or substantially improved structures, in accordance with Section 7.2H(4)d.
- (7) Obtain actual elevation (in relation to mean sea level) to which all new and substantially improved structures and utilities have been floodproofed, in accordance with Section 7.2H(4)d.
- (8) Obtain actual elevation (in relation to mean sea level) of all public utilities in accordance with Section 7.2H(4)d.
- (9) When floodproofing is utilized for a particular structure, obtain certifications from a registered professional engineer or architect in accordance with Section 7.2H(4)d and Section 7.2H(5)b(2).
- (10) Where interpretation is needed as to the exact location of boundaries of the special flood hazard areas (for example, where there appears to be a conflict between a mapped boundary and actual field conditions), make the necessary interpretation. The person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation as provided in this article.
- (11) When base flood elevation (BFE) data has not been provided in accordance with Section 7.2H(3)b, obtain, review, and reasonably utilize any base flood elevation

- (BFE) data, along with floodway data or non-encroachment area data available from a Federal, State, or other source, including data developed pursuant to Section 7.2H(5)d(2)b, in order to administer the provisions of this ordinance.
- (12) When base flood elevation (BFE) data is provided but no floodway nor non-encroachment area data has been provided in accordance with Section 7.2H(3)b, obtain, review, and reasonably utilize any floodway data or non-encroachment area data available from a federal, state, or other source in order to administer the provisions of this ordinance.
- (13) When the lowest ground elevation of a parcel or structure in a special flood hazard area is above the base flood elevation, advise the property owner of the option to apply for a letter of map amendment (LOMA) from FEMA. Maintain a copy of the letter of map amendment (LOMA) issued by FEMA in the floodplain development permit file.
- (14) Permanently maintain all records that pertain to the administration of this ordinance and make these records available for public inspection.
- (15) Make on-site inspections of work in progress. As the work pursuant to a floodplain development permit progresses, the floodplain administrator shall make as many inspections of the work as may be necessary to ensure that the work is being done according to the provisions of the local ordinance and the terms of the permit. In exercising this power, the floodplain administrator has a right, upon presentation of proper credentials, to enter on any premises within the jurisdiction of the community at any reasonable hour for the purposes of inspection or other enforcement action.
- (16) Issue stop-work orders as required. Whenever a building or part thereof is being constructed, reconstructed, altered, or repaired in violation of this ordinance, the floodplain administrator may order the work to be immediately stopped. The stop-work order shall be in writing and directed to the person doing the work. The stop-work order shall state the specific work to be stopped, the specific reason(s) for the stoppage, and the condition(s) under which the work may be resumed. Violation of a stop-work order constitutes a misdemeanor.
- (17) Revoke floodplain development permits as required. The floodplain administrator may revoke and require the return of the floodplain development permit by notifying the permit holder in writing stating the reason(s) for the revocation. Permits shall be revoked for any substantial departure from the approved application, plans, or specifications; for refusal or failure to comply with the requirements of State or local laws; or for false statements or misrepresentations made in securing the permit. Any floodplain development permit mistakenly issued in violation of an applicable state or local law may also be revoked.
- (18) Make periodic inspections throughout all special flood hazard areas within the jurisdiction of the community. The

floodplain administrator and each member of his or her inspections department shall have a right, upon presentation of proper credentials, to enter on any premises within the territorial jurisdiction of the department at any reasonable hour for the purposes of inspection or other enforcement action.

- (19) Follow through with corrective procedures of Section 7.2H(4)f.
- (20) Review, provide input, and make recommendations for variance requests.
- (21) Maintain a current map repository to include, but not limited to, the FIS Report, FIRM and other official flood maps and studies adopted in accordance with Section 7.2H(2)b of this ordinance, including any revisions thereto including letters of map change, issued by FEMA. Notify state and FEMA of mapping needs.
- (22) Coordinate revisions to FIS reports and FIRMs, including letters of map revision based on fill (LOMR-F) and letters of map revision (LOMR).

f. Corrective procedures.

- (1) **Violations to be corrected:** When the floodplain administrator finds violations of applicable state and local laws, it shall be his or her duty to notify the owner or occupant of the building of the violation. The owner or occupant shall immediately remedy each of the violations of law cited in such notification.
- (2) **Actions in event of failure to take corrective action:** If the owner of a building or property shall fail to take prompt corrective action, the floodplain administrator shall give the owner written notice, by certified or registered mail to the owner's last known address or by personal service, stating:
 - (a) That the building or property is in violation of the flood damage prevention ordinance;
 - (b) That a hearing will be held before the floodplain administrator at a designated place and time, not later than ten days after the date of the notice, at which time the owner shall be entitled to be heard in person or by counsel and to present arguments and evidence pertaining to the matter; and,
 - (c) That following the hearing, the floodplain administrator may issue an order to alter, vacate, or demolish the building; or to remove fill as appears appropriate.
- (3) **Order to take corrective action:** If, upon a hearing held pursuant to the notice prescribed above, the floodplain administrator shall find that the building or development is in violation of the flood damage prevention ordinance, they shall issue an order in writing to the owner, requiring the owner to remedy the violation within a specified time period, not less than 60) calendar days, nor more than 180 calendar days. Where the floodplain administrator finds that there is imminent danger to life or other property, they may order that corrective action be taken in such lesser period as may be feasible.

(4) **Appeal:** Any owner who has received an order to take corrective action may appeal the order to the local elected governing body by giving notice of appeal in writing to the floodplain administrator and the clerk within ten days following issuance of the final order. In the absence of an appeal, the order of the floodplain administrator shall be final. The local governing body shall hear an appeal within a reasonable time and may affirm, modify and affirm, or revoke the order.

(5) **Failure to comply with order:** If the owner of a building or property fails to comply with an order to take corrective action for which no appeal has been made or fails to comply with an order of the governing body following an appeal, the owner shall be guilty of a misdemeanor and shall be punished at the discretion of the court.

g. Variance procedures.

(1) The Board of Adjustment as established by the Town of Garner, hereinafter referred to as the "appeal board", shall hear and decide requests for variances from the requirements of this ordinance.

(2) Any person aggrieved by the decision of the appeal board may appeal such decision to the Court, as provided in Chapter 7A of the North Carolina General Statutes.

(3) Variances may be issued for:

(a) The repair or rehabilitation of historic structures upon the determination that the proposed repair or rehabilitation will not preclude the structure's continued designation as a historic structure and that the variance is the minimum necessary to preserve the historic character and design of the structure;

(b) Functionally dependent facilities if determined to meet the definition as stated in Section 7.2H(2) of this ordinance, provided provisions of Section 7.2H(4)g(9)b and e have been satisfied, and such facilities are protected by methods that minimize flood damages and;

(c) Any other type of development, provided it meets the requirements stated in this section.

(4) In passing upon variances, the appeal board shall consider all technical evaluations, all relevant factors, all standards specified in other sections of this ordinance, and:

(a) The danger that materials may be swept onto other lands to the injury of others;

(b) The danger to life and property due to flooding or erosion damage;

(c) The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner;

(d) The importance of the services provided by the proposed facility to the community;

(e) The necessity to the facility of a waterfront location as defined under Section 7.2H(2) of this ordinance as a functionally dependent facility, where applicable;

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- (f) The availability of alternative locations, not subject to flooding or erosion damage, for the proposed use;
 - (g) The compatibility of the proposed use with existing and anticipated development;
 - (h) The relationship of the proposed use to the Comprehensive Growth Plan and floodplain management program for that area;
 - (i) The safety of access to the property in times of flood for ordinary and emergency vehicles;
 - (j) The expected heights, velocity, duration, rate of rise, and sediment transport of the floodwaters and the effects of wave action, if applicable, expected at the site; and
 - (k) The costs of providing governmental services during and after flood conditions including maintenance and repair of public utilities and facilities such as sewer, gas, electrical and water systems, and streets and bridges.
- (5) A written report addressing each of the above factors shall be submitted with the application for a variance.
- (6) Upon consideration of the factors listed above and the purposes of this ordinance, the appeal board may attach such conditions to the granting of variances as it deems necessary to further the purposes of this ordinance.
- (7) Any applicant to whom a variance is granted shall be given written notice specifying the difference between the base flood elevation (BFE) and the elevation to which the structure is to be built and that such construction below the base flood elevation increases risks to life and property, and that the issuance of a variance to construct a structure below the base flood elevation will result in increased premium rates for flood insurance up to \$25.00 per \$100.00 of insurance coverage. Such notification shall be maintained with a record of all variance actions, including justification for their issuance.
- (8) The floodplain administrator shall maintain the records of all appeal actions and report any variances to the federal emergency management agency and the State of North Carolina upon request.
- (9) Conditions for variances:
- (a) Variances shall not be issued when the variance will make the structure in violation of other federal, state, or local laws, regulations, or ordinances.
 - (b) Variances shall not be issued within any designated floodway or non-encroachment area if the variance would result in any increase in flood levels during the base flood discharge.
 - (c) Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.
 - (d) Variances shall only be issued prior to development permit approval.
 - (e) Variances shall only be issued upon:
 - i. A showing of good and sufficient cause;

- ii. A determination that failure to grant the variance would result in exceptional hardship; and
 - iii. A determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, or extraordinary public expense, create nuisance, cause fraud on or victimization of the public, or conflict with existing local laws or ordinances.
- (10) A variance may be issued for solid waste disposal facilities, hazardous waste management facilities, salvage yards, and chemical storage facilities that are located in special flood hazard areas provided that all of the following conditions are met.
- (a) The use serves a critical need in the community.
 - (b) No feasible location exists for the use outside the special flood hazard area.
 - (c) The reference level of any structure is elevated or floodproofed to at least the regulatory flood protection elevation.
 - (d) The use complies with all other applicable federal, state and local laws.
 - (e) The Town of Garner has notified the Secretary of the North Carolina Department of Crime Control and Public Safety of its intention to grant a variance at least 30 calendar days prior to granting the variance.

5. Provisions for flood hazard reduction.

- a. **General standards.** In all special 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, 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, appliances (washers, dryers, refrigerators, freezers, etc.), 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 sewage 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, which is in compliance with the provisions of this ordinance, shall meet the requirements of "new construction" as contained in this ordinance.
 - (9) Nothing in this ordinance shall prevent the repair, reconstruction, or replacement of a building or structure existing on the effective date of this ordinance 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 this ordinance.
 - (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 Section 7.2H(4)g(10). 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 only if the structure or tank is either elevated or floodproofed to at least the regulatory flood protection elevation and certified according to Section 7.2H(4)d of this ordinance.
 - (11) All subdivision proposals and other development proposals shall be consistent with the need to minimize flood damage.
 - (12) All subdivision proposals and other development proposals shall have public utilities and facilities such as sewer, gas, electrical, and water systems located and constructed to minimize flood damage.
 - (13) All subdivision proposals and other development proposals shall have adequate drainage provided to reduce exposure to flood hazards.
 - (14) All subdivision proposals and other development proposals 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.
 - (15) Fill material located within any 100-year floodplain used for a proposed development shall require certification by a professional engineer, supported by appropriate documentation, that such fill material will not raise the 100-year floodplain elevation on any upstream property during a base flood event.
- b. **Specific standards.** In all special flood hazard areas where base flood elevation (BFE) data has been provided, as set forth in Section 7.2H(2), or Section 7.2H(4)e(11 and 12), the following

provisions, in addition to Section 7.2H(5)a, are required:

- (1) **Residential construction.** New construction and substantial improvements shall have the reference level, including basement, elevated no lower than the regulatory flood protection elevation, as defined in Section 7.2H(2) of this ordinance.
- (2) **Non-residential construction.** New construction and substantial improvement of any commercial, industrial, or other non-residential structure shall have the reference level, including basement, elevated no lower than the regulatory flood protection elevation, as defined in Section 7.2H(1) of this ordinance. Structures located in A, AE and A1--30 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 watertight 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 Section 7.2H(5)g(2). A registered professional engineer or architect shall certify that the standards of this subsection are satisfied. Such certification shall be provided to the Floodplain Administrator as set forth in Section 7.2H(4)d, along with the operational and maintenance plans.
- (3) **Manufactured homes.**
 - (a) New or replacement manufactured homes shall be elevated so that the reference level of the manufactured home is no lower than the regulatory flood protection elevation, as defined in Section 7.2H(2) of this ordinance.
 - (b) Manufactured homes 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. Additionally, when the elevation would be met by an elevation of the chassis 36 inches or less above the grade at the site, the chassis shall be supported by reinforced piers or engineered foundation. When the elevation of the chassis is above 36 inches in height, an engineering certification is required.
 - (c) All enclosures or skirting below the lowest floor shall meet the requirements of Section 7.2H(3)b(4)(a), (b) and (c).
 - (d) An evacuation plan must be developed for evacuation of all residents of all new, substantially improved or substantially damaged manufactured home parks or subdivisions located within flood prone areas. This plan shall be filed with and

approved by the floodplain administrator and the local emergency management coordinator.

- (4) **Elevated buildings.** Fully enclosed area, of new construction and substantially improved structures, which is below the lowest floor:
- (a) Shall not be designed or used for human habitation, but shall only be used for 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 (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;
 - (c) Shall include, in Zones A, AO, AE, and A1--30, flood openings to automatically equalize hydrostatic flood forces on walls by allowing for the entry and exit of floodwaters. To meet this requirement, the openings must either be certified by a professional engineer or architect or meet or exceed the following minimum design criteria:
 - i. A minimum of two flood openings on different sides of each enclosed area subject to flooding;
 - ii. The total net area of all flood openings must be at least one square inch for each square foot of enclosed area subject to flooding;
 - iii. If a building has more than one enclosed area, each enclosed area must have flood openings to allow floodwaters to automatically enter and exit;
 - iv. The bottom of all required flood openings shall be no higher than one foot above the adjacent grade;
 - v. 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
 - vi. 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 as outlined above.
- (5) **Additions/improvements.**
- (a) Additions and/or improvements to pre-FIRM structures when the addition and/or improvements in combination with any interior modifications to the

-
- existing structure are:
- i. Not a substantial improvement, the addition and/or improvements must be designed to minimize flood damages and must not be any more non-conforming than the existing structure.
 - ii. A substantial improvement, both the existing structure and the addition and/or improvements must comply with the standards for new construction.
- (b) 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.
 - (c) Additions and/or improvements to post-FIRM structures when the addition and/or improvements in combination with any interior modifications to the existing structure are:
 - i. Not a substantial improvement, the addition and/or improvements only must comply with the standards for new construction.
 - ii. A substantial improvement, both the existing structure and the addition and/or improvements must comply with the standards for new construction.
 - (d) Where an independent perimeter load-bearing wall is provided between the addition and the existing building, the addition(s) shall be considered a separate building and only the addition must comply with the standards for new construction.
- (6) **Recreational vehicles.** Recreational vehicles shall either:
 - (a) Be on site for fewer than 180 consecutive days and be fully licensed and ready for highway use (a recreational vehicle is ready for highway use if it is on its wheels or jacking system, is attached to the site only by quick disconnect type utilities, and has no permanently attached additions); or
 - (b) Meet all the requirements for new construction.
 - (7) **Temporary non-residential 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 three 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, to which the temporary structure will be moved.
- (8) **Accessory structures.** When accessory structures (sheds, detached garages, etc.) are to be placed within a special 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 Section 7.2H(5)a(1);
 - (f) All service facilities such as electrical shall be installed in accordance with Section 7.2H(5)a(4);
 - (g) Flood openings to facilitate automatic equalization of hydrostatic flood forces shall be provided below regulatory flood protection elevation in conformance with Section 7.2H(5)b(4)(c);
 - (h) An accessory structure with a footprint less than 150 square feet that satisfies the criteria outlined above does not require an elevation or floodproofing certificate. Elevation or floodproofing certifications are required for all other accessory structures in accordance with Section 7.2H(4)d.

c. Reserved.

d. Standards for floodplains without established base flood elevations. Within the special flood hazard areas designated as approximate zone and established in Section 7.2H(3)b, where no base flood elevation (BFE) data has been provided by FEMA, the following provisions, in addition to Section 7.2H(5)(a and b), shall apply:

- (1) No encroachments, including fill, new construction, substantial improvements or new development shall be permitted within a distance of 20 feet each side from top of bank or five 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.
- (2) The BFE used in determining the regulatory flood protection elevation shall be determined based on one of the following

criteria set in priority order:

- (a) If base flood elevation (BFE) data is available from other sources, all new construction and substantial improvements within such areas shall also comply with all applicable provisions of this ordinance and shall be elevated or floodproofed in accordance with standards in Article 4, Section E(11 and 12).
 - (b) All subdivision, manufactured home park and other development proposals shall provide base flood elevation (BFE) data if development is greater than five acres or has more than 50 lots/manufactured home sites. Such base flood elevation (BFE) data shall be adopted by reference per Section 7.2H(3)b to be utilized in implementing this ordinance.
 - (c) When base flood elevation (BFE) data is not available from a federal, state, or other source as outlined above, the reference level shall be elevated to or above the regulatory flood protection elevation, as defined in Section 7.2H(2).
- e. **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:
- (a) Standards outlined in Section 7.2H(5)a and b; and
 - (b) 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.
- f. **Floodways and non-encroachment areas.** Areas designated as floodways or non-encroachment areas are located within the special flood hazard areas established in Article 3. The floodways and non-encroachment areas are extremely hazardous areas due to the velocity of floodwaters that have erosion potential and carry debris and potential projectiles. The following provisions, in addition to standards outlined in Section 7.2H(3)b shall apply to all development within such areas:
- 1. Construction within floodways restricted.
 - a. No development, including structures, fences, fill or storage of materials or equipment, are permitted within a floodway or the conservation buffer areas of specified streams, as defined above, except the following:
 - (1) Pasture, forestry, wildlife sanctuary, game farm and similar agricultural, wildlife and related uses.
 - (2) Lawns, gardens, play areas, and similar

areas, golf courses, tennis courts, archery ranges, picnic grounds, parks, hiking or horseback riding trails, open space and similar private and public recreational uses, provided that golf courses must have retention ponds.

- (3) Public water, stormwater or sewer infrastructure and highways.
 - (4) No artificial obstruction may be located within any floodway, except as provided above. For purposes of this section, an artificial obstruction is any obstruction, other than a natural obstruction, that can reduce the floodcarrying capacity of a stream, or may accumulate debris and thereby reduce the floodcarrying capacity of a stream. A natural obstruction includes any rock, tree, or analogous natural matter located within the floodway by a non-human cause.
 - (5) The use of fill materials within a floodway is prohibited unless certification by a registered professional engineer is provided demonstrating that no increase in flood levels during a base flood will result. Fill dirt within a floodplain shall be adequately stabilized to withstand the erosive force of the base flood.
 - (6) No new building construction or substantial improvement of an existing building may take place within any floodway.
2. No encroachments, including fill, new construction, substantial improvements and other developments shall be permitted unless it has been demonstrated that:
 - (a) The proposed encroachment would not result in any increase in the flood levels during the occurrence of the base flood, based on hydrologic and hydraulic analyses performed in accordance with standard engineering practice and presented to the floodplain administrator prior to issuance of floodplain development permit, or
 - (b) 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.
 3. If Section 7.2H(5)F(2)(e) is satisfied, all development shall comply with all applicable flood hazard reduction provisions of this ordinance.
 4. No manufactured homes shall be permitted, except replacement manufactured homes in an existing manufactured home park or subdivision, provided the following provisions are met:
 - (a) The anchoring and the elevation standards of Section 7.2H(5)(b)(3); and
 - (b) The no encroachment standard of Section 7.2H(5)F(2)(a).

- g. **Standards for areas of shallow flooding (Zone AO).** Located within the special flood hazard areas established in Section 7.2H(3)b, are areas designated as shallow flooding areas. These areas have special flood hazards associated with base flood depths of one to three feet where a clearly defined channel does not exist and where the path of flooding is unpredictable and indeterminate. In addition to Section 7.2H(5)a, all new construction and substantial improvements 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 two feet, above the highest adjacent grade; or at least two feet above the highest adjacent grade plus a freeboard of two feet if no depth number is specified.
 2. Non-residential structures may, in lieu of elevation, be floodproofed to the same level as required in Section 7.2H(5)(g)(2) so that the structure, together with attendant utility and sanitary facilities, below that level shall be 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 Section 7.2H(4)d and Section 7.2H(5)(b)2.
 3. Adequate drainage paths shall be provided around structures on slopes, to guide floodwaters around and away from proposed structures.

(Ord. No. 3397, § 1, 4-18-06; Ord. No. 3507, § 1, 4-22-08; Ord. No. 3558, § 2, 7-7-09)

7.3. Outdoor storage and display.

- A. **Limited outside display of seasonal merchandise.** In NC, CR and I-1, limited outside display of seasonal merchandise is permitted provided:
1. Fire lanes and vehicular accessways are not obstructed or encroached upon.
 2. If a pedestrian walkway exists along the entrance frontage of the business, a minimum four-foot wide pedestrian walkway is maintained.
 3. The total square footage of outside display area is ten percent or less of the business's interior sales square footage.
 4. Sales transactions take place inside the business building.

7.4. Off-street parking and loading standards.

- A. **Number of parking spaces required.**
1. All developments shall provide a sufficient number of parking spaces to accommodate the number of vehicles likely to be attracted to the development. However, in an effort to minimize impervious surfaces that can cause stormwater quantity and quality problems, the number of parking spaces needed should not be based upon rare seasonal peak demands.
 2. The presumptions established by this section are that:
 - a. A development must comply with the parking standards set forth in this section to satisfy the requirement stated in paragraph 1. above; and
 - b. Any development that does meet these standards is in compliance. However, the table of parking standards is only intended to establish a presumption and should be flexibly administered, as provided in paragraph C.
 3. The table of parking standards represents both the typical minimum

number of parking spaces required and the maximum number of parking spaces allowed. For those developments desiring additional parking beyond that required by the parking standards, the total number of parking spaces provided may be increased by up to ten percent above that recommended by the parking standards. If additional parking, above the ten percent increase, is still needed, the additional parking shall be constructed of permeable pavement or shall be drained directly to a bioretention area or other approved water quality BMP as approved by the Town of Garner.

4. Uses in the table of parking requirements are keyed to Article 5. If application of this table results in a fractional space, any fraction of one-half or less may be disregarded, while any fraction in excess of one-half be counted as one parking space.
5. The number of parking spaces in lots of ten or more spaces may be reduced by one if the developer provides a bicycle rack offering a secure parking area for at least five bicycles.
6. Accessible parking.
 - a. Accessible parking spaces shall be provided in compliance with the following table and shall be identified with above-ground signs as specified in General Statutes 20-37.6 and 136-30, the North Carolina Department of Transportation Manual on Uniform Traffic Control and Chapter 4 of the North Carolina Accessibility Code, as amended.

Total Spaces in Lot	Minimum Number of Accessible Spaces
1 to 25	1
26 to 50	2
51 to 75	3
76 to 100	4
101 to 150	5
151 to 200	6
201 to 300	7
301 to 400	8
401 to 500	9
501 to 1,000	Two percent of total
1,001 and over	20 plus 1 for each 100 over 1,000

- b. One in every eight (1 in 8) accessible parking spaces, or a minimum of one (whichever is the greater number), shall be van accessible and shall be identified [by] the words "van accessible" on an above-ground sign. Van accessible parking spaces shall be open to all vehicles properly identified in compliance with General Statute 20-37.6.
7. Whenever a building is constructed, in whole or in part, for low parking need uses, the building should be located so that sufficient usable space remains on the lot to add the additional parking spaces that would be required to convert the use of the building entirely to the new use classifications. Whenever a building is proposed for purposes that require a lesser number

of parking spaces than other uses to which the building might well be put at some future date, the Planning Director should send to the developer a certified letter explaining that sufficient space should be left on the lot to add parking spaces at a later time if required.

- B. **Table of parking requirements.** The Town Council recognizes that the table of parking requirements cannot cover every possible situation that may arise. Therefore, in cases not specifically covered, the Planning Director is authorized through Written Interpretation to determine the parking requirements, using this table as a guide.

<u>TABLE OF PARKING REQUIREMENTS</u>		
<u>Use Category</u>	<u>Specific Use</u>	<u>Requirement</u>
Household Living	Single-Family Detached	2 spaces per unit, plus 1 space per room rented
	Residential Cluster	2 spaces per unit, plus 1 space per room rented
	Two-Family Dwelling	2 spaces for each unit, except that one-bedroom units require only 1 space
	Townhouse (fee simple or condominium)	2 spaces for each unit, plus 1 additional space for every 4 uses in the development
	Multifamily Residence	1½ spaces for each one-bedroom unit; 2 spaces for each two-bedroom unit; 2 ½ spaces for each unit with three or more bedrooms, plus one additional space for every four units in the development.
	Upper-Story Residential	2 spaces per unit
	Manufactured Home	2 spaces per unit
	Modular Home	2 spaces per unit, plus 1 space per room rented
	Security or Caretaker's Quarters	2 spaces per unit
	Group Living	Family Care Home
Group Care Home		2 spaces for every 5 beds, except for uses exclusively serving children under 16, in which case 1 space for every 3 beds
Intermediate Care Home		1 space for every two employees on maximum shift and 1 space for every 3 beds
Other		1 space per 2 bedrooms and 1.5 spaces per employee
Community Service	Community Center	1 space per 300 square feet
	Library, Museum, Art Gallery, Art Center	1 space per 300 square feet
<u>TABLE OF PARKING REQUIREMENTS</u>		

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<u>Use Category</u>	<u>Specific Use</u>	<u>Requirement</u>
	Other	1 space per 200 square feet of gross floor area
Day Care	Day Care Center	1 space per employee plus 1 space per 8 clients enrolled
Educational Facilities	Business Schools	5 spaces per classroom or office
	College/University	5 spaces per classroom or office
	Schools, Public/ Private	2 spaces per classroom or office in elementary schools; 5 spaces per classroom or office in high schools
	Trade/Vocational	5 spaces per classroom or office
Government Facilities	Ambulance Service, Rescue Squad, Police Station	1 space per 200 square feet of gross floor area
	Prison or Jail	1 per employee plus 1 visitor space per 10 inmates
	Other	1 space per 300 square feet of gross floor area
Health Care	Continuing Care Facility	1 space per employee on maximum shift plus 1 visitor space per 5 beds
	Hospital	2 spaces per bed
	Medical Clinic	1 space per 150 feet of gross floor area
	Other	1 space per 200 square feet of gross floor area
Institutions	Group Care Facility	1 per 3 beds
	Handicapped Institution	1 per 3 beds
	Intermediate Care institution	1 space for every two employees on maximum shift and 1 space for every 3 beds
	Mental Health Facility, Nursing Care Institution	1 space for every employee on maximum shift and 1 space for every 3 beds
	Other	1 space for every two employees on maximum shift and 1 space for every 3 beds
Parks and Open Space	Cemetery	1 space per 50 internment plots
<u>TABLE OF PARKING REQUIREMENTS</u>		
<u>Use Category</u>	<u>Specific Use</u>	<u>Requirement</u>

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	Public Park	2 per acre, plus 1 per 250 square feet of developed park facility
	Public Swimming Pool, Tennis Courts, Golf Course	1 space for every 3 persons to be normally accommodated in the establishment, 5 per tennis court, and 4 per hole
	Other	2 per acre, plus 1 per 250 square feet of developed park facility
Passenger Terminal	Bus Passenger Terminal	1 per 300 square feet
	Taxicab or Limousine Operations or Facility	1 per employee, plus 2 visitor spaces
Religious Institution		1 space for every 4 seats or 1 space for every 40 square feet in the portion of the church building to be used for services
Utilities	Minor Utility	None
	Major Utility	1 per facility, plus 1 additional per 250 square feet of gross floor area and 1 per fleet vehicle
	Telecommunication Facility	1 for service vehicle
Entertainment	Golf Course or Country Club, Private	1 space per 200 square feet of area within enclosed building, plus 1 space for every 3 persons that the outdoor facilities are designed to accommodate when used to the maximum capacity
	Gym, Spa, Indoor Tennis Court or Pool, Private	1 space for every 3 persons that the facilities are designed to accommodate when fully utilized, plus 1 space per 200 square feet of gross floor area used in a manner not susceptible to such calculation
	Horse Stables	1 space per 2 horses at maximum capacity
	Electronic Gaming Centers	1 space for every 3 persons that the facilities are designed to accommodate when fully utilized (if they can be measured in such a fashion) plus 1 space per 200 square feet of gross floor area used in a manner not susceptible to such calculation
	Indoor Entertainment Facility	1 space for every 3 persons that the facilities are designed to accommodate when fully utilized (if they can be measured in such a fashion) plus 1 space per 200 square feet of gross floor area used in a manner not susceptible to such calculation
<u>TABLE OF PARKING REQUIREMENTS</u>		
<u>Use Category</u>	<u>Specific Use</u>	<u>Requirement</u>
	Outdoor Athletic Facility, Private	1 per 3 fixed seats, plus 1 per 25 square feet of gross floor area of exhibit or portable seating space.

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	Sexually Oriented Business	1 per 100 square feet of gross floor area, or 1 per each 4 permanent seats, plus 1 space per 200 square feet of gross floor area
	Theater	1 space for every four seats
	Theater, Drive-In	1 space per speaker outlet
	Water Slide	1 space for every 3 persons that the facilities are designed to accommodate when fully utilized
	Other	1 space for every 200 square feet of gross floor area
Office	Medical Office	1 space for every 200 square feet of gross floor area
	Other	1 space for every 300 square feet of gross floor area
Overnight Accommodations	Bed and Breakfast	1 space per room plus 1 space for every 2 employees on the maximum shift
	Extended Stay Facility	1 space per room plus 1 space for every 2 employees on the maximum shift
	Hotel/Motel	1 space per room plus 1 space for every 2 employees on the maximum shift
Parking, Commercial		1 space per employee on the maximum shift
Restaurants	Drive-In Restaurant	1 space per 100 square feet of gross floor area, plus 1.5 spaces for every 2 employees.
	Drive-Through Restaurant	1 space for each 3 seats, plus reserve lane capacity equal to 5 spaces per drive-up window
	Other	1 space plus 6 spaces per order delivery person on maximum shift
Retail Sales and Service	Bar, Nightclub, Taverns	1 space per 100 square feet of gross floor area
	Convenience Store	1 space per 200 square feet of gross floor area

TABLE OF PARKING REQUIREMENTS

<u>Use Category</u>	<u>Specific Use</u>	<u>Requirement</u>
	Fuel Sales	1 space per 200 square feet of gross floor area of building devoted primarily to gas sales operation, plus sufficient parking area to accommodate 2 vehicles per pump without interfering with other parking spaces
	Open Air Market	1 space per 300 square feet of sales area
	Veterinarian/Kennel, Indoor	1 space per 200 square feet of gross floor area

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	Veterinarian/Kennel, Outdoor	1 space per 200 square feet of gross floor area
	Other	1 space per 200 square feet of gross floor area
Self-Service Storage		1 per 5,000 square feet of area devoted to storage
Vehicle Sales and Service	Car Wash	1 space for every 3 employees on the maximum shift plus 3 spaces per stall
	Vehicle Repair	5 spaces per service bay plus 1 space for each employee
	Vehicle Sales, Rental	2 spaces per 300 square feet of gross floor area plus one space for every 2 employees on the maximum shift
	Vehicle Service, Limited	5 spaces per service bay plus 1 space for each employee
	Other	1 space per employee, plus one visitor space per 200 square feet of office
Aviation Service		1 space per employee, plus one visitor space per 200 square feet of office
Light Industrial Service	Flex Space	1 per 500 square feet of gross floor area
	Other	1 per 500 square feet of gross floor area, plus 1 additional per 1,000 square feet of gross floor area outdoor facility and 1 per 2,500 square feet of indoor storage area
Manufacturing and Production		1 space for every 2 employees on the maximum shift or 1 space per 200 square feet of gross floor area, as most appropriate
<u>TABLE OF PARKING REQUIREMENTS</u>		
<u>Use Category</u>	<u>Specific Use</u>	<u>Requirement</u>
Resource Extraction		1 space for every 2 employees on the maximum shift, plus 1 per 200 square feet of gross floor area indoor facilities
Warehouse and Freight Movement	Storage	1 space for every 2 employees on the maximum shift but not less than 1 per 5,000 square feet of area devoted to use (whether inside or outside)
	Truck Terminal	1 space per 2 employees on maximum shift
Waste Related Service	Reclamation Landfill	1 space per 2 employees on maximum shift plus 1 space per vehicle used in operation

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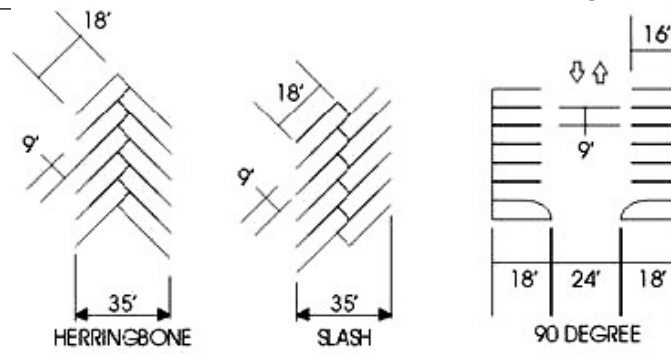
	Recyclable Materials Collection	1 space per 2 employees on maximum shift plus 1 space per vehicle used in operation
	Salvage Yard	1 space per 2 employees on the maximum shift but not less than 1 per 5,000 square feet of area devoted to use, plus 1 space per vehicle use in operation
	Sanitary Landfill	1 space per 2 employees on maximum shift plus 1 space per vehicle used in operation
	Other	1 space per 2 employees on maximum shift plus 1 space per vehicle used in operation
Wholesale Sales		1 space for every 2 employees on maximum shift
Agriculture		1 space per 2 employees on maximum shift

C. Flexibility in administration authorized.

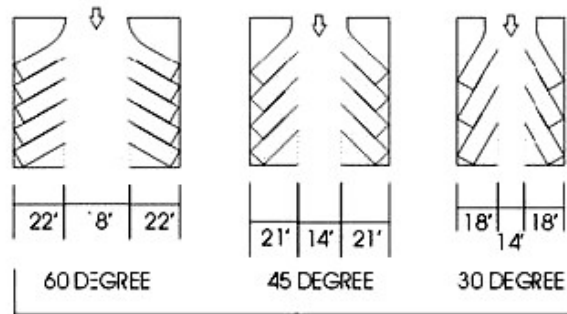
1. In recognition that inflexible application of the parking standards in paragraph B., above, may result in inadequate or excessive parking requirements, the permit-issuing authority shall permit deviations from the presumptive requirements of paragraph B. of up to 25%.
2. Any allowed or required deviation from the presumptive parking requirements set forth in paragraph B. above shall be entered on the permit.
3. If the permit-issuing authority is the Planning Director, and the applicant does not wish to accept the Planning Director's decision and requirements, the applicant can request a Variance.

D. Parking space dimensions. Each parking space shall contain a rectangular area at least 18 feet long and nine feet wide, except as follows:

1. Handicapped spaces shall be consistent with the requirements of Chapter 4 of the North Carolina Accessibility Code, as amended and shall be located as closely and conveniently as practical to building entrances (see Appendix F).
2. Parallel parking spaces shall have a rectangular area of not less than 24 feet in length and nine feet in width.
3. Angled parking spaces shall conform with the dimensions illustrated below. Alternative designs may be allowed by the Town Engineer provided it is consistent with the recommended dimensions contained in the latest edition of the Traffic Engineering Handbook published by the Institute of Traffic Engineers.



Note: Minimum 15 Degree Turning Radii
Direction of Traffic Flow ⇄



Note: Parking Stalls 18'x9'

E.

Required widths of parking area aisles and driveways.

1. Parking area aisle widths shall conform to the following table, which relates aisle widths to parking angles.

Parking Angle	Width: One Row Sharing Aisle	Width: Two Rows Sharing Aisle
90 degrees	42 feet	60 feet
60 degrees	40 feet	62 feet
45 degrees	35 feet	56 feet

2. Driveways shall be not less than ten feet in width for one-way traffic and 18 feet in width for two-way traffic, except that ten feet wide driveways are permissible for two-way traffic when:
 - a. The driveway is not longer than 50 feet;
 - b. It provides access to not more than six spaces;
 - c. Sufficient turning space is provided so that vehicles need not back into a public street;
 - d. The use is a low traffic volume use and the public right-of-way has a low traffic volume.

A Variance may provide relief from this requirement.

3. For uses proposed adjacent to U.S. 70, 401 or N.C. 50, see Article 8.

F.

General design requirements. Vehicle accommodation areas shall be designed so that:

1. Vehicles may exit such area without backing onto a public street. This requirement does not apply to driveways serving one or two dwelling units.
2. Vehicles cannot overhang property lines, public rights-of-way, or public sidewalks, or tend to bump against or damage any wall, vegetation or other obstruction.
3. Vehicles can move without posing a danger to pedestrians or other vehicles and without interfering with parking areas.

G. Vehicle accommodation area surfaces and standards.

1. It is strongly recommended that vehicle accommodation areas with lanes for drive-in windows or ten or more parking spaces, and that are used at least five days per week, be graded and surfaced with asphalt, concrete or other material that will provide equivalent protection against potholes, erosion, and dust. Appendix C contains specifications for surfaces meeting this standard.
2. Vehicle accommodation areas not permanently surfaced shall be graded and surfaced with crushed stone, gravel or other suitable material (as provided in the specifications set forth in the Town of Garner Standard Construction Details in Appendix B) to stabilize the area and reduce dust and erosion. The perimeter of such parking areas shall be defined by bricks, stones, railroad ties, or similar devices. This section shall not apply to uses required to have only one or two parking spaces.
3. Vehicle accommodation areas shall provide a minimum five feet or perimeter space between the right-of-way line or property line and the edge of the vehicle accommodation area, and shall be landscaped in plantings or other appropriate manner. When adjacent to residential uses and/or districts, plantings, hedge or a solid fence to a height of at least four feet shall provide a screen.
4. Parking spaces shall be demarcated in a practical and appropriate manner.
5. Vehicle accommodation areas shall be properly maintained. In particular, vehicle accommodation area surfaces shall be kept in good condition and parking space demarcations shall be kept clearly visible and distinct.
6. Parking spaces shall be separated from walkways so that at least a 4-foot walkway width is unobstructed.

H. Joint use of required parking space.

1. One parking area may contain required spaces for several uses, but, except as provided in paragraph 2. below, the required space assigned to one use may not be credited to any other use.
2. To the extent that developments that wish to make joint use of the same parking spaces operate at different times, the same spaces may be credited to both uses. For example, if a parking lot is used in connection with an office building on Monday through Friday but is generally 90 percent vacant on weekends, another development that operates only on weekends could be credited with 90 percent of the spaces on that lot. Or, if a church parking lot is generally occupied only to 50 percent of capacity on days other than Sunday, another development could make use of 50 percent of the church lot's spaces on those other days.
3. If the joint use of the same parking spaces by two or more principal uses involves satellite parking spaces, then the provisions of paragraph I. below are also applicable.

I. Satellite parking.

1. If the required number of off-street parking spaces cannot reasonably be provided on the same lot as the use they are serving then spaces may be provided on nearby lots in accordance with the provisions of this section. These off-site spaces are referred to as satellite parking spaces.
2. Satellite parking spaces (except spaces intended for employee use) must be located within 400 feet of the use associated with such parking.
3. Satisfactory written evidence of permission by the owner(s) of the area to be used for satellite parking spaces must be provided by the developer. The developer must also sign an acknowledgment that the continuing validity of his permit depends upon his continuing ability to provide the requisite number of parking spaces.

4. For developments where:
 - a. The building(s) pre-existed this UDO;
 - b. A change in use that does not involve any structural enlargement is proposed; and
 - c. The parking requirements cannot be satisfied on such lot, then the developer need only comply with the requirements of paragraph A. of this section to the extent that parking space is available on the lot where the development is located, and satellite parking space is reasonably available as provided in paragraph F of this section. It shall be a continuing condition of the permit authorizing development on such lot that the developer obtain satellite parking when it does become reasonably available.
5. Satellite parking areas are required to satisfy the general design requirements of paragraphs F. and G. of this section.

J. Loading and unloading areas.

1. Whenever normal business operations require routine deliveries to or shipments from a development, sufficient off-street loading and unloading area must be provided in accordance with this section to accommodate the delivery or shipment operations in a safe and convenient manner.
2. The loading and unloading area must be of sufficient size to accommodate the numbers and types of vehicles that are likely to use this area. The following table indicates the number and size of spaces that, presumptively, satisfy the standard set forth in this subsection. However, the permit-issuing authority shall approve more or less loading and unloading area if numerical justification is signed and sealed by an engineer licensed in NC.

Gross Floor Area of Building	Number of Spaces with Maximum Dimensions of 12' X 25' and Overhead Clearance of 14' From Street Grade
0—39,999	1
40,000—99,999	2
100,000—159,999	3
160,000—239,999	4
240,000—319,999	5
320,000—399,000	6
400,000 and over	6 spaces plus one space for each additional 90,000 square feet over 400,000 square feet or fraction thereof

3. Loading and unloading areas shall be so located and designed that the vehicles intended to use them:
 - a. Can maneuver safely and conveniently to and from a public right-of-way; and
 - b. Complete the loading and unloading operations without obstructing or interfering with any public right-of-way or any parking space or parking lot aisle.
4. No area allocated to loading and unloading facilities may be used to satisfy requirements for off-street parking and vice-versa.
5. Loading areas within the lots of industrial subdivisions shall be self contained and capable of handling its own truck maneuvering and docking requirements. The maneuvering, staging and docking areas shall not be in

conflict with the required parking spaces, lots and their aisle/maneuvering areas. The use of public streets for commercial vehicle staging and/or maneuvering is prohibited. Loading areas shall be located either to the rear or the side of the industrial structures(s) to alleviate unsightly appearances often created by loading facilities. Where such locations are not feasible, loading docks and doors shall be screened as detailed in Section 7.1.M.2.

(Ord. No. 3396, § 13, 4-3-06; Ord. No. 3558, § 2, 7-7-09; Ord. No. 3673, § 4, 10-1-12; Ord. No. 3749, § 3, 10-6-14)