



# Town of Carrboro

Town Hall  
301 W. Main St.  
Carrboro, NC 27510

## Meeting Agenda Board of Aldermen



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Tuesday, May 27, 2014

7:30 PM

Board Chambers - Room 110

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### A. REQUESTS FROM VISITORS AND SPEAKERS FROM THE FLOOR

7:30-7:35

### B. RESOLUTIONS, PROCLAMATIONS, AND ACKNOWLEDGEMENTS

1. **14-0181** Proclamation - Carrboro High School Men's Tennis Team

7:35-7:40

### C. CONSENT AGENDA

1. [14-0046](#) Request-to-set a Public Hearing on Land Use Ordinance Amendments relating to the Tree Protection and Replanting Standards

PURPOSE: The purpose of this item is for the Board to consider setting a public hearing on potential text amendments to the Land Use Ordinance to update the tree protection and replanting standards to reflect current urban forestry standards including the use of canopy cover for compliance with shade requirements. A draft ordinance is being prepared for the Board's consideration. A resolution setting a public hearing date for June 24th has also been prepared, and advisory board review would be needed prior to the public hearing.

**Attachments:** [Attachment A - Resolution](#)  
[Attachment C - ART-XIX](#)  
[Attachment D - APPEND-E](#)

2. [14-0175](#) Request for the business loan fund from Barry Keith dba Surplus Sids

PURPOSE: The purpose of this item is for the Board to consider a loan from the business loan fund to Barry Keith, owner and operator of Surplus Sids, at 309 E. Main Street, for façade improvements to the front of the building/porch addition.

**Attachments:** [Surplus Sids Application](#)  
[SURPLUS SIDS - drawings](#)

3. [14-0176](#) Curbside Recycling Roll-Out Cart Grant Project Ordinance

PURPOSE: The purpose of this item is to request the Board of Aldermen (BOA) accept a grant from the North Carolina Department of Environmental and Natural Resources (NCDENR) for the purchase of recycling roll-out carts and approve the project ordinance.

**Attachments:** [Roll Carts Interlocal Agreement - 2014 201405210849](#)  
[Curbside Recycling Roll Out Cart Grant Project Ordinance](#)

4. [14-0177](#) Request-to-set a Public Hearing on Land Use Ordinance Amendments relating to land uses associated with drive-in and drive-through windows

PURPOSE: The purpose of this item is for the Board of Aldermen to consider setting a public hearing on potential text amendments to the Land Use Ordinance affecting land uses with drive-in and drive-through window. A draft ordinance is being prepared for the Board's consideration. A resolution setting a public hearing date for June 24th and referring the amendments to advisory boards has been prepared.

**Attachments:** [Att A Resolution](#)  
[Att C - Excerpts from ART-XI-drive-in windows](#)  
[Att D - Excerpts from ART-X](#)

5. [14-0178](#) Approval of Abstract of Votes Cast at the May 6, 2014 Election

PURPOSE: The purpose of this item is for the Mayor and Board of Aldermen to consider approval of the Abstract of Votes Cast at the May 6, 2014 Election.

**Attachments:** [Abstract of Votes Cast.pdf](#)

6. [14-0180](#) Establishment of a Charge for the Temporary Energy and Climate Planning Task Force

PURPOSE: The purpose of this item is for the Board of Aldermen to consider adopting a charge for a temporary Energy and Climate Planning Task Force, designed to spearhead the community portion of the Town's Energy and Climate Protection Plan. A draft charge has been prepared for the Board's consideration.

**Attachments:** [Att A Resolution creating a charge for the temporary Energy and Climate Planning Task Force](#)

7. [14-0154](#) Endorsement of Recreational Trails Program Grant Applications for the Morgan Creek Greenway

PURPOSE: The Board is asked to endorse two Recreational Trails Program (RTP) grant applications that would contribute to funding the construction of Phases 1 and 2 of the Morgan Creek Greenway.

**Attachments:** [Attachment A - Resolution - Endorse RTP grants](#)

## D. OTHER MATTERS

**7:40-8:20**

1. [14-0099](#) Update on Implementation of Camera Technology for Police Department

PURPOSE: To update the Board on police department development of policies concerning vehicle and body-worn cameras.

**8:20-8:45**

2. [14-0149](#) Affordable Housing Goals and Strategies, Part II

PURPOSE: The purpose of this item is for the Board of Aldermen to consider the goals and strategies associated with affordable rentals that have been developed by the Affordable Housing Task Force.

**Attachments:** [Attachment A - Affordable Housing Goals /Affordable Rentals](#)  
[Attachment B - Affordable Housing Goals/Overarching Priorities](#)

**8:45-9:20**

3. [14-0155](#) Downtown Slow Zone Feasibility Report

PURPOSE: The report assesses the feasibility of implementing a slow zone in the central business district, following up on a Board of Aldermen resolution from February 18, 2014.

**Attachments:** [Attachment A - Resolution - Slow Zone Feasibility Report - May 2014](#)  
[Attachment B - Downtown Slow Zone feasibility report - final](#)

**E. MATTERS BY TOWN CLERK**

**F. MATTERS BY TOWN MANAGER**

**G. MATTERS BY TOWN ATTORNEY**

**H. MATTERS BY BOARD MEMBERS**



# Town of Carrboro

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## Agenda Item Abstract

**File Number:** 14-0046

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**Agenda Date: Version:** 1  
5/27/2014

**Status:**  
Agenda

**n Control:**  
Board of Ald

Ready   
**nFile Type:**  
Abstra

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### **TITLE:**

Request-to-set a Public Hearing on Land Use Ordinance Amendments relating to the Tree Protection and Replanting Standards

**PURPOSE:** The purpose of this item is for the Board to consider setting a public hearing on potential text amendments to the Land Use Ordinance to update the tree protection and replanting standards to reflect current urban forestry standards including the use of canopy cover for compliance with shade requirements. A draft ordinance is being prepared for the Board's consideration. A resolution setting a public hearing date for June 24<sup>th</sup> has also been prepared, and advisory board review would be needed prior to the public hearing.

**DEPARTMENT: Planning**

**CONTACT INFORMATION:** Christina Moon - 918-7325, Randy Dodd - 918-7326, David Jantzen - 918-7431, Mike Brough - 929-3905

**INFORMATION:** At its January 22, 2013 meeting, the Board received a staff report on potential approaches for tree replacement as a result of development. Current provisions in the Land Use Ordinance (LUO) related to trees and other vegetation are found in Article XIX, Screening and Trees. Regulations focus on three particular areas: 1) protecting trees during construction, particularly large and/or rare specimen trees; 2) using trees for visual screens to separate different classes of land uses; and 3) installing trees for shade within parking areas.

Provisions in Section 15-318 of the LUO, Protection of Trees During Construction, speak to required measures to protect trees during construction and to replace trees greater than 18 inches in diameter which were identified on the plans as being retained but have subsequently died. Subsection 15-318(b) includes more specific requirements as to how a replacement tree must be equivalent of the original tree that it replaces. Provisions in Section 15-319 outline situations where the Town may require a developer to post a security to cover the potential replacement of certain large or rare species trees. Additional recommendations regarding tree protection can be found in Appendix E-1.

Through policies and regulations, the Town has demonstrated consistent efforts to protect and replace trees lost through the development process, including trees lost within a certain number of years after the development

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has been completed. However, the provisions in Section 15-318 were drafted and amended in the mid-to-late 1980s, and technology related to tree planting has changed. Today's tree ordinances typically use a tree canopy cover approach as the measurement for tree replacement with a percentage of canopy cover requirement based on land use.

A draft ordinance that reflects this new approach with requirements based on canopy coverage is being drafted and will be available at the meeting (as Attachment B). Developers in Carrboro could continue to plant street trees and parking lot shade trees as currently required but might also have to plant additional trees to comply with the tree canopy cover ratio. The draft ordinance will also provide updated techniques for planting outlined in Appendix E designed to increase the likelihood of plant survival.

The Board of Aldermen must receive public comment before adopting amendments to the LUO; Planning Board and Orange County review is also needed.

**FISCAL & STAFF IMPACT:** Public hearings involve staff and public notice costs associated with advisory board and Board of Aldermen review.

**RECOMMENDATION:** Staff recommends that the Board of Aldermen consider the attached resolution, setting a public hearing for June 24, 2014 and referring the proposed amendment to Orange County, the Planning Board, the Appearance Commission and the Environmental Advisory Board.

A RESOLUTION SETTING A PUBLIC HEARING ON AN ORDINANCE AMENDING THE CARRBORO LAND USE ORDINANCE TO UPDATE THE TREE PROTECTION AND REPLANTING STANDARDS CONSISTENT WITH CURRENT URBAN FORESTRY STANDARDS.

WHEREAS, the Board of Aldermen seeks to provide ample opportunities for the public to comment on proposed amendments to the Land Use Ordinance;

NOW, THEREFORE BE IT RESOLVED that the Board of Aldermen sets a public hearing on June 24, 2014, to consider adopting “An Ordinance Amending the Carrboro Land Use Ordinance to Update the Tree Protection and Replanting Standards consistent with Current Urban Forestry Standards.”

BE IT FURTHER RESOLVED that the draft ordinance is referred to Orange County, the Town of Carrboro Planning Board and the following Town of Carrboro advisory boards and commissions for consideration and recommendation prior to the specified public hearing date:

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Appearance Commission        | <input type="checkbox"/> Recreation and Parks Commission             |
| <input type="checkbox"/> Transportation Advisory Board           | <input type="checkbox"/> Northern Transition Area Advisory Committee |
| <input checked="" type="checkbox"/> Environmental Advisory Board | <input type="checkbox"/> _____                                       |
| <input type="checkbox"/> Economic Sustainability Commission      | <input type="checkbox"/> _____                                       |

This is the 27<sup>th</sup> day of May in the year 2014.

## **ARTICLE XIX**

### **SCREENING AND TREES**

#### **PART I. SCREENING**

##### **Section 15-304 Board Findings Concerning the Need for Screening Requirements.**

The Board finds that:

- (1) Screening between two lots lessens the transmission from one lot to another of noise, dust, and glare.
- (2) Screening can lessen the visual pollution that may otherwise occur within an urbanized area. Even minimal screening can provide an impression of separation of spaces, and more extensive screening can shield entirely one use from the visual assault of an adjacent use.
- (3) Screening can establish a greater sense of privacy from visual or physical intrusion, the degree of privacy varying with the intensity of the screening.
- (4) The provisions of this part are necessary to safeguard the public health, safety, and welfare.

##### **Section 15-305 General Screening Standards**

Every development shall provide sufficient screening so that:

- (1) Neighboring properties are shielded from any adverse external effects of that development;
- (2) The development is shielded from the negative impacts of adjacent uses such as streets or railroads.

##### **Section 15-306 Compliance with Screening Standards**

(a) The table set forth in Section 15-308, in conjunction with the explanations in Section 15-307 concerning the types of screens, establishes screening requirements that, presumptively, satisfy the general standards established in Section 15-305. However, this table is only intended to establish a presumption and should be flexibly administered, as provided in Section 15-309.

(b) The numerical designations contained in the Table of Screening Requirements (Section 15-308) are keyed to the Table of Permissible Uses (Section 15-146), and the letter designations refer to types of screening as described in Section 15-307. This table indicates the

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type of screening that may be required between two uses. Where such screening is required, only one of the two adjoining uses is responsible for installing the screening; the use assigned this responsibility is referred to as the “servient” use in Section 15-308, and the other use is the “dominant” use. To determine which of the two adjoining uses is required to install the screening, find the use classification number of one of the adjoining uses in the servient column and follow that column across the page to its intersection with the use classification number in the dominant use column that corresponds to the other adjoining use. If the intersecting square contains a letter, then the use whose classification number is in the servient column is responsible for installing that level of screening. If the intersecting square does not contain a letter, then begin the process again, starting this time in the servient column with the other adjoining use.

(c) If, when the analysis described in subsection (b) is performed, the servient use is an existing use, but the required screening is not in place, then this lack of screening shall constitute a nonconforming situation, subject to all the provisions of Article VIII of this ordinance.

(d) Notwithstanding any other provision of this article, a multi-family development shall be required at the time of construction, to install any screening that is required between it and adjacent existing uses according to the table set forth in Section 15-308, regardless of whether, in relation to such other uses, the multi-family development is the dominant or servient use.

**Section 15-307 Descriptions of Screens.**

The following three basic types of screens are hereby established and are used as the basis for the Table of Screening Requirements set forth in Section 15-308.

- (1) **OPAQUE SCREEN. TYPE “A”.** A screen that is opaque from the ground to a height of at least six feet, with intermittent visual obstructions from the opaque portion to a height of at least twenty feet. An opaque screen is intended to exclude completely all visual contact between uses and to create a strong impression of spatial separation. The opaque screen may be composed of a wall, fence, landscaped earth berm, planted vegetation, or existing vegetation. Compliance of planted vegetation screens or natural vegetation will be judged on the basis of the average mature height and density of foliage of the subject species, or field observation of existing vegetation. The opaque portion of the screen must be opaque in all seasons of the year. At maturity, the portion of intermittent visual obstruction should not contain any completely unobstructed openings more than ten feet wide. The portion of intermittent visual obstructions may contain deciduous plants. Suggested planting patterns that will achieve this standard are included in Appendix E.
- (2) **SEMI-OPAQUE SCREEN. TYPE “B”.** A screen that is opaque from the ground to a height of three feet, with intermittent visual obstruction from above the opaque

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portion to a height of at least twenty feet. The semi-opaque screen is intended to partially block visual contact between uses and to create a strong impression of the separation of spaces. The semi-opaque screen may be composed of a wall, fence, landscaped earth berm, planted vegetation, or existing vegetation. Compliance of planted vegetation screens or natural vegetation will be judged on the basis of the average mature height and density of foliage of the subject species, or field observation of existing vegetation. At maturity, the portion of intermittent visual obstructions should not contain any completely unobstructed openings more than ten feet wide. The zone for intermittent visual obstruction may contain deciduous plants. Suggested planting patterns which will achieve this standard are included in Appendix E.

- (3) **BROKEN SCREEN. TYPE “C”.** A screen composed of intermittent visual obstructions from the ground to a height of at least twenty feet. The broken screen is intended to create the impression of a separation of spaces without necessarily eliminating visual contact between the spaces. It may be composed of a wall, fence, landscaped earth berm, planted vegetation, or existing vegetation. Compliance of planted vegetative screens or natural vegetation will be judged on the basis of the average mature height and density of foliage of the subject species, or field observation of existing vegetation. The screen may contain deciduous plants. Suggested planting patterns which will achieve this standard are included in Appendix E.

**Section 15-308 Table of Screening Requirements (AMENDED 06/26/07)**

**[PLEASE REFER TO THE NEXT TEN PAGES]**

**Section 15-309 Flexibility in Administration Required.**

(a) The Board recognizes that because of the wide variety of types of developments and the relationships between them, it is neither possible nor prudent to establish inflexible screening requirements. Therefore, as provided in Section 15-306, the permit-issuing authority may permit deviations from the presumptive requirements of Section 15-308 and may require either more intensive or less intensive screening whenever it finds such deviations are more likely to satisfy the standard set forth in Section 15-308 without imposing unnecessary costs on the developer.

(b) Without limiting the generality of subsection (a), the permit-issuing authority may modify the presumptive requirements for:

- (1) Commercial developments located adjacent to residential uses in business zoning districts.
- (2) Commercial uses located adjacent to other commercial uses within the same zoning district.
- (3) Uses located within planned unit developments.

(c) Whenever the permit-issuing authority allows or requires a deviation from the presumptive requirements set forth in Section 15-308, it shall enter on the face of the permit the screening requirement that it imposes to meet the standard set forth in Section 15-308 and the reasons for allowing or requiring the deviation.

(d) If the permit-issuing authority concludes, based upon information it (or the appearance commission) receives in the consideration of a specific development proposal, that a presumption established by Section 15-308 is erroneous, it shall initiate a request for an amendment to the Table of Screening Requirements in accordance with the procedures set forth in Article XX.

**Section 15-310 Combination Uses.**

(a) In determining the screening requirements that apply between a combination use and another use, the permit-issuing authority shall proceed as if the principal uses that comprise the combination use were not combined and reach its determination accordingly, relying on the table set forth in Section 15-308, interpreted in the light of Section 15-309.

(b) When two or more principal uses are combined to create a combination-use, screening shall not be required between the composite principal uses unless they are clearly separated physically and screening is determined to be necessary to satisfy the standard set forth in Section 15-305. (For example, screening may be required in a residential combination use consisting of single-family and multi-family components.)

*Art. XIX - SCREENING AND TREES***Section 15-311 Landscaping Plan.**

Any person who has been issued a permit under this chapter for any development in a non-residential district involving the construction of new buildings or parking areas or additions to or exterior modifications of existing buildings or parking areas, as well as (i) any similar development in a residential district, if such development requires a special or conditional use permit, shall prepare and file a landscaping plan prior to the issuance of a building permit for such development. No building permit shall be issued for such development until the Appearance Commission has had the opportunity, pursuant to regular agenda procedures, to review and comment upon such landscaping plan. (AMENDED 2/4/86)

**Section 15-311.1 Screening of Flag Lots in the Historic District (HD) (AMENDED 11/21/95).**

Notwithstanding the provisions of Section 15-308, every flag lot in the Historic District (HD) shall provide a Type B screen [as described in Section 15-307 (1)] between the flag lot and adjacent property [see Section 15-175.10(c)].

**Section 15-312 Protective Buffer Along Major Roads (AMENDED 05/25/99; 10/23/07)**

Notwithstanding the provisions of Section 15-308, but subject to the remaining provisions of this section, an undisturbed protective buffer shall be maintained along Old N.C. 86, Dairyland Road, Union Grove Church Road, Homestead Road, Eubanks Road and Smith Level Road south of Ray Road that will help preserve the scenic views and elements of this area. With respect to each property that fronts one of the named streets, any development other than use classification 13.200, Fire Station, that occurs after the effective date of this section shall provide an undisturbed buffer (except for necessary crossings) that is a minimum of 50 feet in width and on average is 100 feet in width along such frontage. If the buffer area does not provide the equivalent of a Type 'A' screen, the developer shall provide a Type 'A' screen on the development's side of the buffer (one hundred (100) feet from the right-of-way)

**Section 15-313 Reserved.**

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**PART II. SHADING AND TREE PROTECTION**

**Section 15-314 Board Findings and Declaration of Policy on Shade Trees.**

- (a) The Board finds that:
- (1) Trees, shrubs, and other plants are proven producers of oxygen, a necessary element for human survival;
  - (2) Trees, shrubs, and other plants appreciably reduce the ever-increasing environmentally dangerous carbon dioxide content of the air and play a vital role in purifying the air we breathe;
  - (3) Trees, shrubs, and other plants precipitate dust and other particulate air-borne pollutants from the air and create temporary conditions of narcosis allowing air-borne pollutants to settle to the ground;
  - (4) Trees, shrubs, and other plants transpire considerable amounts of water each day and thereby purify the air much like the air-washer devices used on commercial air conditioning systems;
  - (5) Trees, shrubs, and other plants have an important role in neutralizing waste water passing through the ground from the surface to ground water tables and lower aquifers;
  - (6) Trees, shrubs, and other plants through their root systems stabilize the ground water tables and play an important and effective part in soil conservation, erosion control, and flood control;
  - (7) Trees, especially large, old trees, provide invaluable beneficial physical, aesthetic, historic, and psychological counterpoint to the urban setting, making urban life more comfortable by providing shade and cooling the air and land, reducing noise levels and glare and breaking the monotony of human developments on the land, particularly parking areas; and
  - (8) For the reasons indicated in subdivision (7), trees, shrubs, and other plants have an important impact on the desirability of land and, consequently, on property values.

**(AMENDED 03/21/89)**

(b) Based upon the findings set forth in subsection (a), the Board declares that it is not only desirable but essential to the health, safety, and welfare of all persons living or working within the town's planning jurisdiction, present and future, to protect certain existing trees and, under the circumstances set forth in this article, to require the planting of new trees in certain types of developments.

*Art. XIX - SCREENING AND TREES***Section 15-315 Required Trees Along Dedicated Streets.**

Along both sides of all newly created streets with respect to which an offer of dedication is required to be made by this chapter, the developer shall either plant or retain sufficient trees so that, between the paved portion of the street and a line running parallel to and fifty feet from the center line of the street, there is for every thirty feet of street frontage at least an average of one deciduous tree that has or will have when fully mature a trunk at least twelve inches in diameter. Trees planted to satisfy this section shall not be placed uniformly but in an irregular pattern with a minimum of one twelve inch (12") diameter tree (when fully mature) every one hundred feet (100'). When trees are planted by the developer pursuant to this section, the developer shall choose trees that meet the standards set forth in Appendix E. **(AMENDED 11/19/96)**

**Section 15-316 Retention and Protection of Large Trees.**

(a) Every development shall retain all existing trees eighteen inches in diameter or more, and all very rare trees of any tree diameter, unless the retention of such trees would unreasonably burden the development. For the purposes of this section, very rare trees include the American Elm, Bald Cypress, Incense Cedar, Ohio Buckeye, Osage Orange, Swamp Chestnut Oak, and Southern Shagbark Hickory, which are either not native to the region, or are native, but occur only in very small numbers in the region, as well as all tree species listed in the North Carolina Natural Heritage Program as being significantly rare, of special concern, threatened, or endangered. When a site would be so unreasonably burdened by the retention of all such trees that a choice must be made as to which trees will be retained, the following criteria shall be used by the applicant, in consultation with the land use administrator and landscape or forestry profession also to evaluate the trees for the purpose of deciding which to retain:

- (1) The rareness of the tree species, both relative to the species representation on the site and relative to the species representation within the region and the state. This shall be the most important criterion in the evaluation;
- (2) The tree's relative size and age, large old trees being considered more valuable than smaller, younger trees of the same species;
- (3) The trees' relative expected longevities, including such factors as the trees' relative health at the time of the evaluation;
- (4) The relative hardiness of the trees in question, including wind firmness, climatic requirements, susceptibility to insects and diseases;
- (5) The trees' relative aesthetic values, including flowers, fruit, form characteristics, potential for autumn coloration;
- (6) The trees' relative sizes at maturity;

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- (7) The trees' relative contribution to summertime comfort through their potential to provide shading.

**(AMENDED 03/21/89)**

(b) No excavation or other subsurface disturbance may be undertaken within the Tree Protection Perimeter around any tree to be retained in accordance with (a) above. For purposes of this Article, the Tree Protection Perimeter is defined as that area within a circle drawn with the tree's trunk as the center and a radius defined by the tree's dripline (which is the perimeter formed by the points farthest away from the trunk of a tree where precipitation falling from the branches of that tree lands on the ground). In addition, no impervious surface (including but not limited to equipment, paving, and structures) may be located within the Tree Protection Perimeter, either during construction or after completion of the development. **(AMENDED 03/21/89)**

(c) There shall be no clearcutting in any development within the Transition Area portion of the Carrboro Joint Development Area as identified in the Joint Planning Agreement. The term "clearcutting" shall refer to the large-scale, indiscriminate removal of trees, shrubs, and undergrowth with the intention of preparing real property for nonagricultural purposes. **(AMENDED 05/25/99)**

(d) If space that would otherwise be devoted to parking cannot be so used because of the requirements of subsections (a) or (b), and, as a result, the parking requirements set forth in Article XVIII cannot be satisfied, the number of required spaces may be reduced by the number of spaces "lost" because of the provisions of subsections (a) and (b), up to a maximum of fifteen percent of the required spaces.

**Section 15-317 Shade Trees In Parking Areas.**

(a) Vehicle accommodation areas that are required to be paved by Section 15-296 must be shaded by deciduous trees (either retained or planted by developer) that have or will have when fully mature a trunk at least twelve inches in diameter. When trees are planted by the developer to satisfy the requirements of this subsection, the developer shall choose trees that meet the standards set forth in Appendix E. **(AMENDED 11/10/81)**

(b) Each tree of the type described in subsection (a) shall be presumed to shade a circular area having a radius of fifteen feet with the trunk of the tree as the center, and there must be sufficient trees so that, using this standard, twenty percent of the vehicle accommodation area will be shaded.

(c) No paving may be placed within 15 feet (measured from the trunk) of any tree retained to comply with subsection (a), unless such tree is eighteen inches or greater in diameter or a very rare species as described in Section 15-316, in which case no paving may be placed within the Tree Protection Perimeter for such trees as described in 15-316(b). New trees planted to comply with subsection (a) shall be located so that they are surrounded by at least 200 square feet of unpaved area. **(AMENDED 5/10/83, 03/21/89)**

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(d) Vehicle accommodation areas shall be laid out and detailed to prevent vehicles from striking trees. Vehicles will be presumed to have a body overhang of three feet six inches.

(e) The foregoing requirements shall not apply to 19.100 classification uses where such uses do not involve the construction of a permanent structure and are conducted not more than two days per week on the site of a vehicle accommodation area that is used primarily in connection with another use. Furthermore, when a 19.100 classification use meeting the foregoing requirements is installed on a lot that is nonconforming with respect to the shading requirements of this section, the lot shall not be required to comply with these shading requirements solely because of installation of such use, even though a new permit applicable to the entire lot may be required. **(AMENDED 9/2/86)**

**Section 15-318 Protection of Trees During Construction.**

(a) The permit recipient shall be responsible for ensuring that all existing trees specifically shown on approved plans as being retained to comply with this article are protected, during the construction process, from removal, destruction, or injury. As described in Appendix A, a tree protection plan detailing the methods for such protection shall be submitted as part of the land use permit application and construction plan package. **(AMENDED 3/12/85; 2/24/87; 03/21/89)**

- (1) The permit recipient shall ensure that, before any excavation takes place on the site, a barrier is erected around the Tree Protection Perimeter of all trees to be retained on the site that are within the area to be disturbed by construction activities, and other provisions made such as are necessary and sufficient to put on notice all construction personnel that the area within the Tree Protection Perimeter of all such large and rare trees are to be retained is not to be disturbed. During the construction process, the permit recipient shall ensure that all activities are kept outside the Tree Protection Perimeter of all such trees. The barrier required by this subsection shall be installed before the issuance of any grading or construction permits for such site.
- (2) The permit recipient shall ensure that all large and rare species trees to be retained on the site that are within the area to be disturbed by construction activities, or near roads within the development, shall be further protected from accidental equipment damage by wrapping their trunks with sections of snow fence or boards wired together from the ground to a height six (6) feet above the ground.
- (3) The permit recipient shall ensure that land disturbing activity shall not occur, and that building materials, construction trailers, vehicles, equipment or machinery, dirt, fill, and/or other debris shall not be stored within the Tree Protection Perimeter of such trees as are to be retained.

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- (4) The permit recipient shall ensure that all such trees as are to be preserved shall not be used as supports for roping, cable, signs, or fencing, and that nails shall not be driven into the trunks of trees.
- (5) The permit recipient shall ensure that any damage done during construction to the limbs or trunks of such large or very rare trees as are to be retained shall be properly treated so as to assure the continued health of the trees. The land use administrator shall be consulted, and may suggest that the applicant seek advice from landscape or forestry professionals as to the appropriate method for such treatment.
- (6) Prior to the commencement of any land alteration on a site for which a Tree Protection Plan has been approved, including all clearing or grading activities, the land use administrator shall certify in writing based on an inspection of the site that all tree protection measures required by the approved Tree Protection Plan have been put in place properly and accurately. The land use administrator shall provide this certification in a timely fashion on being notified by the permit recipient that the site is ready for such inspection and certification. **(AMENDED 03/21/89)**

(b) If a violation of subsection (a) occurs, and as a result a tree or trees greater than eighteen inches in diameter specifically shown on approved plans as being retained die or otherwise must be removed within four years after a certificate of occupancy is granted for that portion of a development on which the trees are or were located, then the permit recipient shall be required to replace such trees with trees of the same species. Each replacement tree shall be at least of tree diameter equivalent in size to one (1) inch per every four (4) inches of tree diameter of the tree it replaces, up to a maximum replacement tree diameter of five inches. In cases where the tree to be replaced had a diameter greater than twenty inches, it shall be replaced by more than one tree, such that the ratio of one inch of replacement tree diameter to four inches of original tree diameter is satisfied, and at least one of the replacement trees is of the maximum replacement tree diameter of five inches. In addition, no replacement tree may be smaller than one inch in diameter. For example, a twenty-eight inch diameter tree would be replaced by one five inch diameter tree and one two-inch diameter tree of the same species. Tree replacement shall be performed by either a landscape contractor or forester licensed to practice in the State of North Carolina, or by an arborist certified by the International Society of Arboriculture or National Arborists Association. Such replacement must take place within one year after the death or removal of the trees occur, and this obligation shall be a continuing condition of the validity of the permit. Violators of the tree protection requirements described in subsection (a) shall be subject to the penalties and remedies for all land use ordinance and land use permit condition violations described in Section 15-114. **(AMENDED 03/21/89)**

(c) If a violation of subsection (a) occurs, and as a result a very rare species tree or trees specifically shown on approved plans as being retained die or otherwise must be removed within four years after a certificate of occupancy is granted for that portion of a development on

***Art. XIX - SCREENING AND TREES***

which the trees are or were located, then the permit recipient shall be required to replace such trees with an equal number of trees of the same species, if available, or of a similar species. The choice of the replacement species, where necessary, shall be made subject to approval by the Town. Each replacement tree shall be at least of tree diameter equivalent in size to one (1) inch per every four (4) inches of tree diameter of the tree it replaces, up to maximum replacement tree diameter of five inches. In cases where the tree to be replaced had a diameter greater than twenty inches, it shall be replaced by more than one tree, such that the ratio of one inch of replacement tree diameter to four inches of original tree diameter is satisfied, and at least one of the replacement trees is of the maximum replacement tree diameter of five inches. In addition, no replacement tree may be smaller than one inch in diameter. For example, a twenty-eight inch diameter tree would be replaced by one five inch diameter tree and one two-inch diameter tree of the same species. Tree replacement shall be performed by either a landscape contractor or forester licensed to practice in the State of North Carolina, or by an arborist certified by the International Society of Arboriculture or National Arborists Association. Such replacement must take place within one year after the death or removal of the trees occur, and this obligation shall be a continuing condition of the validity of the permit. Violators of the tree protection requirements described in subsection (a) shall be subject to the penalties and remedies for all land use ordinance and land use permit condition violations described in Section 15-114. (AMENDED 03/21/89)

**Section 15-319 Performance Security May Be Required (AMENDED 03/21/89; 10/24/06)**

(a) In cases when the land use administrator has reasonable cause to believe that a Tree Protection Plan has been violated, he or she may require that the developer post a security, for the five year period (four years plus one year in which replacement may occur) described in subsections (b) and (c) of section 15-318, to cover the potential replacement of all such large and rare species trees as are called out in the Tree Protection Plan as being protected. The purpose of this security is to ensure that the financial capability will exist, during the full five year period described in subsections (b) and (c) of section 15-318, to replace any large or rare species trees as are called out on a Tree Protection Plan as being protected during construction, and which have died due to construction damage caused by a violation of the Tree Protection Plan.

(b) It is the intent of this section that the removal and replacement of such trees that die due to construction damage shall be arranged by the Town only when the developer cannot be located at the time when the removal and replacement becomes necessary.

(c) The required security shall be in the form of an interest-bearing account or certificate of deposit payable to the Town, in the amount necessary for the removal of all of the large and rare species trees as are called out in the Tree Protection Plan as being preserved, their replacement as described in subsections (b) and (c) of section 15-318, and the one-time violation penalty described in section 15-114 at the time the security is required. At such time as the four year period described in subsections (b) and (c) of section 15-318 is complete, and no deaths of trees called out in the Tree Protection Plan as being preserved have occurred, the security and all interest accrued on it shall revert to the developer. In the event that some but not all of the security amount is used or needed for tree removal and replacement at the end of the four year

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period described in subsections (b) and (c) of section 15-318, the remaining security amount and the interest it has accrued shall revert to the developer at the end of that four year period.

**Section 15-319.1 Regulation of Forestry Activities.**

(a) The terms “forestry,” “forestry activity,” “forestland,” “forest management plan” and “timber harvest” shall be defined by and used in the same manner as in G.S. 160A-458.5.

(b) Notwithstanding any other provisions of this chapter, this chapter does not regulate either:

(1) Forestry activity on forestland that is taxed on the basis of its present-use value as forestland under G.S. Chpt. 105, Art. 12; or

(2) Forestry activity that is conducted in accordance with a forest management plan that is prepared or approved by a forester registered in accordance with G.S. Chpt. 89B.

(c) Notwithstanding subsection (b) above, the Town may deny a zoning, special use, conditional use, or building permit for a tract of land for a period of up to three years after the completion of a timber harvest if the harvest results in the removal from that tract of all or substantially all of the trees protected by this chapter. If the removal of such trees was in willful violation of the requirements of this chapter, then such permits may be refused for a period of five years.

## **Appendix E**

### **SCREENING AND TREES - GUIDE FOR LANDSCAPING (AMENDED 6/22/04)**

- E-1 Guide for Protecting Existing Trees
- E-2 Standards for Street and Parking Lot Trees
- E-3 Formula for Calculating Twenty Per Cent Shading of Paved Vehicle Accommodation Areas
- E-4 Typical Parking Lot Planting Islands
- E-5 Guide for Planting Trees
- E-6 Typical Opaque Screens
- E-7 Typical Semi-Opaque Screens
- E-8 Typical Broken Screens
- E-9 Guide for Planting Shrubs
- E-10 Lists of Recommended Trees and Shrubs
- E-11 Small Trees for Partial Screening
- E-12 Large Trees for Evergreen Screening
- E-13 Large Trees for Shading
- E-14 Small Shrubs for Evergreen Screening
- E-15 Large Shrubs for Evergreen Screening
- E-16 Assorted Shrubs for Broken Screens
- E-17 List of Invasive Plant Species

## **E-1 Guide for Protecting Existing Trees**

Section 15-316 provides for the retention and protection of large trees when land is developed. In order to better ensure the survival of existing trees, the developer should heed the following guidelines:

(a) Protect trees with fencing and armoring during the entire construction period. The fence should enclose an area ten feet square with the tree at the center.

(b) Avoid excavations beneath the crown of the tree as required by Section 15-316(b).

(c) Avoid compaction of the soil around existing trees due to heavy equipment. Do not pile dirt or other materials beneath the crown of the tree.

(d) Keep fires or other sources of extreme heat well clear of existing trees.

(e) Repair damaged roots and branches immediately. Exposed roots should be covered with topsoil. Severed limbs and roots should be painted. Whenever roots are destroyed, a proportional amount of branches must be pruned so the tree doesn't transpire more water than it takes in. Injured trees must be thoroughly watered during the ensuing growing year.

(f) All existing trees which will be surrounded by paving should be pruned to prevent dehydration.

(g) As is stipulated in Section 15-316(b), no paving or other impermeable ground cover should be placed within the dripline of trees to be retained.

## E-2 Standards for Street and Parking Lot Trees

Trees planted in compliance with the requirements of Sections 15-315 and 15-317 should have most or all of the following qualities. The trees recommended in Section E-10 represent the best combinations of these characteristics.

- (a) Hardiness
  - (1) Resistance to extreme temperatures.
  - (2) Drought resistance.
  - (3) Resistance to storm damage.
  - (4) Resistance to air pollution.
  - (5) Ability to survive physical damage from human activity.
- (b) Life Cycle
  - (1) Moderate to rapid rate of growth.
  - (2) Long life.
- (c) Foliage and Branching
  - (1) Tendency to branch high above the ground.
  - (2) Wide spreading habit.
  - (3) Relatively dense foliage for maximum shading.
- (d) Maintenance
  - (1) Resistance to pests.
  - (2) Resistance to plant diseases.
  - (3) Little or no pruning requirements.
  - (4) No significant litter problems.
- (e) Flora Within Planting Strips (**AMENDED 11/19/96**)
  - (1) Match foliage size described in Section E-11 through E-16 with planting strip size.

## E-3 Formula for Calculating 20% Shading of Vehicle Accommodation Areas

Following is an elementary formula for determining the number of shade trees required in and around parking lots in order to presumptively satisfy the shading requirements of Section 15-317.

- |     |   |               |
|-----|---|---------------|
| 1.  | Calculate square footage of the vehicle accommodation area. Include parking spaces, driveways, loading areas, sidewalks, and other circulation areas. Do not include building area and any area which will remain completely undeveloped: | _____ sq. ft. |
| 2.  | Multiply  | x .20         |
| 3.  | Areas to be shaded:   | _____ sq. ft. |
|     | *****   |               |
|     | Add:  |               |
| 4.  | Area shaded by existing trees to be retained in and around the vehicle accommodation area:*   | _____ sq. ft. |
| 5.  | Area shaded by required screening trees, if any:*   | _____ sq. ft. |
| 6.  | Area shaded by required street trees, if any:*  | _____ sq. ft. |
| 7.  | Subtotal:<br>(if line #7 is greater than line #3, then the shading requirement has been met. If not, go on to line #8)  | _____ sq. ft. |
| 8.  | Enter the difference between line #7 and line #3:   | _____ sq. ft. |
| 9.  | Divide line #8:   | ÷ 707         |
| 10. | Total number of shade trees required <u>within</u> the vehicle accommodation area:  | _____ trees   |

---

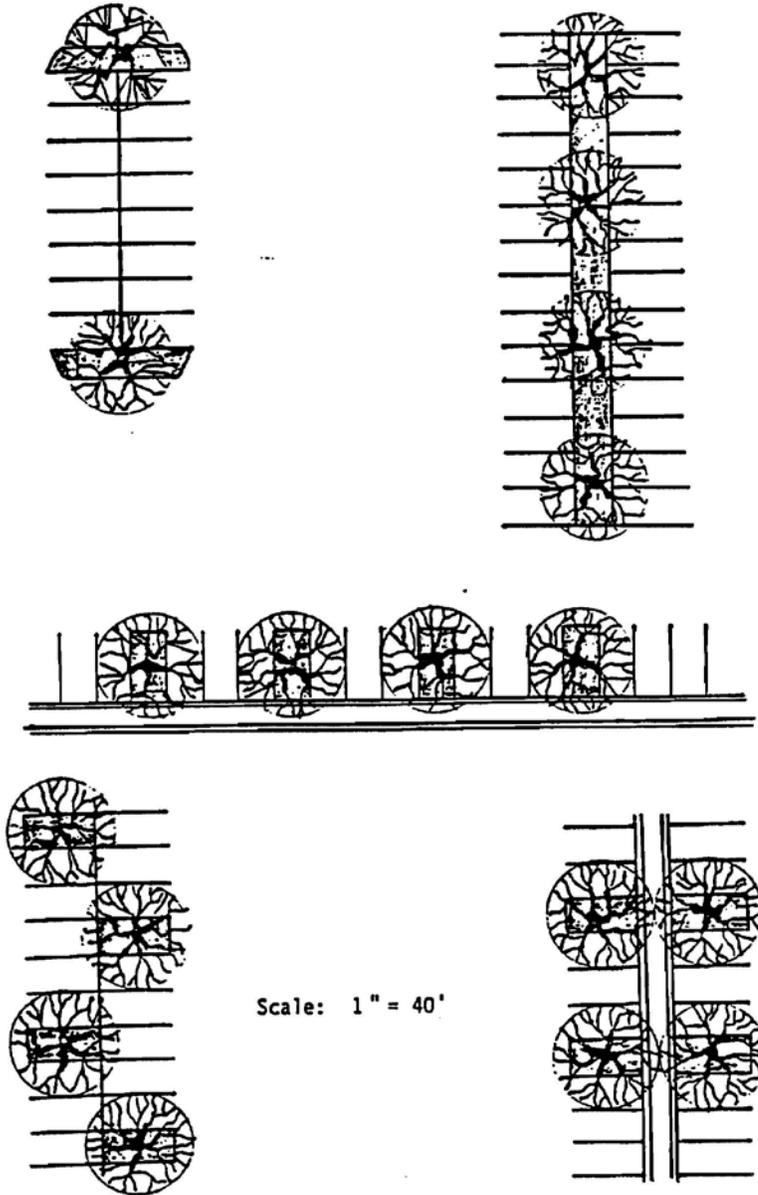
\*Existing trees retained in compliance with Section 15-316 will be credited according to their actual crown radius. Shaded area may be calculated as follows:

$$3.14 \times (\text{crown radius})^2 = \text{shaded area}$$

Trees planted within the vehicle accommodation area are credited with shading 707 sq. ft. (Based on a crown radius of 15) New or existing trees on the perimeter of the parking lot are credited for having only half a crown over the vehicle accommodation area (e.g., new perimeter trees will be credited for shading 354 sq. ft.). Generally, all trees planted in compliance with the screening requirements of Article XIX, Part I and the street tree requirements of Section 15-315 will be considered perimeter trees. When smaller trees such as Dogwoods are planted, the credited shading area will be adjusted downward to 314 sq. ft. for interior trees and 157 sq. ft. for perimeter trees. (Based on a crown radius of 10 ft.)

GUIDE FOR LANDSCAPING

E-4 Typical Parking Lot Planting Islands



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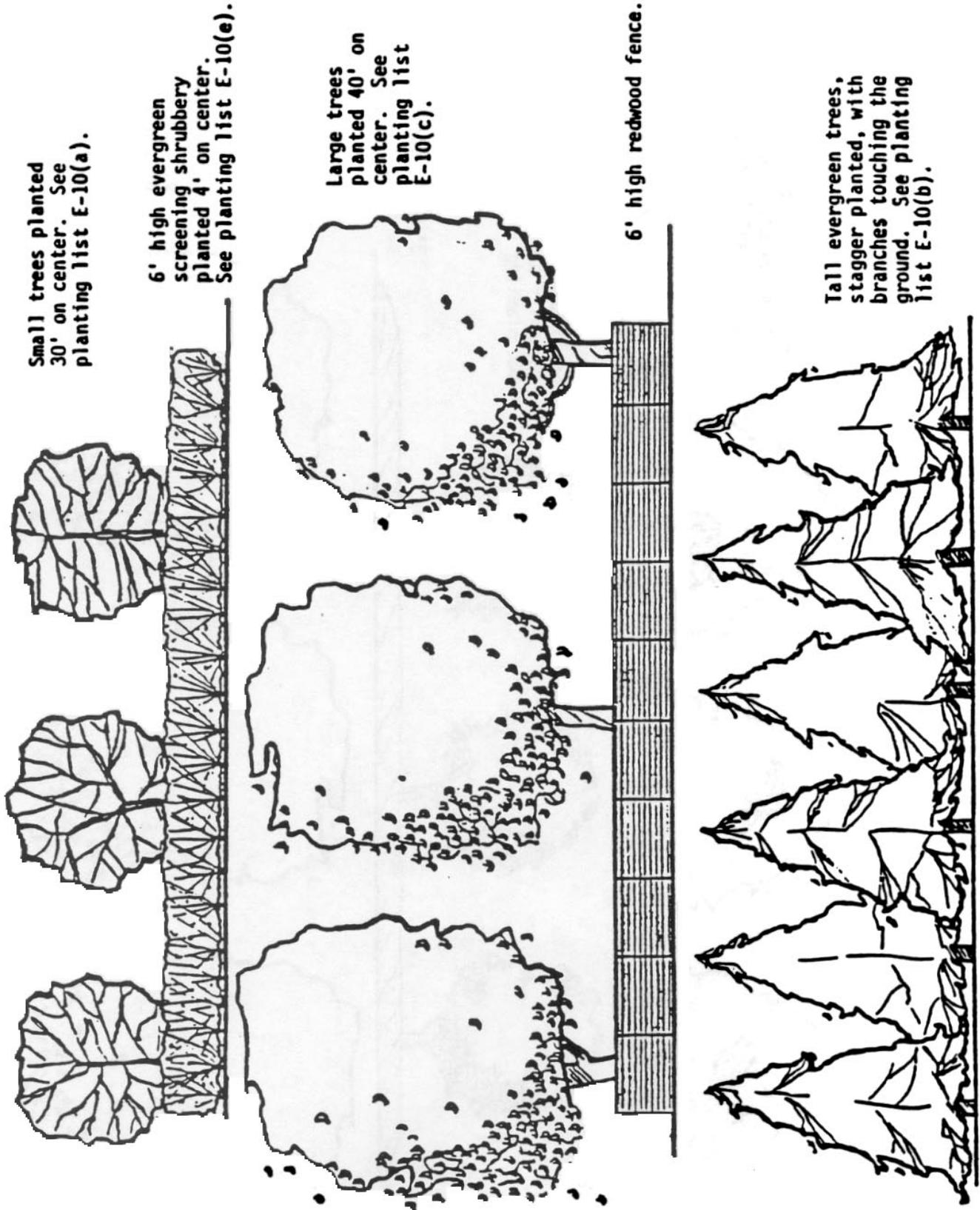
When smaller trees such as Dogwoods are planted, the credited shading area will be adjusted downward to 314 square feet for interior trees and 157 square feet for perimeter trees. (Based on a crown radius of 10 feet.)

## **E-5 Guide for Planting Trees**

The trees recommended in Section E-10 have minimal maintenance requirements. However, all trees must receive a certain degree of care, especially during and immediately after planting. In order to protect an investment in new trees, the developer and his or her agents should follow these guidelines when planting:

- (a) The best times for planting are early spring and early fall. Trees planted in the summer run the risk of dehydration.
- (b) Plant all trees at least three-and-a-half feet from the end of head-in parking spaces in order to prevent damage from car overhang.
- (c) Dig the tree pit at least one foot wider than the root ball and at least six inches deeper than the ball's vertical dimension.
- (d) Especially in areas where construction activity has compacted the soil, the bottom of the pit should be scarified or loosened with a pick ax or shovel.
- (e) After the pit is dug, observe sub-surface drainage conditions. Most soils in the Carrboro area are poorly drained. Where poor drainage exists, the tree pit should be dug at least an additional twelve inches and the bottom should be filled with coarse gravel.
- (f) Backfill should include a proper mix of soil, peat moss and nutrients. All roots must be completely covered. Backfill should be thoroughly watered as it is placed around the roots.
- (g) Immediately after it is planted, the tree should be supported with stakes and guy wires to firmly hold it in place as its root system begins to develop. Staked trees will become stronger more quickly. Remove stakes and ties after one year.
- (h) Spread at least three inches of mulch over the entire excavation in order to retain moisture and keep down weeds. An additional three-inch saucer of mulch should be provided to form a basin around the trunk of the tree. This saucer helps catch and retain moisture.
- (i) The lower trunks of new trees should be wrapped with burlap or paper to prevent evaporation and sun scald. The wrapping should remain on the tree for at least a year.
- (j) Conscientious post-planting care, especially watering, pruning and fertilizing, is a must for street and parking lot trees. Branches of new trees may be reduced by as much as a third to prevent excessive evaporation.

### E-6 Typical Opaque Screens



Small trees planted 30' on center. See planting list E-10(a).

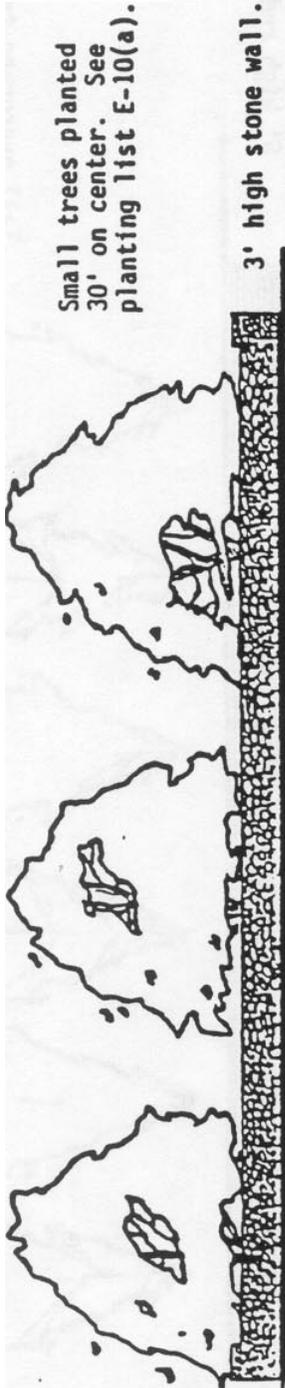
6' high evergreen screening shrubbery planted 4' on center. See planting list E-10(e).

Large trees planted 40' on center. See planting list E-10(c).

6' high redwood fence.

Tall evergreen trees, stagger planted, with branches touching the ground. See planting list E-10(b).

### E-7 Typical Semi-Opaque Screens



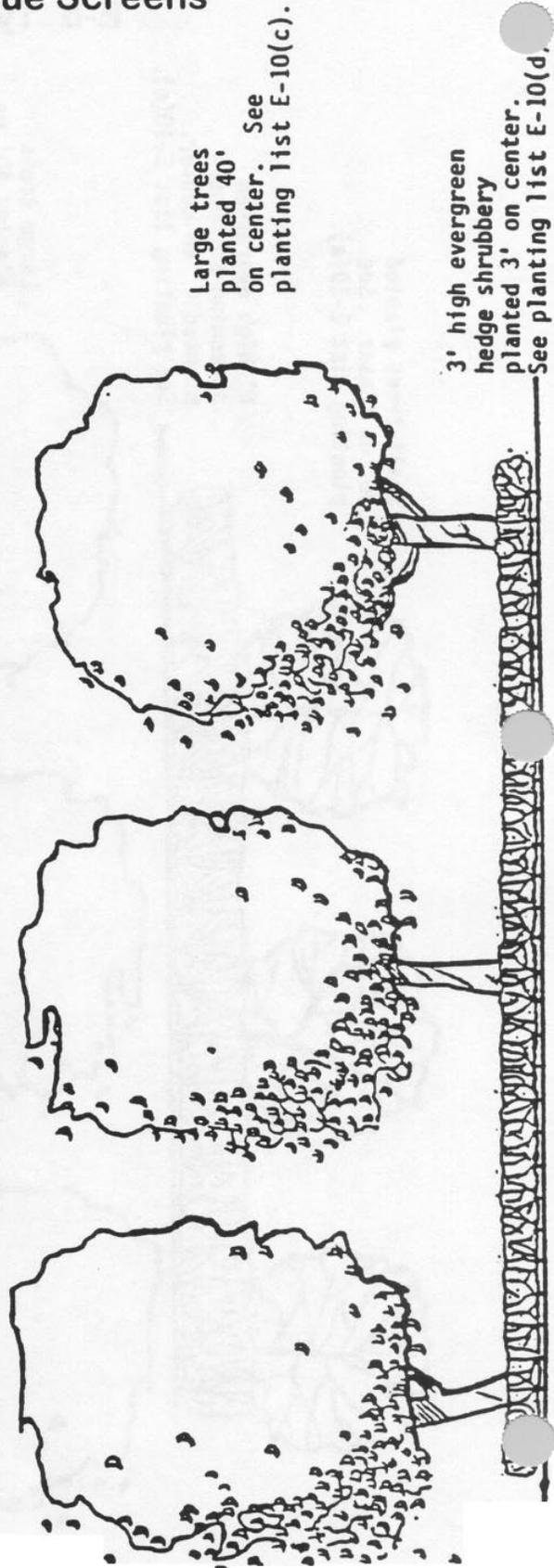
Small trees planted 30' on center. See planting list E-10(a).

3' high stone wall.



Small trees planted 20-30' on center on top of a berm. See planting list E-10(a).

3' high seeded earth berm.



Large trees planted 40' on center. See planting list E-10(c).

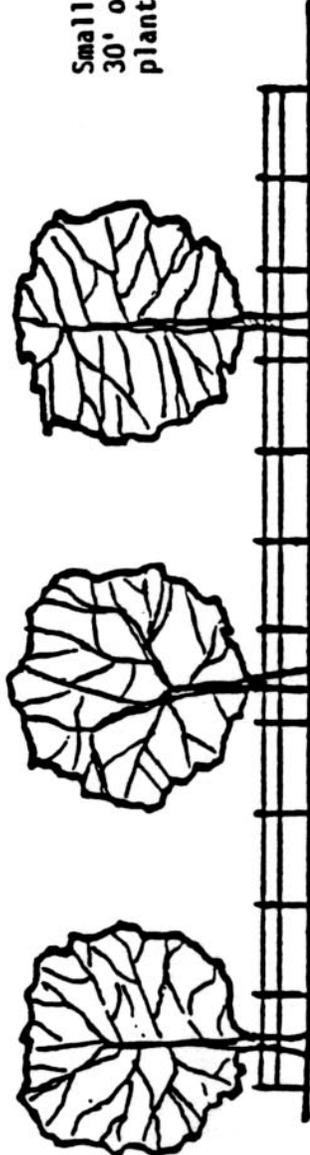
3' high evergreen hedge shrubbery planted 3' on center. See planting list E-10(d).

### E-8 Typical Broken Screens

Small trees planted  
30' on center. See  
planting list E-10(a).



Small trees planted  
30' on center. See  
planting list E-10(a).



Split rail fence.

Large trees  
planted 40'  
on center. See  
planting list  
E-10(c)



Assorted shrubbery.  
See planting list E-10(f).

## E-9 Guide for Planting Shrubs

Shrubs planted for screening purpose should be given a proper culture and sufficient room in which to grow. Many of the guidelines for tree planting listed in Section E-5 also apply to shrubs. However, because specific requirements vary considerably between shrub types, this Appendix does not attempt to generalize the needs of all shrubs. For detailed planting information on individual species, refer to: Landscape Plants of the Southeast by R. Gordon Halfacre and Anne R. Shawcroft. A copy of this book is available in the Carrboro Planning Department or by contacting Sparks Press, P.O. Box 26747, Raleigh, N.C. 27611.

## E-10 Lists of Recommended Trees and Shrubs

The following lists indicate plantings which will meet the screening and shading requirements of Article XIX of the Land Use Ordinance. The lists are by no means comprehensive and are intended merely to suggest the types of flora which would be appropriate for screening and shading purposes. Plants were selected for inclusion on these lists according to four principal criteria: *i.*) general suitability for the Piedmont section of North Carolina; *ii.*) hardiness/tolerance of city conditions; *iii.*) ease of maintenance; and *iv.*) availability from area nurseries. When selecting new plantings for a particular site, a developer should first consider the type of plants which are thriving on or near the site. Accordingly, species native to North Carolina should often be favored. However, if an introduced species has proven highly effective for screening or shading in Piedmont Towns, it too may be a proper selection.

The plantings marked with an (±) on the following lists are appropriate for planting within plantings strips -- as defined under Section 15-216, Subsection (j).

Sections E-11 through E-16 contain descriptions of the trees and shrubs listed here.

### (A) E-11 SMALL TREES FOR PARTIAL SCREENING (AMENDED 6/22/04)

- |                            |  |
|----------------------------|--|
| (1) American Holly         |  |
| (2) American Hop Hornbeam  | (10) Mock Orange                         |
| (3) American Hornbeam ±    | (11) Paw Paw                             |
| (4) American Smoketree     | (12) Serviceberry ±                      |
| (5) Carolina Cherry Laurel | (13) Sourwood ±                          |
| (6) Crabapple (southern)   | (14) Viburnum (except <i>V. opulus</i> ) |
| (7) Eastern Redbud         | (15) Washington Hawthorn                 |
| (8) Flowering dogwood      | (16) Yaupon                              |
| (9) Fringetree             |  |

**(B) E-12 LARGE TREES FOR EVERGREEN SCREENING (AMENDED 6/22/04)**

- |                                 |                       |
|---------------------------------|-----------------------|
| (1) Atlantic White Cedar        | (5) Shortleaf Pine    |
| (2) Eastern Red Cedar           | (6) Southern Magnolia |
| (3) Laurel Oak (listed on E-13) | (7) Virginia Pine     |
| (4) Loblolly Pine               | (8) Longleaf Pine     |

**(C) E-13 LARGE TREES FOR SHADING - The trees on the following list marked with an (\*) are appropriate selections to satisfy Section 15-315, Required Trees Along Dedicated Streets (AMENDED 6/22/04)**

- |                          |                           |
|--------------------------|---------------------------|
| (1) Basswood             | (9) Southern Catalpa      |
| (2) Chestnut Oak         | (10) Southern Sugar Maple |
| (3) Cucumber Tree        | (11) Swamp Chestnut Oak   |
| (4) Ginkgo (male only) * | (12) Swamp White Oak      |
| (5) Laurel Oak *         | (13) Sycamore             |
| (6) Post Oak             | (14) Tulip Poplar *       |
| (7) Red Oak (Eastern) *  | (15) White Oak            |
| (8) Scarlet Oak *        | (16) Willow Oak *         |

**(D) E-14 SMALL SHRUBS FOR EVERGREEN SCREENING (AMENDED 05/25/99, 6/22/04)**

- |   |                                     |
|---|-------------------------------------|
| (1) Convexa Japanese Holly                | (7) Otto Lukeyn Laurel <sup>±</sup> |
| (2) Dwarf Horned Holly                    | (8) Poet's Laurel                   |
| (3) Glossy Abelia                         | (9) Warty Blueberry                 |
| (4) Ilex verticillata (Winterberry Holly) | (10) **Carolina Jessamine           |
| (5) Indian Hawthorn <sup>±</sup>          | (11) **Trumpet Honeysuckle          |
| (6) Japanese Yew                          | (12)                                |

\*\*Vines - which if grown on a trellis would make a nice evergreen screen.

**(E) E-15 LARGE SHRUBS FOR EVERGREEN SCREENING (AMENDED 6/22/04)**

- |   |   |
|---|---|
| (1) Anise Bush <sup>±</sup>             | (6) Loblolly Bay                          |
| (2) Carolina Cherry-Laurel <sup>±</sup> | (7) Loropetalum <sup>±</sup>              |
| (3) Cleyera <sup>±</sup>                | (8) Red Bay                               |
| (4) English Laurel                      | (9) Schipka Laurel                        |
| (5) Fortune Tea Olive                   | (10) Southern Wax Myrtle                  |
|   | (11) Yaupon Holly (standard) <sup>±</sup> |

**(F) E-16 ASSORTED PLANTINGS FOR BROKEN SCREENS (AMENDED 5/25/99, 6/22/04)**

- |  |  |
|--|--|
| (1) Beautyberry <sup>±</sup>           | (11) Judd Viburnum                       |
| (2) Blueberry                          | (12) Oakleaf Hydrangea                   |
| (3) Button Bush                        | (13) Rhododendron                        |
| (4) Carolina Allspice (Sweetshrub)     | (14) Smoketree                           |
| (5) Carolina Rose                      | (15) Star Magnolia (tree)                |
| (6) Clethra                            | (16) Sumac                               |
| (7) Devil's Walking Stick              | (17) Viburnum (except <i>V. opulus</i> ) |
| (8) Drooping Leucothoe                 | (18) Witch Hazel (Common)                |
| (9) Fringetree                         | (19) Witch Hazel (Vernal) <sup>±</sup>   |
| (10) Japanese Flowering Apricot (tree) |  |

The following plant species shall be prohibited when complying with the shading and landscaping provisions of this chapter. **(AMENDED 6/22/04).**

<b>Species (Latin)</b>	<b>Common Name</b>
Akebia quinata	Chocolate vine
Acer ginnala	Amur Maple
Acer platanoides	Norway Maple
Ailanthus altissima	Tree of Heaven
<b>Albizia julibrissin</b>	<b>Mimosa</b>
Ampelopsis brevipedunculata	Porcelainberry
Baccharia halimifolia	Baccharus spp
All Berberis species including	
Berberis julianae	Wintergreen Barberry
Berberis thunbergii	Japanese Barberry
Broussonetia papyrifera	Paper Mulberry
Celastrus orbiculatus	Bittersweet
All Cotoneaster species including	
Cotoneaster microphyllus	Littleleaf Cotoneaster
Cotoneaster horizontalis	Rockspray Cotoneaster
Crataegus monogyna	Singleseed Hawthorn
Crataegus laevigata	English Hawthorn
All Cytisus scoparius	Scotch Broom
Eleagnus angustifolia	Russian Olive
Eleagnus umbellata	Autumn Olive
Euonymus alatus	Winged Euonoymus, Burning Bush
Euonymus japonicus	Japanese Euonymus
Firmiana simplex	Chinese Parasol Tree

<b>Species (Latin)</b>	<b>Common Name</b>
Hedera helix	English Ivy
All Ligustrum species including	
Ligustrum japonicum	Japanese Privet
Ligustrum lucidum	Waxleaf Privet
<b>Ligustrum obtusifolium</b>	<b>Border Privet</b>
Ligustrum vulgare	European Privet
Ligustrum sinense	Chinese Privet
Ligustrum x vicari	Golden Vicary Privet
Lonicera japonica	Japanese Honeysuckle
Lonicera maackii	Bush Honeysuckle
Lonicera nitida	Boxleaf Honeysuckle
Lonicera tatarica	Tatarian Honeysuckle
Miscanthus sinensis	Eulalia, Maiden Grass
Mahonia <b>repens</b>	Oregon Grape
<b>Morus alba</b>	<b>White Mulberry</b>
Paulownia tomentosa	Princess Tree
<b>Phyllostachys aurea</b>	<b>Golden Bamboo</b>
<b>Populus alba</b>	<b>White Poplar</b>
<b>Spirea Japonica</b>	<b>Japanese Meadowsweet</b>
Taxus cuspidata	Japanese Yew
Viburnum opulus	European Cranberrybush Viburnum
Vinca major	Large Periwinkle
Vinca minor	Common Periwinkle
Wisteria <b>sinensis</b>	Chinese Wisteria
Wisteria japonica	Japanese Wisteria

## **E-11 Small Trees for Partial Screening (Amended 6/22/04)**

The following trees are recommended for use in all types of screens. Though smaller than the trees listed in planting lists E-12 and E-13, each of these trees will reach a height of at least 20 feet. Selections marked with an (\*) are also recommended as shade trees and may be credited for meeting the 20% shading requirement for paved parking lots.

### **AMERICAN HOLLY (*Ilex opaca*) Height: 15-30'; Spread: 10-20'**

This familiar native tree possesses a pyramidal evergreen crown with abundant red berries in the winter. It grows best in full sun and prefers moist yet well drained soils. If the lower limbs are allowed to grow naturally, they will branch to the ground. Hollies should be protected from high winds. The American Holly is a relatively slow grower.

### **AMERICAN HOP HORNBEAM (*Ostryga virginiana*) Height: 40 to 50 feet; Spread: 20 to 30 feet**

Hophornbeam is a small short-lived understory tree in moist, well-drained forests. It has a slow to medium growth rate on a great variety of soils. It develops a finely branched round crown and is an attractive landscape tree that provides wildlife with a limited amount of seed. Fruit

### **\*AMERICAN HORNBEAM (*Carpinus carolinia*) Height: 20-30'; Spread: 15-20'**

This native tree has a natural yet refined appearance. It is slow growing, but at maturity it serves as an excellent small shade tree. Its fluted, "muscular" trunk is an interesting feature. In the wild, the American Hornbeam is common in moist rich soil, yet, when used in landscape design, it is soil tolerant and does not require an unusual amount of water. It has no pests and no special maintenance problems.

### **AMERICAN SMOKETREE (*Cotinus obovatus*) Height: 15 feet; Spread: 15 feet**

Smoketree is a small tree found on upland sites. This tree is planted as an ornamental for the attractive fruit that are presented on a feathery, hairy stalk, which gives a smoke-like appearance.

### **BLACK HAW (*Viburnum prunifolium*; *V. dentatum*) Height: 12 to 15 feet; Spread: 8 to 12 feet**

Black Haw is a small tree with twisted trunk and arching branches with an overall round crown appearance. Does best on partially sunny sites on moist, well-drained soils.

### **CAROLINA CHERRY-LAUREL (*Prunus caroliniana*) Height: 20-30'; Spread: 15-20'**

This tree is prized for its dense evergreen foliage. It may be trimmed as a hedge, but also serves as an excellent screen in its natural form. The Cherry-Laurel grows rapidly and has no pests. However, it may not be as cold hardy as other trees on this list.

### **CRABAPPLE, SOUTHERN (*Malus*) Height: 15'-30'; Spread 10-20'**

Slow to moderate growers, with springtime flowers in colors ranging from pink to red to white. Birds are fond of fruit. Care should be taken when choosing a specific variety to make certain that it is disease resistant. Some disease resistant varieties include 'Adams', 'Callaway', and 'Sentinel'.

**EASTERN REDBUD (*Cercis canadensis*) Height: 20-30'; Spread: 12-25'.**

This native tree is covered by beautiful pink flowers in the Spring and develops a dense round crown when allowed to grow in direct sunlight. The Redbud has some pests, and its fruit pods may present a litter problems, but it recommends itself by being drought resistant and tolerant of polluted city air.

**\*FLOWERING DOGWOOD (*Cornus florida*) height: 15-30'; Spread: 15-20'.**

The Dogwood is a native woodland tree which is very popular for landscape planting. It is considered to be a fairly hardy tree, but, when planted in direct sun, it must be frequently watered. A healthy Dogwood will develop attractive horizontal branches and bushy crown. Dogwoods look best when planted in groups or when used as an accent in borders. These trees should be guarded against borers and other pests.

**FRINGE TREE (*Chionanthus virginiana*) Height: 12 to 20 feet; Spread:12 to 20 feet**

Fringe-tree is a short trunk tree with a narrow, oblong crown found on moist soils. It is a popular ornamental because of the white fringe-like drooping white flower clusters in May and June that mature into inch-long blue-black fruit in September and October.

**MOCK ORANGE (*Philadelphus inodorus* or other native cultivars) Height:3 to 6 feet; Spread: 3 to 9 feet**

Mock Orange is a deciduous short shrub, suitable on a range of soil conditions along streams and bluffs, cliffs, and rocky banks, with full sun to partial shade. Best used as part of a shrub border or an edge to natural areas. Fragrant white flowers in spring on spreading branches that twist around each other and arch to the ground.

**PAW PAW (*Asimina triloba*) Height: 15 to 40 feet; Spread: 15 to 30 feet**

Pawpaw is an understory species found on moist, well-drained sites that has a tropical appearance in the landscape. Purplish-brown, broad bell shape flowers appear with or slightly before the leaves. Fall ripening fruit resemble a short, fat banana, that is very fleshy, tastes like a banana, and eaten by squirrel, fox, raccoon and small animals.

**SERVICEBERRY (*Amelanchier canadensis*) Height: 10'-20'; Spread 8-15'**

An upright shaped tree with a moderate growth rate. Serviceberry will thrive in sun or partial shade. White springtime flowers. Tolerant of most soil types, Serviceberry looks good planted along the edge of woods.

**SOURWOOD (*Oxyndrum arboreum*) Height: 20-30'; Spread: 10-15'.**

Sourwoods are handsome native trees which are most effective in landscape design when planted in groups. They are easy to transplant and as each tree matures it assumes a slender form with upright branches. Sourwood prefers relatively dry acid soils. Its only special maintenance problems may be infestations of webworms.

**WASHINGTON HAWTHORN (*Crataegus phaenophyrum*) Height: 25-30'; Spread: 25-30'.**

Hawthorns generally require spraying to prevent disease and insect infestation. However, they are an excellent choice for screening because of their extremely dense and thorny branches. They have proven to be excellent as a headlight screen on highway medians and, when planted close together, they form an

impenetrable living fence. They prefer sun and are tolerant to most types of soil. The Washington Hawthorn is generally considered to be the best of the Hawthorns.

**YAUPON (*Ilex vomitoria*) Height: 15 to 20 feet; Spread: 10 to 20 feet**

Yaupon is an upright evergreen shrub that forms thickets with numerous stems and branches. It grows well in full to partial shade and adapted to wet and dry sites. Small white flowers in spring yield to small shiny red berry clusters on the stems in the fall. Deer browse the foliage and fruit are eaten by birds and small mammals.

## **E-12 Large Trees for Evergreen Screening (Amended 6/22/04)**

The following trees are ideal for screening large scale areas such as shopping centers and industrial sites. They are also effective in combination with other, smaller screening plants. All three are moderate to fast growers. They are not considered to be shade trees.

### **ATLANTIC WHITE CEDAR (*Chamaecyparis thyoides*) Height: 40 to 50; Spread 10 to 20 feet**

Atlantic White Cedar is a tall, slender columnar tree; that loses lower branches with age. It grows best in wet sites with full sun. Bluish green needles appear flattened and arranged in irregular sprays with pointed tips. Bluish purple cones are quarter-inch long.

### **EASTERN RED CEDAR (*Juniperus virginiana*) - Height 60'; Spread 15-20'**

This is a native evergreen tree that is very hardy in the area. Mature specimens have interesting bark. Has waxy fruit that birds enjoy. Slow growth.

### **LAUREL OAK (*Quercus laurifolia*) Height: 40-60'; Spread: 30'+.**

The Laurel Oak grows more slowly than the other Oaks listed above, but it has the advantage of being nearly evergreen in Piedmont sections of North Carolina. It has proven to be a good street tree and does quite well under city conditions. It presents no special maintenance problems.

### **LOBLOLLY PINE (*Pinus taeda*) - Height 50 to 90; Spread 30 to 40 feet**

Loblolly pine grows well on moderately acid soils with poor surface drainage and full sun. It is initially pyramidal until the crown becomes rounded with horizontal branches following the loss of lower branches. Excellent fast growing species for rapid vegetative screening.

### **LONGLEAF PINE (*Pinus palustris*) - Height 80 to 100; Spread 30 to 40 feet**

Longleaf pine is found on well-drained sandy soils and on swamp edges and requires full sun. In the Piedmont, it rarely attains mature height due to susceptibility to ice storm damage, wind, lightning, high winds, and drought. It is also a nesting tree for red-cockaded woodpecker. It is slow to establish and grows in "grass like" stage for first 5 years.

### **SHORTLEAF PINE (*Pinus echinata*) Height 80 to 100; Spread 30 feet**

Shortleaf pine is a medium-sized, native, evergreen conifer with relatively short needles and thin, flaky, black bark that becomes reddish brown with age. Shortleaf pine is suitable to sunny sites and a variety of soils. It is a medium to large tree with an initial small, open, pyramidal crown that becomes a small narrow crown with age.

### **SOUTHERN MAGNOLIA (*Magnolia grandiflora*) Height: 40-60'; Spread: 25'+.**

Magnolias are striking trees which serve well as screens when their branches are allowed to grow to the ground. Generally, the tree does well in city conditions, but it should be planted in quite rich acidic soils

and it requires a lot of moisture. Furthermore, Magnolias require ample space for growth. If planted in full sunlight, they will grow rapidly. Because it drops large waxy leaves, seed pods, and flowers, the Magnolia may present a litter problem.

**VIRGINIA PINE (Pinus virginiana) - Height 60'; Spread 25-35'.**

A native of the area, Virginia Pine is a short needled tree that is very tolerant of clay soils. More resistant to winter weather conditions than Loblolly Pine.

## **E-13 Large Trees for Shading (Amended 6/22/04)**

The following trees may be used for screening, but they are recommended especially for shading streets and parking lots. Unless otherwise noted, they will grow rapidly. Each species will attain a mature spread of at least thirty feet. The trees on the following list marked with an “\*” are appropriate selections to satisfy Section 15-315, Required Trees Along Dedicated Streets.

### **CHESTNUT OAK (*Quercus montana*; *Q. prinus*) Height: 60 to 70 feet; Spread: 50 to 70 feet**

Chestnut oak is a medium-sized, native, deciduous, tree that is suited to dry, infertile, rocky upland sites, yet grows best on rich well-drained soils along streams. At maturity, it is a medium-sized long-lived tree with an irregular dense crown. The sweet acorns are an important food for many wildlife species including deer, turkeys, squirrels, chipmunks, and mice, while small birds, mammals, and bees use chestnut oak cavities for nesting

### **CUCUMBER TREE (*Magnolia acuminata*; *M. Fraserii*) Height: 50 to 80 feet; Spread: 50 to 80 feet**

Cucumber tree is the most widespread and hardiest of the eight native magnolia species. It grows fairly rapidly and well in rich, moist soils of slopes and valleys and matures in 80 to 120 years. This park-like tree is planted as an ornamental for its attractive leaves, flowers, and cucumber-shaped fruit, producing seeds that are eaten by birds and small mammals. Its shape is pyramidal when young, developing a straight trunk and a rounded crown.

### **\*EASTERN RED OAK (*Quercus rubra*) Height: 50-70'; Spread: 40'+.**

This tree grows faster than any other Oak, two feet or more per year. It is prized as a street tree because its high branching habit gives it an ideal shape. The Red Oak grows in almost any average soil and presents no special maintenance problems.

### **\*GINKGO OR MAIDENHAIR TREE (*Ginkgo biloba*) Height: 40-80'; Spread: 30'+.**

The Ginkgo is a tree which is recommended for several outstanding reasons. It is one of the oldest surviving species of trees. It is adaptable to any soil, climate, or degree of exposure to the sun. It does quite well in the city. It has no pests, no diseases, and no pruning requirements. In sum, it is a tree of exceptional vitality. The N.C. Department of Forest Resources calls the Ginkgo, probably the best all around street tree. Two reservations are worth stating, however. First, only male trees should be planted because female Ginkgos bear a messy, malodorous fruit. Second, the Ginkgo is a slow grower. When young, it has a rather gangly appearance. It takes 20 to 30 years to assume its mature, symmetrically spreading form.

### **\*LAUREL OAK (*Quercus laurifolia*) Height: 40-60'; Spread: 30'+.**

The Laurel Oak grows more slowly than the other Oaks listed above, but it has the advantage of being nearly evergreen in Piedmont sections of North Carolina. It has proven to be a good street tree and does quite well under city conditions. It presents no special maintenance problems.

**POST OAK (*Quercus stellata*) Height: 40 to 50 feet; Spread: 35 to 50 feet**

Post oak is a small to medium-sized tree with a crown that has snarled and twisted branches and found on upland sites with full sun. This slow-growing drought resistant oak typically occupies rocky or sandy ridges and dry woodlands with a variety of soils. Acorns provide high-energy wildlife food during fall and winter for wild turkey, white-tailed deer, and squirrels, and provide habitat for birds and mammals. Post oak can be a beautiful shade tree for parks and to stabilize soil on dry, sloping, stony sites where few other trees will grow. It develops an attractive crown with strong horizontal branches.

**\*SCARLET OAK (*Quercus Coccinea*) Height: 60-80'; Spread: 40'+.**

This is a third Oak which grows rapidly and is easy to maintain. The Scarlet Oak is more difficult to transplant than the Red or the Willow, but it may be a worthwhile selection for its excellent foliage

**SOUTHERN CATALPA (*Catalpa bignonioides*) Height: 25 to 40 feet; Spread: 20 to 30 feet**

Catalpa is a medium-sized tree with spreading branches, an irregular crown, and generally crooked bole that is suited to moist, well-drained soils with full sun. The flowers and leaves make this an interesting landscape tree but the fruit can be messy.

**SOUTHERN SUGAR MAPLE (*Acer saccharum*; *A. barbatum*) Height: 20 to 25 feet; Spread: 20 to 40 feet**

Sugar maple grows on moist, well-drained soils and is very tolerant of shade. Seeds are eaten by birds and small animals. A popular ornamental for the fall color, Sugar Maple at maturity is a medium to tall tree with very dense elliptical crown.

**SWAMP CHESTNUT OAK (*Quercus michauxii*) Height: 60 to 70 feet; Spread: 50 to 70 feet**

Swamp chestnut oak grows in full sun on moist and wet loamy soils of bottomlands, along streams and borders of swamps, tolerates saturated or flooded soils for a few days to a few weeks. The acorns are sweet and serve as food to wildlife. The crown is round, compacted, and narrow.

**SWAMP WHITE OAK (*Quercus bicolor*) Height: 50 to 60 feet; Spread: 50 to 60 feet**

Swamp white oak is a medium sized tree with an irregular crown suitable to river bottomlands, depressions, swamp borders, and along edges of streams. It is rapid growing and long lived, attaining 300 to 350 years. Many kinds of wildlife eat the acorns, particularly ducks. Swamp white oak is intermediate in shade tolerance but not very drought tolerant.

**SYCAMORE (*Platanus occidentalis*) Height: 70-100'; Spread: 60'+.**

The Sycamore is probably the fastest growing shade tree on this list. Within ten years, it can grow to a height of between thirty and forty feet. It is easily transplanted, but it needs plenty of space. As one of nature's most massive trees, Sycamores have been known to grow to a height of 170 feet with a trunk 10 feet across. The Sycamore is a native tree which typically grows in flood plains, but it thrives in a variety of situations. Its tolerance of severe conditions has long made it a favorite choice as a street tree. Sycamores are susceptible to fungi and leaf blight and their large leaves and seed balls may present a litter problem.

**\*TULIP POPLAR (Liriodendron tulipifera) - Height 60'-150'; Spread 30-40'.**

Very common in eastern woodlands, this is a rapidly growing tree with colorful yellow leaves in Fall. Spring flowers, however, are not very noticeable. Difficult to transplant except when young. Excellent street tree.

**WHITE OAK (Quercus alba) Height: 60 to 100 feet; Spread:50 to 90 feet**

White oak is found on fertile, moist, well-drained soils under partial sun. Acorns are eaten by game birds, deer, bear, and many small mammals. Pyramidal in youth, this species matures into a rugged, irregular crown that is wide spreading, with a stocky bole. While this species is potentially valuable for use in reforestation projects, it is not recommended near paved areas.

**\*WILLOW OAK (Quercus phellos) Height: 60-80'; Spread: 30'+.**

This is another rapidly growing Oak. It has proven to be quite successful as a street and parking lot tree in the Carrboro area. Its slender leaves give it a finer texture than that of other Oaks, but it still casts excellent shade. The Willow Oak is native to bottomland soils, and thus it needs plenty of moisture. It often spreads majestically as it matures so it should be given ample room to grow. No significant pests or diseases afflict the Willow Oak.

## **E-14 Small Shrubs for Evergreen Screening (Amended 6/22/04)**

The following shrubs are recommended for informal (unclipped) hedges or screens. Each species grows to a height of less than six feet; therefore, these shrubs are appropriate for Semi-Opaque Screens.

### **CAROLINA JESSAMINE\* (*Gelsemium sempervirens*) - Height up to 20'; Spread varies.**

A moderate growing, mostly evergreen vine that grows very well on fences. Fragrant yellow flowers in springtime. Prefers sun or partial shade. All parts of this plant are poisonous.

### **CONVEXA JAPANESE HOLLY (*Ilex crenata* 'convexa') Height: 4-6'; Spread: 3-5'.**

The Convexa Japanese Holly is another good Boxwood substitute. This shrub is considered to be one of the most attractive, hardy and serviceable Hollies for landscape use. It is attractive in either a clipped or unclipped form. It grows faster than the Littleleaf Japanese Holly.

### **DWARF HORNED HOLLY (*Ilex cornuta* 'rotunda') Height: 3'; Spread: 3-4'.**

This shrub is an excellent selection for a low hedge. It is soil tolerant and requires no pruning or other special care once established. With its spiny leaves, this plant appears to be and is in fact rugged. Like all Hollies, it grows best in full sun, but unlike others of its species, it produces bright red berries without both sexes being present.

### **GLOSSY ABELIA (*Abelia grandiflora*) Height: 4-6'; Spread: 3-5'.**

Abelia is quite common in local nurseries and tends to be less expensive than other shrubs on this list. It bears pale pink flowers throughout the summer. Although it has proven quite popular for informal hedges, it has several drawbacks. Abelia should be pruned and thinned to maintain its best form. It may drop its leaves due to low temperatures, lack of pruning, or starvation.

### **INDIAN HAWTHORN (*Raphiolepis indica*) Height: 3-4'; Spread: 4-5'.**

With its spreading, irregular branching, the India Hawthorn makes an excellent informal hedge. It is tolerant of a variety of soils and is fairly drought resistant. However, it may not be as cold tolerant and pest resistant as other shrubs on this list.

### **JAPANESE YEW (*Taxus cuspidata*) Height: 4-6'; Spread: 5-7'.**

The versatile Yew is commonly available from local nurseries in a wide variety of sizes and shapes. The Japanese Yew serves as excellent screening material in either a clipped or unclipped form. It tolerates poor growing conditions and flourishes in almost any kind of soil. (Soggy soil may hamper its growth, however.) It is comparatively pest free and is hardy under trying winter conditions. The Yew's best feature is its rich shiny green needles which grow densely on all varieties.

### **OTTO LUKEYN LAUREL (*Prunus laurocerasus* var. 'Otto Lukeyn') - Height 4'; Spread 4-7'.**

A cold hardy, broad leaved evergreen shrub. Prefers sun, but will grow in fairly shady conditions. Good green color even in winter. This is a shorter growing variety of the Schipka Laurel.

**POET'S LAUREL (*Danae racemosa*) Height: 2 to 3 feet; Spread: 2 to 3 feet**

Poet's Laurel prefers partial to full shade, moist, well-drained soil enriched with organic matter; but does tolerate clay soils. It has an open growth habit with slender branches that arch up and away from center of crown. It can spread by rhizomes. While foliage discolors in sun; it can be long-lasting for flower arrangements.

**TRUMPET HONEYSUCKLE\* (*Lonicera sempervirens*) - Height up to 50'; Spread varies.**

A rapid growing, mostly evergreen vine with beautiful orange to red to yellow flowers occurring in late spring and throughout the summer. Best in full sun.

**WARTY BARBERRY (*Berberis verruculosa*) Height: 3-4'; Spread: 3-4'.**

Barberrys as a group have proven to be excellent as hedge plants. With their dense, spiny limbs, they are effective barriers in public places. The Warty Barberry is a shrub with a neat, compact habit. It is soil tolerant and has no special maintenance requirements. It grows slowly, but it will reach a height of 3 to 4 feet within five years.

**WINTERBERRY HOLLY (*Ilex verticillata*) Height: 6 to 15 feet; Spread: 6 to 10 feet**

With a slow to moderate growth rate, this species is suited to partial to full sun on moist soils, but can tolerate drought. Early summer brings small white flowers that mature into dense clusters of bright red berries.

**WINTERGREEN BARBERRY (*Berberis julianae*) Height: 4-6'; Spread: 2-5'.**

This is another Barberry which forms an impenetrable thorny hedge. In fact, it grows even more densely than the Warty Barberry. It is pest resistant and is very hardy. No pruning is required. Because it is fairly slow growing, it will take eight to ten years to reach a height of 5 to 6 feet.

Note: \* Vines - which if grown on a trellis would make a nice evergreen screen.

## **E-15 Large Shrubs for Evergreen Screening (Amended 6/22/04)**

The following shrubs are recommended for high hedges or screens. Each species grows to a height of more than 6 feet; therefore, these shrubs are appropriate for Opaque Screens.

### **ANISE BUSH (*Illicium anisatum*) - Height 8-12'; Spread 8-10'.**

moderate growing, evergreen shrub with an open habit. Small flowers appear in mid-Summer. Prefers a fair amount of moisture, with partial to full sun. Subject to damage during very cold winters.

### **CAROLINA CHERRY-LAUREL (*Prunus caroliniana*) Height: 20-30'; Spread: 15-20'.**

This tree is prized for its dense evergreen foliage. It may be trimmed as a hedge, but also serves as an excellent screen in its natural form. The Cherry-Laurel grows rapidly and has no pests. However, it may not be as cold hardy as other trees on this list.

### **CLEYERA (*Cleyera japonica*) - Height 8-10'; Spread 5-6'.**

A slow-moderate growing evergreen shrub. Its new foliage is reddish in color, like the Photinia. However, unlike the Photinia, Cleyera is much more disease resistant and thus a better option. Prefers shade or partial shade, with moist, but well drained soil.

### **ENGLISH LAUREL (*Prunus laurocerasus*) - Height 10-12'; Spread 8-11'.**

A large leaved, evergreen shrub with moderate growth. Prefers well drained soils. Grows best in sun or partial shade, but will survive in shade. Cold hardy. Makes an excellent evergreen screen.

### **FORTUNE TEA OLIVE (*Osmanthus fortunei*) Height: 9-12'; Spread: 5-7'.**

This Osmanthus hybrid is a popular, though non-descript, shrub. With its vigorous growth, it will form an excellent screen or border. It is soil tolerant. The Fortune Tea Olive is most notable for its inconspicuous yet highly fragrant flowers.

### **LOBLOLLY BAY (*Gordonia lasianthus*) Height 30 to 60 feet; Spread 10 to 15 feet**

Loblolly-bay is a small to medium-sized native, evergreen tree that grows on acid soils in flat woodlands or shallow depressions with little or no slope, slow runoff, and poor to very poor drainage. It has a narrow crown and straight trunk.

### **LOROPETALUM (*Loropetalum chinese*) - Height 6-10'; Spread 8-9'.**

Fast growing evergreen shrub with colorful Spring flowers. Prefers sun or partial sun, in moist, but well drained soil. Excellent substitute for Photinia. Variety 'rubrum' has purplish leaves.

### **RED BAY (*Persea borbonia*) Height: 15 to 40 feet; Spread 10 to 20 feet**

Redbay is an attractive aromatic evergreen tree suitable for sites with partial to full sun and prefers drier soils. Birds and small mammals eat the fruit.

**SCHIPKA LAUREL (*Prunus laurocerasus* ‘schipkaensis’) - height 6-8’; spread 3-5’.**

A cold hardy, broad leaved evergreen shrub. Prefers sun, but will grow in fairly shady conditions. Good winter color.

**SOUTHERN WAX MYRTLE (*Myrica cerifera*) Height 40 feet; Spread 20 to 25 feet**

Southern wax myrtle is an erect, shade tolerant, ornamental, evergreen, small tree or shrub. Its flat leaves are aromatic when crushed and may repel. Underground runners extend the growth laterally and root nodules are capable of atmospheric nitrogen fixation.

**YAUPON HOLLY (*Ilex vomitoria*) Height: 5-15’; Spread: 6-12’.**

This is another versatile Holly, slower growing than the Burford, but equally as adaptable to adverse conditions. It is a native shrub which has proven to be one of the most drought resistant of all Hollies. It may be clipped to maintain any desired height. The Yaupon Holly is very heavily fruited and will attract birds.

## **E-16 Assorted Plantings for Broken Screens (Amended 6/22/04)**

The following is a sampling of shrubbery which would be appropriate in a Broken Screen. Because many of these plants are deciduous, they are not suitable for Opaque and Semi-Opaque Screens. (Note: Many of the evergreen shrubs described in planting lists E-14 and E-15 are also suitable for Broken Screens.)

**AZALEAS (*Rhododendron calendulaceum* (Flame); *R. nudiflora* & *R. periclymenoides* (Pinxterbloom); *R. prunifolium* (Plumleaf)) Height 3 to 10 feet; Spread 4 to 8 feet.**

These three azaleas are excellent naturalizing plants that do not require a lot of space. With great orange, pink, and red colors, these species attract hummingbirds and butterflies. Good for sites with full sun to part shade with medium moisture on well-drained soils with a southwest aspect.

**BEAUTYBERRY (*Callicarpa americana*) - Height 6'.**

Very colorful deciduous shrub with springtime flowers, followed by purple fruit which lasts into winter. Prefers full sun.

**\*BLUEBERRY (*Vaccinium ashei*) - Height 4-6'; Spread 3-5'.**

Also known as Rabbiteye blueberry, this is a heat tolerant, native shrub. White flowers in springtime followed by blue fruits that birds enjoy. Has a moderate growth rate. This shrub prefers well drained, acid soil.

**\*BORDER FORSYTHIA (*Forsythia intermedia*) Height: 8-10'; Spread: 7- 10'.**

Forsythias are well known shrubs which bloom bright yellow quite early in the Spring. There are two commonly available forms of this shrubs: the weeping *Forsythia suspensa* and the more upright *Forsythia intermedia*. The latter is preferred for screening purposes. With its graceful branches, the Border Forsythia presents a good deciduous foliage mass and should be given plenty of room to grow. It transplants easily and withstands poor growing conditions. It should be thinned occasionally to ensure vigorous growth.

**BUTTON BUSH (*Cephalanthus occidentalis*) Height: 6 to 10 feet Spread: 6 to 10 feet**

Buttonbush is a deciduous, warm-season, tall shrub or small tree that grows along swamps, marshes, bogs, ditches, and other riparian areas that are seasonally inundated for at least part of the year. Its base is often swollen, with green branches when young but turns brown at maturity. Tiny, white flowers occur in dense, spherical clusters at branch ends attract bees and butterflies with fruits arranged in a round cluster of brown, cone-shaped nutlets.

**CAROLINA ALLSPICE OR SWEETSHRUB (*Calycanthus floridus*) - Height 6-9'; Spread 5-8'.**

This is a deciduous shrub native to the Southeast. Fragrant, maroon flowers appear in late Spring. Takes sun or shade.

**CAROLINA ROSE (*Rosa carolina*) Height 3 to 6 feet Spread: 5 to 10 feet**

Best grown in average, medium-wet to wet, well-drained soil in full sun. Fragrant, showy flowers attract birds and butterflies, but this plant does have thorns.

**CLETHRA (*Clethra alnifolia*) - Height 10'.**

Another native of the Eastern United States, Clethra has fragrant white flowers in late Summer. Grows well in acid soils. Full sun, however in the Piedmont it would do best with some shade. Varieties are available with pink flowers.

**COMMON WITCH HAZEL (*Hamamelis virginiana*) Height: 8-15'; Spread 7-14'.**

This shrub is a larger version of Vernal Witch Hazel with many of the same qualities. It is another native woodland plant which has adapted well to landscaping uses. The Common Witch Hazel is recommended for shady areas, but when planted in the sun it grows to be a splendid well rounded specimen. It is especially useful in large areas.

**DROOPING LEUCOTHOE (*Leucothoe fontanesiana*) Height: 3-4'; Spread: 4-6'.**

Drooping Leucothoe is a moundlike shrub which is good for planting in front of and between other flora and beneath trees. It is hardy in city conditions and gives a natural effect when planted along borders. This native evergreen is graceful and attractive in all seasons. It is easy to transplant but requires a heavy mulch and should be provided with at least partial shade. Old branches should be pruned occasionally to stimulate new growth.

**FRINGETREE (*Chioanthus virginicus*) Height: 10-30'; Spread: 8-10'.**

The Fringetree is known for its profusion of beautiful flowers. It is considered to be one of the most striking native American shrubs. It is relatively difficult to transplant, but once established it does well in cities as it endures heavy smoke and dust. The mature Fringetree's only drawback is that its leaves appear rather late in the Spring.

**JAPANESE BARBERRY (*Berberis thunbergii*) Height: 3-5'; Spread: 3- 5'.**

This extremely common deciduous shrub is considered to be one of the toughest members of the Barberry family. It survives drought, poor soils, exposures, and the worst city conditions. With its many thorns, the Japanese Barberry is often used as an impenetrable barrier, but it is attractive enough to stand alone as a specimen plant. It requires no special maintenance and, when planted singularly, needs no pruning.

**JAPANESE FLOWERING APRICOT (*Prunus mume*) - Height 15' (tree).**

Deciduous tree with small, but profuse flowers that have a spicy fragrance. Blooms in February or March. Varieties are available with pink, red, or white flowers. Prefers full sun or partial shade.

**OAKLEAF HYDRANGEA (*Hydrangea quercifolia*) - Height 4-6'; Spread 3-5'.**

Deciduous shrub with large, white flower clusters during the Summer. Colorful crimson foliage in Fall. Makes an excellent specimen plant.

**SMOKETREE (*Cotinus coggygria*) - Height 10-15'; Spread 8-14'.**

Large shrub or small deciduous tree with attractive round leaves. Colorful lavender panicles appear in Summer. Prefers well drained soil, but otherwise does well in poor soils. Full sun is best for this shrub.

**STAR MAGNOLIA (*Magnolia stellata*) Height: 10-12'; Spread: 8-10'.**

This handsome specimen shrub is considered to be the hardiest of all the Magnolias. It forms a broad, rounded mass. It becomes tree-like with age but continues to branch to the ground. Early in the spring, it produces numerous fragrant white flowers. The Star Magnolia should not be planted adjacent to shallow rooting trees. It should be allowed plenty of sun.

**SUMAC (*Rhus copallina* (Shining); *R. glabra* (Smooth) *R. typhina* (Staghorn)) Height 7 to 40 feet; Spread 9 to 20 feet**

These species are perennial, deciduous, sun-loving, thicket-forming shrubs or small trees with branches that tend to be fairly sparse and stout. Sumac does well on dry to medium moisture sites. The tart fruits are eaten by birds and are very tart in taste. These species provide good fall color.

**\*\*\*\* SWAMP WHITE OAK (*Quercus bicolor*) Height: 50 to 60 feet; Spread: 50 to 60 feet**

Swamp white oak is a medium sized tree with an irregular crown suitable to river bottomlands, depressions, swamp borders, and along edges of streams. It is rapid growing and long lived, reaching 300 to 350 years. Many kinds of wildlife eat the acorns, particularly ducks. Swamp white oak is intermediate in shade tolerance but not very drought tolerant.

**VERNAL WITCH HAZEL (*Hamamelis vernalis*) Height: 4-6'; Spread: 2- 3'.**

This rapidly growing native shrub is excellent for bordering and naturalizing. It assumes a dense, upright form, thriving in even the most polluted air. Other than plenty of watering, the Vernal Witch Hazel requires no special maintenance.

**\*\*\*\*Viburnum (*Viburnum prunifolium*; *V. dentatum*) Height: 12 to 15 feet; Spread: 8 to 12 feet**

Black Haw is a small tree with twisted trunk and arching branches with an overall round crown appearance. Does best on partially sunny sites on moist, well-drained soils.

## E-17 List of Invasive Plant Species (AMENDED 6/22/04; 6/22/10)

The following plant species shall be prohibited when complying with the shading and screening provisions of this chapter and shall not be shown on any plans submitted in support of a Land Use Permit application. Further information on invasive pest plants that applicants may wish to avoid may be found on the website for the North Carolina Native Plant Society.

Plant Type: A=Aquatic, H=Herbaceous, W=Woody Plant

<b>Species (Latin)</b>	<b>Common Name</b>	<b>Type</b>
<i>Ailanthus altissima</i>	Tree of Heaven	W
<i>Albizia julibrissin</i>	Mimosa	W
<i>Alliaria petiolata</i>	Garlic-Mustard	W
<i>Celastris orbiculatus</i>	Asian Bittersweet	W
<i>Eleagnus angustifolia</i>	Russian Olive	W
<i>Eleagnus umbellata</i>	Autumn Olive	W
<i>Hedera helix</i>	English Ivy	W
<i>Hydrilla verticillata</i>	Hydrilla	A
<i>Lespedeza bicolor</i>	Bicolor Lespedeza	W
<i>Lespedeza cuneata</i>	Sericea Lespedeza	H
<i>Ligustrum sinense</i>	Chinese privet	W
<i>Lonicera fragrantissima</i>	Bush Honeysuckle	W
<i>Lonicera japonica</i>	Japanese Honeysuckle	W
<i>Microstegium vimineum</i>	Japanese Stilt-grass	H
<i>Murdannia keisak</i>	Asian Spiderwort	H
<i>Myriophyllum aquaticum</i>	Parrotfeather	A
<i>Paulownia tomentosa</i>	Princesstree	W
<i>Phragmatis australis</i>	Common Reed	H
<i>Polygonum cuspidatum</i>	Japanese Knotweed	H
<i>Pueraria montana</i>	Kudzu	H
<i>Rosa multiflora</i>	Multiflora Rose	W
<i>Salvinia molesta</i>	Aquarium water-moss	A
<i>Wisteria sinensis</i>	Chinese wisteria	W



# Town of Carrboro

Town Hall  
301 W. Main St.  
Carrboro, NC 27510

## Agenda Item Abstract

**File Number:** 14-0175

**Agenda Date: Version:** 1  
5/27/2014

**In Control:**  
Board of A

**Status:**  
Consent  
Agend  
menFile  
**Type:** Abst

### **TITLE:**

Request for the business loan fund from Barry Keith dba Surplus Sids

**PURPOSE:** The purpose of this item is for the Board to consider a loan from the business loan fund to Barry Keith, owner and operator of Surplus Sids, at 309 E. Main Street, for façade improvements to the front of the building/porch addition.

**DEPARTMENT:** Economic and Community Development

**CONTACT INFORMATION:** Annette D. Stone, AICP Director 919-918-7319

**INFORMATION:** Barry Keith, owner of Surplus Sids is requesting a loan in the amount of \$12,000 (Attachment A) from the Town's newly created business loan fund. This would be the first such loan from the new loan fund. The funds would be used to improve the front façade of the building with a new front porch addition. Sid's is known for their "outdoor displays." The porch addition will help to improve the appearance and give a more secure location for display items.

Surplus Sid's has been located at 309 E. Main Street for 23 years. The owner Barry Keith has submitted to staff copies of his credit ratings and 2013 financial records including his tax returns. Barry Keith currently has an outstanding loan from the Town's Energy Efficiency Loan Program and is current with all his payments. The guidelines for the new business loan funds allow for up to \$25,000 in uncollateralized loans. The applicant will be required to sign a personal guarantee. The ESC recommended the Board approve the loan 24 months at a 2.5% interest rate which would result in a payment of \$513.17 per month. The applicant requested after the ESC meeting, for terms of 36 months at a 2.5% interest rate which would result in a payment of \$346.38.

**FISCAL & STAFF IMPACT:** The fund currently has \$125,000 in available funds. Loaning these funds out would begin to build the fund with interest earned increasing the revenue stream.

**RECOMMENDATION:** The staff recommends the Board consider approving the loan with the terms requested by the applicant.

Town of Carrboro, NC  
Business Revolving  
Loan Fund Application



INSTRUCTIONS: Please read the Business Revolving Loan Description and Criteria before completing this application. It is important that you fill out all sections of this application completely. *Please be advised that this application and the information submitted with it are considered to be public records subject to disclosure in accordance with N.C. General Statutes Chapter 132; information which is considered "trade secret" as defined by law and marked as such (or as "confidential") may be withheld from public disclosure as provided by law.* Questions regarding this application or the application process should be directed to the Town's Economic and Community Development Director.

NAME OF APPLICANT (S): Barry "Sid" Keith

APPLICANT MAILING ADDRESS: 309 E. Main St Carrboro N.C. 27510

PHONE: (919) 942 7127 EMAIL: KOJTM@yandex.ru

NAME OF BUSINESS: Surplus Sid's Inc

NUMBER OF YEARS  
IN OPERATION: 27 CORPORATION  PARTNERSHIP  SOLE PROPRIETORSHIP  LLC

FED TAX ID# 56-1610415 PRIVILEGE LICENSE # 574-

PHYSICAL LOCATION OF BUSINESS: 309 E. Main St - Carrboro NC 27510

PHONE: (919) 942 7127 EMAIL: KOJTM@yandex.ru

1. FINANCIAL INFORMATION:

CAPITAL NEEDED FOR START UP AND FIRST YEAR OPERATING EXPENSES: \_\_\_\_\_

LOAN AMOUNT REQUESTED: \$12,000.<sup>00</sup>/<sub>100</sub>

Town of Carrboro, NC  
Business Revolving  
Loan Fund Application



A. List other sources of capital and financing to be involved, including equity contributions from the applicants resources. Project must demonstrate at least 50% funding for start-up and first year operating expenses. Personal Funds

B. Describe the financial need to include specific need for the Revolving Loan Funds in addition to or in lieu of private financing. Effective use of resources

2. PROJECT DESCRIPTION:

Describe the type of service, retail, technology or manufacturing business that is being proposed.

Redress & Improve look of  
Store Front, to blend better  
with Improvements in downtown!!

3. PROJECT BENEFIT TO THE COMMUNITY:

A. What are the estimated annual sales/revenue projections? Detail any improvements to real property. New Covered Front of Surplus  
Sid's.

Town of Carrboro, NC  
Business Revolving  
Loan Fund Application



B. How will the project benefit or serve the community or targeted clients/customers? Why are these needs not currently being met and how will this project satisfy these needs? \_\_\_\_\_

The Building at 309 is 64 years old,  
Surplus Sid's has been in this location  
23 years, a Fresh look out Front  
would look better.

4. JOB CREATION AND RETENTION:

How many jobs will be created or retained in this project? What are the estimated number of hours and salaries for these positions? What types of benefits or policies are proposed to ensure employee retention?

Construction of project, a least 3

5. BACKGROUND, BUSINESS PLAN AND MARKET ANALYSIS

A. What is your previous business experience or education? \_\_\_\_\_

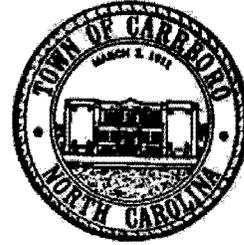
30 year in retail trade,  
University BA 1978  
School of Hard Knocks thereafter!

B. What are the market trends and who are you trying to serve? \_\_\_\_\_

Town of Carrboro, its citizens  
& visitors.

C. Have you developed a business plan and/or a market analysis? Either attach copies of the business plan and market analysis or briefly describe. see att.

Town of Carrboro, NC  
Business Revolving  
Loan Fund Application



D. Describe your facility, size and location. Also attach any building elevations, floor or facility plans. see plans

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E. If you are leasing, describe the terms of your lease. Own the real Estate

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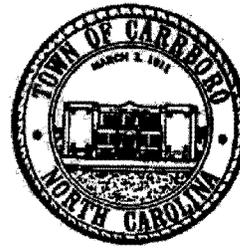
6. PLEASE ATTACH THE FOLLOWING DOCUMENTATION:

- A.  Detailed budget of start-up cost, first year operating expenses, and 3 to 5 years pro-forma cost/revenue projections.
- B. Documentation of other capital revenue sources.
- C. Personal or business financial statements.
- D. Personal credit report.
- E. Documentation of real property that will be used for collateral, any outstanding liens and tax values.

I (we) the undersigned certify that the information provided in this application, documents and attachments provided are true and complete to the best of my knowledge. I further commit to the following actions;

- A) I understand that the Town is not obligated to fund any project and that funding is fully at the discretion of the Board of Aldermen and limited based on available funds.
- B) Undertake and carry out the project as described in the application and documents as submitted.
- C) Agree to create/retain jobs as described in the application. I understand and that 51% of the jobs created must be filled by persons who earned less than 80% of the median income for the county they resided in the previous 12 months.
- D) Submit annual employment reports to the Town showing the number of jobs created or retained which would otherwise have been lost.
- E) Make all relevant records available to the Town or State available upon request for reporting purposes.

Town of Carrboro, NC  
 Business Revolving  
 Loan Fund Application



- F) I understand that the Town is not committed to provide funding until loan documents have been fully executed and the release of any other conditions have been satisfied by the applicant.
- G) Project must be completed by \_\_\_\_\_.
- H) Secure and obtain additional loan funds in the amount of \$ \_\_\_\_\_ as described in this application, and provide \$ \_\_\_\_\_ in equity for the applicants own resources for the project.
- I) Be responsible for any cost overruns.
- J) I will not discriminate against any individual on the basis of race, color, religion, sex, gender, or national origin, disability, sexual orientation or gender expression/identity in any of my business activities or operations whether financed in whole or in part by funds received by the Town.

PARTNERSHIP AND SOLE PROPRIETORSHIPS	CORPORATIONS
<p>SIGNED: _____</p> <p>TITLE: _____</p> <p>DATE: _____</p>	<p>NAME OF CORPORATION: <u>Surplus Sids Inc</u></p> <p>SIGNED BY: <u>[Signature]</u></p> <p>ATTEST: _____</p> <p>DATE: <u>4/29/14</u></p> <p style="text-align: right;">(seal)</p>
<p>LLC</p> <p>NAME OF LLC: _____</p> <p>SIGNED: _____</p> <p>TITLE: _____</p> <p>DATE: _____</p>	

## TOWN OF CARRBORO – BUSINESS LOAN FUND CBLF-2

<p>1. <input checked="" type="checkbox"/> The purpose of this loan fund is to attract locally owned sustainable business enterprises that are environmentally and socially responsible. The business must be located within the town limits of Carrboro and business owners must reside in Orange County.</p>
<p>2. Type of funding requested</p> <ul style="list-style-type: none"> <li>• New start up or expanding an existing business (maybe supplemental to Revolving Loan Fund)</li> <li><input checked="" type="checkbox"/> Façade improvements, new signage, awnings (\$20,000 limit)</li> <li>• Emergency Capital</li> </ul>
<p>3. Project benefit:</p> <ul style="list-style-type: none"> <li>• Estimated annual sales</li> <li>• Number of jobs created or retained and annual salaries</li> <li><input checked="" type="checkbox"/> Improvement to Real Property</li> </ul>
<p>4. <input checked="" type="checkbox"/> The business should demonstrate how it serves the community, who are the targeted clients/customers, how are needs not being met, and how does this business satisfy those needs and improve the business environment for the Town. Businesses that are locally owned and that are mission driven and fulfill a social need are encouraged.</p>
<p>5. <input checked="" type="checkbox"/> A detailed budget of the proposed project and how funds will be spent. For new and expanding businesses submit startup cost and 3 to 5 years pro-forma cost/revenue analysis.</p>
<p>6. If new jobs are created they should demonstrate living wage salaries (<i>living wage salaries are defined as a wage sufficient to meet the basic necessities and comforts essential to an acceptable standard of living</i>) or commitment to employee retention.</p>
<p>7. New and expanding businesses should be able to demonstrate commitment of at least 50% of start-up and 1<sup>st</sup> year operating expenses.</p>
<p>8. New and expanding businesses are encouraged to seek other sources of capital commitment. Applicants should submit documentation of commitment of other sources of capital.</p>
<p>9. The applicant must demonstrate an ability to repay loan with a personal credit report. Submitted with the application must be a personal (or business if existing business) financial statements. Loans for more than \$20,000 must be secured with a deed for real property to adequately collateralize the loan.</p>
<p>10. Projects must be consistent with Town policies and ordinances. Although competition is not viewed as a negative impact for existing businesses, data must be presented as to the need for duplication in existing services or products.</p>
<p>11. New and expanding businesses should demonstrate the ability to be financially viable within a three year timeframe.</p>
<p>12. Loan funds may be allocated on a defined schedule, if after one year the applicant has not used the funds. A request for an extension of the loan would need to be reviewed by the Board of Aldermen.</p>
<p>13. Loans are made at the discretion of the Town Board of Aldermen and subject to loan pool availability.</p>
<p>14. Loan recipients will not discriminate against any individual on the basis of race, color, religion, sex, gender, national origin, disability, sexual orientation or gender expression/identity in any of business activities or operations whether financed in whole or in part by funds received by the Town.</p>
<p>15. Please be advised that an application and the information submitted to the Town of Carrboro are considered to be public records subject to disclosure in accordance with N.C. General Statutes Chapter 132; information which is considered "trade secret" as defined by law and marked as such (or as "confidential") may be withheld from public disclosure as provided by law.</p>

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# GREEN MINDED CARPENTRY

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## Proposal:

We have looked at the plans for the 40 foot by 16 foot shed roof/ store front awning at Surplus Sids in Carrboro, NC 27510. The following is a detailed description of work to be done, the materials to be used, a rough timeline, and the projected cost of the materials and labor.

The labor on this project covers as follows:

- \*Material selection and procurement (we will pick only the best lumber available). All materials will be delivered to Surplus Sids
- \*The materials chosen for this job are at or above NC building codes
- \* I have scoured for the best pricing on corrugated metal roofing and saved over \$500 on the roofing supplies alone.
- \* Work to be performed by Colin Starnes and Sean Manley in a timely manner.
- \* Time estimated to complete the store front roof is roughly 3 weeks give or take depending on weather/inspections office.
- \* The craftsmanship provided will well exceed the average standards of good quality. (supreme or best quality will be provided....)
- \* In exchange for a small sign advertising my work, I will provide scrolled rafter tails and scrolled angle braces connecting 6x6 posts to header.
- \* The front entry way may have to be closed for a full or partial day to insure your clients safety.

## Materials:

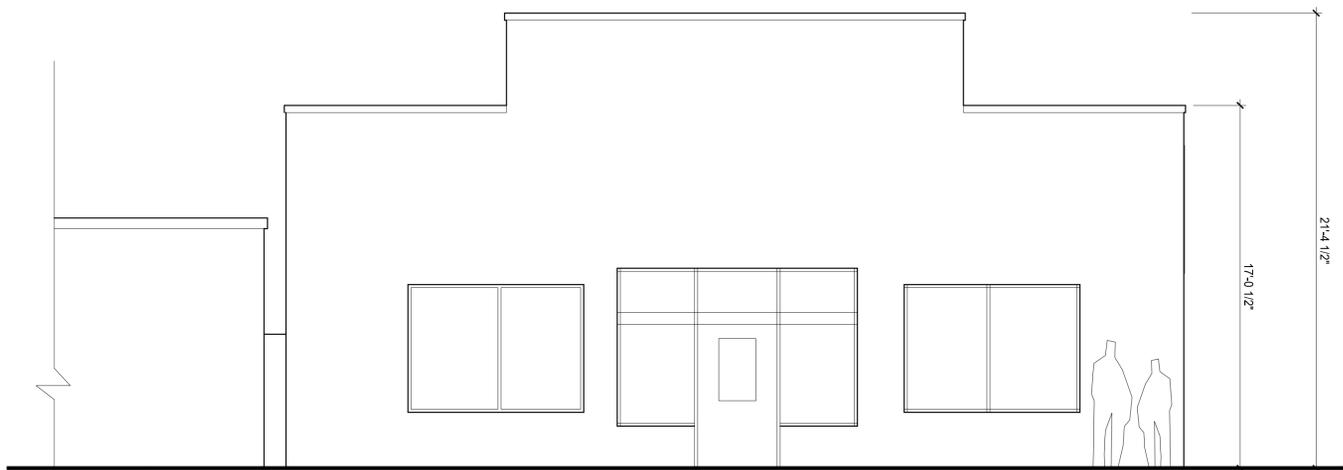
- \*Rafters 2x10x16 syp
  - \*Header double 2x10
  - \*All ties will be simpson strong ties to NC code
  - \*Footers concrete reinforced with rebar
  - \*Roofing galvanized corrugated roofing
- (As far as using sids reclaimed roofing metal we decided that the offset of labor cost to have a waterproof finished product would well exceed the cost of new materials for the roofing.

This project will come with a 12 month no questions asked warranty. I've never had a single warranty call ever.

Labor total: \$7,800.00

Materials total: \$3200.00

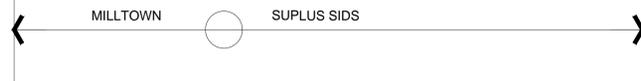
Total job cost for new store front shed roof with a western detail: \$11,000.00



1  
EX EXISTING SOUTH ELEVATION  
SCALE: 1/4" = 1'-0"



2  
EX PROPOSED SOUTH ELEVATION  
SCALE: 1/4" = 1'-0"



SHAAN HASSAN

919.943.6869  
shassanjsa@gmail.com

THESE DRAWINGS ARE INSTRUMENTS OF SERVICE AND AS SUCH SHALL REMAIN THE PROPERTY OF THE ARCHITECT. THEY HAVE BEEN PREPARED FOR A SPECIFIC PROJECT AND SHALL NOT BE USED IN CONJUNCTION WITH ANY OTHER PROJECT WITHOUT THE PRIOR WRITTEN PERMISSION OF THE ARCHITECT. ALL RIGHTS RESERVED.  
© 2014 SHAAN HASSAN

Project:

PORCH ADDITION FOR:  
SURPLUS SIDS

309 E. Main St.  
Carrboro, NC  
27510

SCHEMATIC

Job Number:

Drawn	SPH
Checked	SPH
DATE	APRIL 14, 2014
REVISION	MAY 14, 2014

Sheet Title:

PR

Sheet Number



# Town of Carrboro

Town Hall  
301 W. Main St.  
Carrboro, NC 27510

## Agenda Item Abstract

**File Number:** 14-0176

**Agenda Date:** Version: 1

**Status:**

Consent

Agend

**In Control:**

menFile

Board of A

**Type:** Abst

### TITLE:

Curbside Recycling Roll-Out Cart Grant Project Ordinance

**PURPOSE:** The purpose of this item is to request the Board of Aldermen (BOA) accept a grant from the North Carolina Department of Environmental and Natural Resources (NCDENR) for the purchase of recycling roll-out carts and approve the project ordinance.

**DEPARTMENT:** Public Works, Management Services

**CONTACT INFORMATION:** George Seiz - 919/918-7427, Arche McAdoo - 919/918-7439

**INFORMATION:** Orange County is still planning to transition the curbside recycling program from using 18 gallon bins to 95 gallon roll-out carts with RIFD tags (Radio Frequency Identification). To help offset the purchase of the new carts the County asked the towns last fall to apply for grants thru NCDENR Curbside Recycling Roll-Out Cart Grant Program. The grant program is administered by the Division of Environmental Assistance and Customer Service (DEACS). The purpose of this grant program is to assist local government with implementing curbside recycling programs using roll-out carts or with transitioning existing curbside recycling programs from bins to roll-out carts. On November 12, 2013 the BOA authorized town staff to pursue the submittal of a grant proposal up to a maximum amount of \$75,000. An inter-local agreement, between Orange County and the Towns of Carrboro, Chapel Hill and Hillsborough for the acquisition of the roll carts, was executed by all agencies on February 3<sup>rd</sup> of 2014. (See attachment)

Town staff submitted a grant proposal on November 27, 2013 for the purchase of 4,626 ninety-five gallon roll-out cars with built in RIFD tags. The total estimated cost for Carrboro's purchase is \$242,865 (Chapel and Hillsborough submitted similar grant proposals at about the same time based on their needed number of carts). Carrboro and has recently been notified that the grant proposal was approved and has sent the Town a DENR Grant Contract for execution. The total amount of the grant award is \$75,000.

**FISCAL & STAFF IMPACT:** Orange County will be paying for the purchase of the Roll-Out Carts according to the stipulations noted in the attached inter-local agreement.

DENR Grant -	\$75,000.00
Orange County -	<u>\$167,865.00</u>
Total -	\$242,865.00

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**Agenda Date: Version: 1**

**Status:**  
Consent  
Agend  
menFile  
**Type: Abst**

**In Control:**  
Board of A

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**RECOMMENDATION:** It is recommended that the BOA approve the attached project ordinance.

**INTERLOCAL AGREEMENT BETWEEN ORANGE COUNTY  
AND THE TOWNS OF CARRBORO, CHAPEL HILL, AND HILLSBOROUGH  
REGARDING THE ACQUISITION OF RECYCLABLE MATERIALS ROLL CARTS**

THIS AGREEMENT, made and entered into this 3<sup>rd</sup> day of February, 2014 between Towns of Carrboro, Chapel Hill, and Hillsborough, North Carolina municipal corporations, of Orange County, North Carolina (hereinafter referred to individually as the "Town" and jointly as "Towns"); and Orange County, a political subdivision of the State of North Carolina (hereinafter referred to as the "County"), for the acquisition of recyclable materials roll carts for the collection of recyclable materials. (County and Towns may be referred to collectively as the "Parties")

**WITNESSETH**

**WHEREAS**, the County and Towns are public bodies, politic and corporate, under the laws of the State of North Carolina and are vested with the power and authority by Article 20 of North Carolina General Statutes Chapter 160A to enter into this Interlocal Agreement (hereinafter referred to as the "Agreement"); and

**WHEREAS**, the County operates and/or contracts for the operation of solid waste and/or recyclable materials collections services in the jurisdictions of the Towns; and

**WHEREAS**, the County and Towns desire to apply for and acquire grants to assist in the acquisition of roll carts to further the operation of solid waste and or recyclable materials collections services in each jurisdiction.

**NOW, THEREFORE**, in consideration of the foregoing and on mutual promises and obligations set forth herein, the receipt and sufficiency of which is hereby acknowledged, the County and Towns agree as follows:

**1. TERM AND TERMINATION**

- a. This Agreement shall commence 1/10 2014 and shall continue until all roll cart grant fund awards are received, or Towns notified of denial of grant award, and awarded funds transmitted to Orange County.
- b. This Agreement may be renewed or amended upon written agreement of the Parties.
- c. This Agreement may be terminated by the Parties hereto only upon mutual written agreement of all the Parties.

**2. COUNTY RESPONSIBILITIES**

- a. County shall order the roll carts necessary to fully operate, or procure services to operate, recyclable materials collections within each Town's jurisdiction.
- b. County shall ensure that vendor prepares separate invoices to each of the Towns for roll carts needed to serve each Town.
- c. County shall instruct vendor to send all Town invoices for the purchase of the roll carts to County.
- d. Upon receipt of Towns' roll cart invoices County shall forward to the Towns their respective invoices together with full payment by the County to each Town of the amount owed by that Town to the vendor.

**3. TOWN RESPONSIBILITIES**

- a. Each Town shall apply for grants as designated by County for funds to assist with the purchase of roll carts.
- b. Immediately upon receipt from the County of roll cart invoices and payment by the County to the Towns of the amount of said invoices, each Town shall pay to the vendor the amount set forth in their respective invoices.
- c. Upon receipt of grant funds designated for the purchase of roll carts Town shall accept such grant funds and shall, within thirty (30) days of receipt, pay to County amount equal to the received grant funds.
- d. Acknowledge any and all ownership interest in the roll carts is and shall remain with County.

**4. INDEMNIFICATION**

To the extent authorized by North Carolina law County and Towns each agree to indemnify and hold harmless one another, their agents, officials, and employees, from and against all claims, actions, demands, costs, damages, losses and/or expenses of any kind whatsoever, in whole or in part, resulting from any acts of County or each Town, their agents, officials, employees, guests or invitees caused by or directly related to the performance of this Agreement, including but not limited to court costs and attorney's fees incurred by the County and Towns in connection with the defense of said matters.

**5. NOTICE**

Any notice pursuant to this Agreement, or any amendment or renewal, shall be in writing and delivered by United States Mail to the following:

To Carrboro:

Town of Carrboro  
Town Manager  
301 West Main Street  
Carrboro, NC 27510

To the County:

Orange County  
County Manager  
200 S. Cameron Street  
Hillsborough, NC 27278

To Hillsborough:

Town of Hillsborough  
Town Manager  
101 East Orange Street  
Hillsborough, NC 27278

To Chapel Hill:

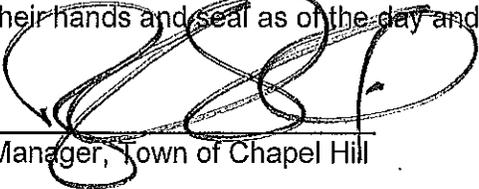
Town of Chapel Hill  
Town Manager  
405 Martin Luther King, Jr. Blvd.  
Chapel Hill, NC 27514

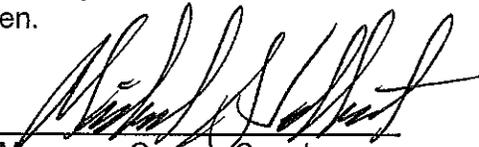
**6. ENTIRE AGREEMENT**

This Agreement constitutes the entire Agreement of the Parties hereto and is effective the date first above recorded.

[SIGNATURE PAGE TO FOLLOW]

In witness whereof, the Parties, by and through their authorized agents, have hereunder set their hands and seal as of the day and year first above written.

  
\_\_\_\_\_  
Manager, Town of Chapel Hill

  
\_\_\_\_\_  
Manager, Orange County

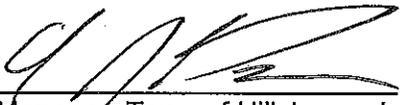
ATTEST:

ATTEST:

\_\_\_\_\_  
Town Clerk

\_\_\_\_\_  
Clerk to the Board

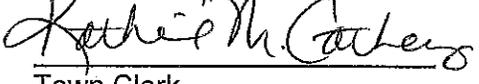
  
\_\_\_\_\_  
Manager, Town of Carrboro

  
\_\_\_\_\_  
Manager, Town of Hillsborough

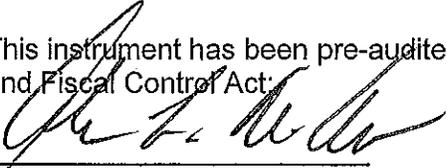
ATTEST:

ATTEST

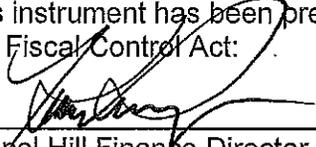
  
\_\_\_\_\_  
Town Clerk

  
\_\_\_\_\_  
Town Clerk

This instrument has been pre-audited in the manner required by the Local Government Budget and Fiscal Control Act:

  
\_\_\_\_\_  
Carrboro Finance Director

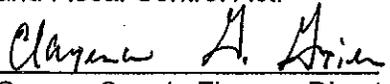
This instrument has been pre-audited in the manner required by the Local Government Budget and Fiscal Control Act:

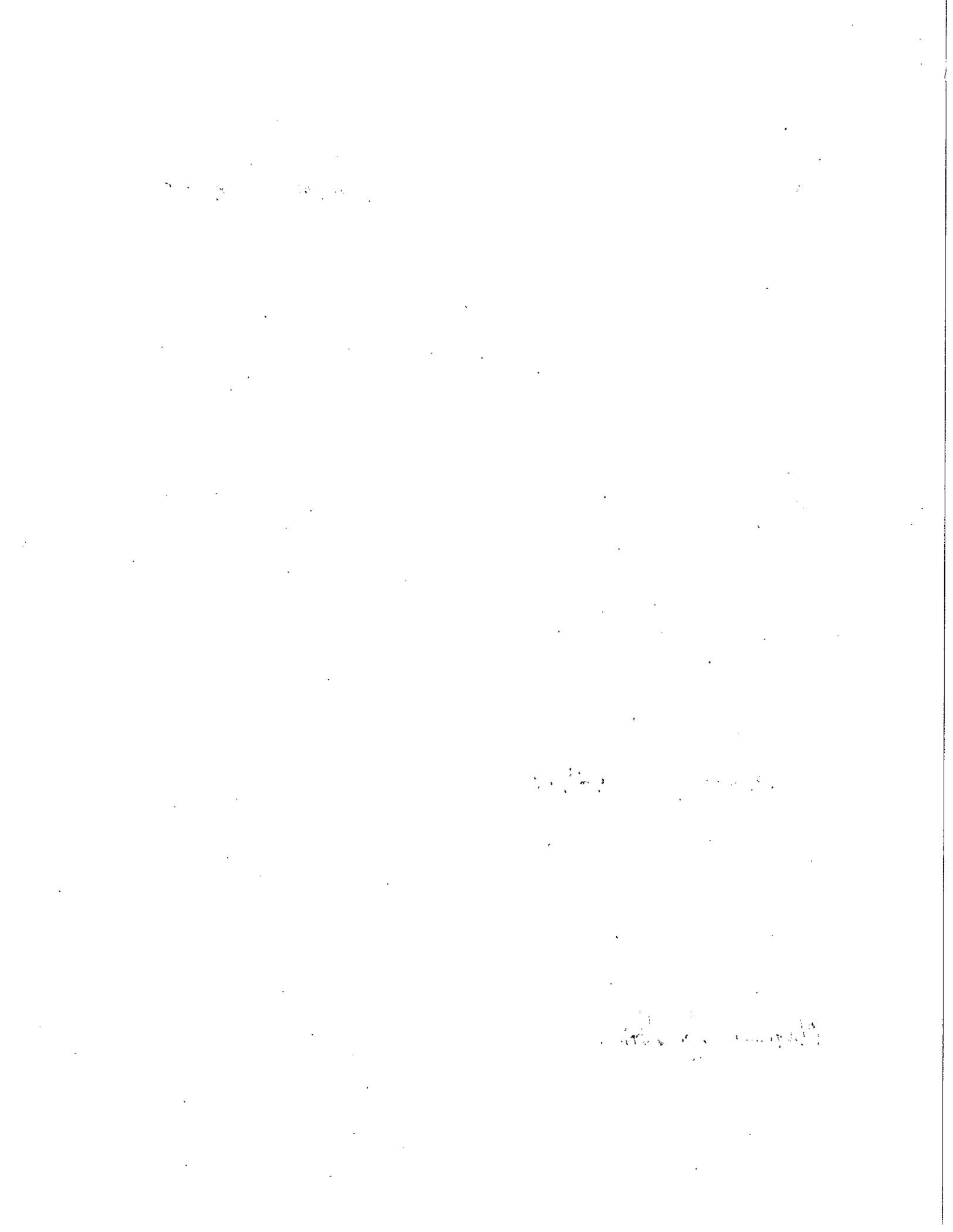
 1/28/14  
\_\_\_\_\_  
Chapel Hill Finance Director

This instrument has been pre-audited in the manner required by the Local Government Budget and Fiscal Control Act:

  
\_\_\_\_\_  
Hillsborough Finance Director

This instrument has been pre-audited in the manner required by the Local Government Budget and Fiscal Control Act:

  
\_\_\_\_\_  
Orange County Finance Director



**CURBSIDE RECYCLING ROLL-OUT CART GRANT PROJECT ORDINANCE**

WHEREAS, the Town of Carrboro (Town) has been awarded a grant in the amount of \$75,000.00 by the North Carolina Department of Environment and Natural Resources; and,

WHEREAS, the grant funds are to be used for the purchase of recycling roll-out carts to serve all households in the Town; and,

WHEREAS, the Inter-Local Agreement entered into on February 3, 2014 between Orange County (County) and the Towns of Carrboro, Chapel Hill, and Hillsborough Regarding The Acquisition of Recyclable Materials Roll Carts (Inter-Local) requires each Town to apply for grants as designated by County for funds to assist with the purchase of roll-carts; and,

WHEREAS, the Inter-Local provides for the County to make payment to the Town for roll-cart invoices for payment to the vendor; and,

WHEREAS, the Inter-Local requires Town to pay to the County an amount equal to any received grant funds for the acquisition of roll-carts; and,

WHEREAS the Board of Aldermen for the Town deems this activity to be a worthy and desirable undertaking;

NOW, THEREFORE PURSUANT TO N.C.G.S 159-13.2, BE IT ORDAINED BY THE BOARD OF ALDERMEN OF THE TOWN OF CARRBORO THAT:

1. This grant is authorized for the purchase of curbside recycling roll-out carts and is hereby authorized to be undertaken until all project activity is completed.
2. The following revenues are anticipated to be available to the Town of Carrboro to complete this Project:

NC Department of Environment and Natural Resources	\$ 75,000.00
Orange County	<u>\$167,865.00</u>
Total	\$242,865.00

3. The following amount is appropriated for this project to be expended in the following manner:

Curbside Recycling Roll-Out Carts	<u>\$242,865.00</u>
Total Appropriation	\$242,865.00

4. The Town Manager is authorized to execute a grant contract and any other necessary documents for this award with the NC Department of Environment and Natural Resources.
5. Within five (5) days after this ordinance is adopted, the Town Clerk shall file a copy of this ordinance with the Finance Director.



# Town of Carrboro

Town Hall  
301 W. Main St.  
Carrboro, NC 27510

## Agenda Item Abstract

**File Number:** 14-0177

**Agenda Date: Version:** 1  
5/27/2014

**In Control:**  
Board of A

**Status:**  
Consent  
Agend  
menFile  
**Type:** Abst

### **TITLE:**

Request-to-set a Public Hearing on Land Use Ordinance Amendments relating to land uses associated with drive-in and drive-through windows

**PURPOSE:** The purpose of this item is for the Board of Aldermen to consider setting a public hearing on potential text amendments to the Land Use Ordinance affecting land uses with drive-in and drive-through window. A draft ordinance is being prepared for the Board's consideration. A resolution setting a public hearing date for June 24<sup>th</sup> and referring the amendments to advisory boards has been prepared.

**DEPARTMENT:** Planning

**CONTACT INFORMATION:** Christina Moon - 919-918-7325; Patricia McGuire - 919-918-7327

**INFORMATION:** The Board discussed the topic of drive-in and drive-through windows at length during several meetings in 1997 and 1998 with a focus on such land uses in the downtown areas, mainly in the B-1(c) and B-1(g) zoning districts. Three alternatives were presented for the Board's consideration in 1998:

1. Adopt an ordinance prohibiting drive-in and drive-through uses in all zoning districts.
2. Provide direction to staff concerning those uses and locations where drive-in/through uses may be allowed to continue and where they should be prohibited entirely.
3. Leave the present use classifications and regulatory measures as they are.

Following a public hearing on June 9, 1998, the Board moved forward with the second option and adopted text amendments which included the performance standards for businesses with drive-in windows found in Section 15-176.1 of the LUO, Supplementary Use Regulations (*Attachment C*).

In the second half of 2013, the Board of Aldermen considered requests from two development projects including a drive-in/drive-through component. First, a proposed CUP modification for the Bank of America branch located on East Main Street regarding its drive-through teller station, and second, a request for text amendments to allow additional uses in M-1 zoning district subject to a CUP, including banks with drive-in windows and freestanding ATMs. These recent requests have brought to the surface questions relating to the appropriateness of drive-in and drive-through windows in the downtown and elsewhere in the Town's jurisdiction. At the October 22, 2013 meeting, the Board directed staff to prepare an ordinance that would remove land uses with drive-through windows as a potential use for future development from the remaining zoning districts that allow them. In following up with this directive, staff reviewed historical information and

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Consent  
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more recent findings related to the environmental, accessibility and land use implications of drive-through uses and presented this information as part of a work session on March 11, 2014. Board members discussed the different land uses with drive-in and drive-through windows in the permissible use table, along with the zoning districts within which they are currently allowed, as shown in the following two tables.

Use Classification	Description
2.140	Retail/No Outside Display/Drive-In Window
2.240	Retail/Outside Display/Drive-In Window
3.230	Bank with Drive-In Window
3.250	Freestanding ATM
6.260	Drive-In Movie Theaters
8.300	Drive-In Restaurant
8.400	Drive-Through Restaurant
16.100	Dry Cleaners with Drive-In Window

Zone	2.140	2.240	3.230	3.250	6.260	8.300	8.400	16.100
B-1(c)				C				
B-1(g)				C				
B-3	C	C	C	C				C
B-3T	C	C	C					C
B-4	C		C	C	C	C	C	C
B-5*								
M-1	C	C						C
M-2			C					
CT				C				
O				C				
O/A				C				C

The general discussion regarding land uses with drive-in and drive-through windows, in the late 1990s and during the March 2014 work session focused on four main areas which when in balance support a vibrant and successful community: environmental concerns linked to idling, walkability, economic development and ensuring that all citizens have equal access to services.

At the March work session, the Board directed staff to prepare an ordinance removing all land uses with drive-in and drive-through windows except for pharmacies, which are included as part of Use Classification 2.140 (Retail/No Outside Display/Drive-in Window). A draft amendment is being prepared and will be available at the meeting (as Attachment B). Use classification 2.140 is currently allowed in the B-3, B-3T, B-4 and M-1

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zoning districts subject to a conditional use permit.

The Board of Aldermen must receive public comment before adopting amendments to the LUO; Planning Board and Orange County review are also needed.

**FISCAL & STAFF IMPACT:** Public hearings involve staff and public notice costs associated with advisory board and Board of Aldermen review.

**RECOMMENDATION:** Staff recommends that the Board of Aldermen consider the attached resolution, setting a public hearing for June 24, 2014 and referring the proposed amendment to Orange County, the Planning Board, the Transportation Advisory Board and the Economic Sustainability Commission.

**A RESOLUTION SETTING A PUBLIC HEARING ON AN ORDINANCE AMENDING THE CARRBORO LAND USE ORDINANCE TO DISALLOW CERTAIN LAND USES WITH DRIVE-IN AND DRIVE-THROUGH WINDOWS FROM CERTAIN ZONING DISTRICTS.**

WHEREAS, the Board of Aldermen seeks to provide ample opportunities for the public to comment on proposed amendments to the Land Use Ordinance;

NOW, THEREFORE BE IT RESOLVED that the Board of Aldermen sets a public hearing on June 24, 2014, to consider adopting “An Ordinance Amending the Carrboro Land Use Ordinance to Disallow certain land uses with Drive-in and Drive-through windows from certain Zoning Districts.”

BE IT FURTHER RESOLVED that the draft ordinance is referred to Orange County, the Town of Carrboro Planning Board and the following Town of Carrboro advisory boards and commissions for consideration and recommendation prior to the specified public hearing date:

- |  |  |
|--|--|
| <input type="checkbox"/> Appearance Commission                         | <input type="checkbox"/> Recreation and Parks Commission             |
| <input checked="" type="checkbox"/> Transportation Advisory Board      | <input type="checkbox"/> Northern Transition Area Advisory Committee |
| <input type="checkbox"/> Environmental Advisory Board                  | <input type="checkbox"/> _____                                       |
| <input checked="" type="checkbox"/> Economic Sustainability Commission | <input type="checkbox"/> _____                                       |

This is the 27<sup>th</sup> day of May in the year 2014.

## **ARTICLE XI**

### **SUPPLEMENTARY USE REGULATIONS**

#### **PART II. MISCELLANEOUS SUPPLEMENTARY USE PROVISIONS**

##### **Section 15-176.1 Businesses with Drive-In Windows (AMENDED 06/09/98)**

In addition to other applicable provisions of this chapter, use classifications 2.140, 2.240, 3.230, 3.250, 8.300, 8.400, and 16.100 shall be subject to the following requirements:

- (1) The entrance/exit doors of such uses shall be located in such a manner that a person entering/exiting such business is not required immediately to cross a drive-in window exit lane.
- (2) Drive-in windows shall be located in such a fashion that vehicles using or waiting to use such drive-in or drive-through facilities do not interfere with vehicles seeking to enter or leave parking areas.
- (3) Where it is necessary for patrons wishing to park and enter such businesses to cross a drive-in window lane, crosswalks leading from parking areas to building entrances shall be clearly marked.
- (4) The vehicular entrances or exits of such uses shall not be located within 300 feet of the intersection of the centerlines of intersecting streets.
- (5) A building housing an 8.400 classification use may not be located closer than 1,000 feet to the nearest point of another building housing an 8.400 classification.
- (6) A Type B screen shall be erected, on the exterior border, from the service window to the entrance of the stacking lane.

## Article X

### PERMISSIBLE USES

#### Section 15-146 Table of Permissible Uses.<sup>1</sup>

The following Table of Permissible Uses should be read in close conjunction with the definitions of terms set forth in Section 15-15 and the other interpretative provisions set forth in this article.

<sup>1</sup>The Table of Permissible Uses was amended 05/12/81 to add the R-SIR-2 and W categories.

The Table of Permissible Uses was amended 12/07/83 to delete the W category and to add the C, R-40, R-80, B-5, and WM-3 categories.

The Table of Permissible Uses was amended 02/04/86 to add the R-2, B-1(c), B-1(g), and CT categories; 04/05/88 the B-3T; and 04/16/91 the O and OA zones.

The Table of Permissible Uses of the Carrboro Land Use Ordinance was amended 6/22/04 to modify the permit requirements for the 8.000 uses.

The Table of Permissible Uses was amended 5/24/2005 modifying the use classification 15.800.

The Table of Permissible Uses is further amended 5/24/2005 by adding a new classification 17.400 Underground Utility Lines.

The Table of Permissible Uses is amended 3/7/06 by adding the letter “S” opposite use classifications 3.110, 3.120, and 3.130 under the B-3 district column to indicate that these uses are permissible with the special use permit in that district.

The Table of Permissible Uses is further amended 3/7/06 by replacing the designation “ZC” opposite use classification 3.150 under the B-3 district column with the designation “S” to indicate that this use is permissible in this district with a special use permit.

The Table of Permissible Uses is amended 6/26/07 by modifying the use classification 21.000 Cemetery and Crematorium by creating two new subcategories for this use so that the permit requirements now read as follows: 21.200 All other cemeteries; and 21.300 Crematorium.

The Table of Permissible Uses is amended by deleting the entries for 1.510 Hotels and Motels and 1.530 Bed and Breakfast, renumbering the remaining Temporary Residential use classification that is remaining, 1.520 Tourist Homes and other Temporary Residences Renting Rooms for Relatively Short Periods of Time, from 1.520 to 1.510; and a new use classification 34.000 Temporary Lodging with associated permit requirements.

*Art. X PERMISSIBLE USES (con't)*

The Table of Permissible Uses is amended 6/26/07 by changing adding the letter “S” opposite use classification 22.100 under the B-1-C district column to indicate that this use is permissible with a Special Use Permit in that district. The Table of Permissible Uses is further amended by adding the letter “Z” opposite use classification 22.200 under the B-1-C district column to indicate that this use is permissible in this district with a Zoning Permit.

The Table of Permissible Uses is amended 6/26/07 by changing the letter “S” to letter “Z” opposite the classification 22.200 under the B-2, B-4, and CT district column to indicate that this use is now permissible with a Zoning Permit in these districts.

The Table of Permissible Uses is amended 6/26/07 by relabeling use 22.300 as Senior Citizens Day Care, Class A and by changing the letter “S” to letter “Z” opposite the classification 22.300 under the B-2, B-4, and CT district column to indicate that this use is now permissible with a Zoning Permit in these districts.

The Table of Permissible Uses is amended 6/26/07 by adding a new use classification, 22.400, Senior Citizens Day Care, Class B and adding the letter “S” opposite this use classification under the columns for the R-2, R-3 R-7.5, R-10, R-15, R-20, RR B-2, B-4, and CT zoning districts, by adding a “Z” under the columns for the B-1(G), B-1(C), B-3, M-1, O, and O/A zoning districts.

The Table of Permissible Uses is amended 11/27/07 by adding the letter “C” opposite use classifications 2.112, 2.120, 2.150, 3.120, and 3.220 under the WM-3 district column to indicate that these uses are permissible with a Conditional Use Permit in that district.

The Table of Permissible Uses is amended 6/24/08 by adding a new use classification 8.700 entitled “Mobile prepared food vendors” and by adding the letter “z” opposite this use classification under the B-1(C), B-1(G) and M-1 zoning district columns to indicate that this use is permissible in those districts with a zoning permit.

The Table of Permissible Uses is amended 10/28/08 by adding the letter “C” opposite use classifications 2.210, 2.220, 2.230 under the WM-3 district column to indicate that these uses are permissible with a Conditional Use Permit in that district.

The Table of Permissible Uses is amended 11/24/09 by the addition of a “Z(l)” opposite the 5.110 use classification in the column for the B-4 zoning district to indicate that these uses are permissible with a zoning permit in that district, subject to the limitations provided in Section 15-147(m).

The Table of Permissible Uses is hereby amended 6/22/10 to include “electronic gaming operations” as use # 6.150 and to add the electronic gaming definition. Electronic gaming operations shall be permitted with a special use permit in the B-4 zoning district, and the Table of Permissible Uses is amended accordingly.

*Art. X PERMISSIBLE USES (con't)*

The Table of Permissible is hereby amended on 4/23/13 is amended by changing the permit designation “ZS” to “ZC” wherever the former designation appears in the table under the zoning district columns applicable to the commercial and manufacturing districts. No change shall be made with respect to use classification 26.100 (major subdivisions).

<sup>2</sup>Use classifications amendment/repeal dates are as follows:

1.112—Amended 10/01/85	8.600—Amended 06/22/04
1.120—Amended 10/01/85	9.100—Amended 6/25/02
1.420—Amended 05/10/83; 06/22/04	15.147—Amended 06/22/04
1.480-- Amended 04/19/05	15.800—Amended 05/24/05
1.640—Amended 10/22/85	17.400—Amended 05/24/05
1.700—{Repealed}	18.200---Amended 11/12/85
1.800	19.100---Amended 05/12/81
2.110	19.200---Amended 05/12/81
2.120	21.000—Amended 06/20/06
2.111--Amended 04/15/81; 12/14/82	21.100—Amended 06/20/06
2.210—Amended 05/28/02 ; 10/28/08	21.200—Amended 06/20/06
2.220—Amended 10/28/08	21.300—Amended 06/20/06
2.230—Amended 5/28/02; 10/28/08	22.100—Amended 06/26/07
3.110—Amended 03/7/06	22.200—Amended 06/26/07
3.120—Amended 03/7/06	22.300—Amended 06/26/07
3.130---Amended 03/7/06	2.120—Amended 11/27/07
3.140---Amended 12/07/83	2.150—Amended 11/27/07
3.150—Amended 03/7/06	3.120—Amended 11/27/07
7.200---Amended 05/10/83	3.220—Amended 11/27/07
8.100—Amended 06/22/04	8.700—Amended 06/24/08
8.200—Amended 06/22/04	2.210---Amended 10/28/08
8.500—Amended 6/22/04	2.220---Amended 10/28/08
22.400--Amended 6/26/07	2.230---Amended 10/28/08
34.000--Amended 11/28/06	5.110---Amended 11/24/09
34.100--Amended 11/28/06	6.150---Amended 06/22/10
34.200--Amended 11/28/06	ZS to ZC --- Amended 04/23/13
2.112—Amended 11/27/07	

# TABLE OF PERMISSIBLE USES

Last Amended: 4/23/13

DESCRIPTION	R-2	R-3	R-7.5	R-SIR, SIR2, 10	R-15	R-20	RR	B-1 (C)	B-1 (G)	B-2	B-3	B-3-T	B-4	M-1	M-2	CT	C	W-R	B-5	WM-3	O	O/A
<b>1.000 Residential</b>																						
1.100 Single Family Residences																						
1.110 Single Family Detached One Dwelling Unit Per Lot																						
1.111 Site Built/Modular	Z	Z	Z	Z	Z	Z	Z		Z	Z	Z	Z				Z		Z			Z	Z
1.112 Class A Mobile Home			Z	Z	Z	Z	Z											Z				
1.113 Class B Mobile Home																						
1.120 Single Family Detached More Than One Dwelling Unit Per Lot																						
1.121 Site Built/Modular	*	*	*	*	*	*	*		*	*	*	*				*					*	*
1.122 Class A Mobile Home			*	*	*	*	*															
1.123 Class B Mobile Home																						
1.200 Two-Family Residences																						
1.210 Two-Family Conversion	*	*	*	*	*	*	*	*	*	*	*	*				*					*	*
1.220 Primary Residence with Accessory Apartment	*	*	*	*	*	*	*	*	*	*	*	*				*					*	*
1.230 Duplex	*	*	*	*	*	*	*	*	*	*	*	*				*					*	*
1.231 Maximum 20% units > 3 bedrms/du	*	*	*	*	*	*	*	*	*	*	*	*				*					*	*
1.232 No bedroom limit	*	*																				
1.240 Two Family Apartment	*	*	*	*	*	*	*	*	*	*	*	*				*					*	*
1.241 Maximum 20% units > 3 bedrms/du	*	*	*	*	*	*	*	*	*	*	*	*				*					*	*
1.242 No bedroom limit	*	*																				
1.300 Multi-Family Residences																						
1.310 Multi-Family Conversion	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC				SC					SC	SC
1.320 Multi-Family Townhomes	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC				SC					SC	SC
1.321 Maximum 20% units > 3 bedrms/du	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC				SC					SC	SC
1.322 No bedroom limit	SC	SC																				
1.330 Multi-Family Apartments	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC				SC					SC	SC
1.331 Maximum 20% units > 3 bedrms/du	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC				SC					SC	SC
1.332 No bedroom limit	SC	SC																				
1.340 Single-Room Occupancy	SC							SC	SC	SC	SC					SC						
1.400 Group Homes																						
1.410 Fraternities, Sororities, Dormitories and Similar Housing	C	C	C	C	C	C	C		C	C						C						
1.420 Boarding Houses, Rooming Houses	S	S	S	S	S	S	S		C	S						C		C				
1.430 Adult Care Home, Class A	Z	Z	Z	Z	Z	Z	Z		Z	Z	Z	Z				Z		Z			Z	Z
1.440 Adult Care Home, Class B	S	S	S	S	S	S	S		Z	Z						Z		S				
1.450 Child Care Home, Class A	Z	Z	Z	Z	Z	Z	Z		Z	Z	Z	Z				Z		Z			Z	Z
1.460 Child Care Home, Class B	S	S	S	S	S	S	S		Z	Z						Z		S				
1.470 Maternity Home	Z	Z	Z	Z	Z	Z	Z		Z	Z	Z	Z				Z		Z			Z	Z
1.480 Nursing Care Home	Z	Z	Z	Z	Z	Z	Z		Z	Z	Z	Z				Z		Z			Z	Z
1.500 Temporary Residences																						
1.510 Tourist Homes and other Temporary Residences Renting Rooms for Relatively Short Periods of Time	S	S	S	S						S									C			
1.600 Homes Emphasizing Services, Treatment or Supervision																						
1.610 Temporary Homes for the Homeless		S	S				S	S		S	S	S										
1.620 Overnight Shelters for Homeless								S		S	S	S										
1.630 Senior Citizen Residential Complex				C	C																	
1.700																						
1.800																						
1.900 Home Occupation	Z	Z	Z	Z	Z	Z	Z			S	S	S				S		Z			Z	Z

# TABLE OF PERMISSIBLE USES

Last Amended: 4/23/13

DESCRIPTION	R-2	R-3	R-7.5	R-SIR, SIR2, 10	R-15	R-20	RR	B-1 (C)	B-1 (G)	B-2	B-3	B-3-T	B-4	M-1	M-2	CT	C	W-R	B-5	WM-3	O	O/A
<b>2.000 Sales and Rental of Goods, Merchandise and Equipment</b>																						
2.100 No Storage or Display of Goods Outside Fully Enclosed Building																						
2.110 High-Volume Traffic Generation								ZC	ZC		ZC	ZC	ZC	ZC	ZC	C			C			ZC
2.111 ABC Stores								ZC	ZC		C	C	C			C						
2.112 Specialty High Volume Retail										ZC										C		
2.120 Low-Volume Traffic Generation								ZC	ZC	ZC	ZC	ZC	ZC	ZC	ZC	C			C	C		ZC
2.130 Wholesale Sales									ZC			ZC	ZC	ZC	ZC	C			C	C		ZC
2.140 Drive-In Windows											C	C	C	C								
2.150 Retail Sales with Subordinate Manufacturing and Processing								ZC												C		
2.200 Display of Goods Outside Fully Enclosed Building																						
2.210 High-Volume Traffic Generation								ZC	ZC					ZC	ZC	ZC			C	C		ZC
2.220 Low-Volume Traffic Generation								ZC	ZC					ZC	ZC	ZC			C	C		ZC
2.230 Wholesale Sales									C					ZC	ZC	ZC			C	C		ZC
2.240 Drive-In Windows											C	C		C								
2.300 Storage of goods outside fully enclosed building																						
2.310 High-volume traffic generation														ZC								
2.320 Low-volume traffic														ZC								
2.330 Wholesale Sales														ZC								
2.340 Drive-in Windows														ZC								
<b>3.000 Office, Clerical, Research and Services Not Primarily Related to Goods or Merchandise</b>																						
3.100 All operations conducted entirely Within Fully Enclosed Building																						
3.110 Operations designed to attract and serve customers or clients on the premises, such as the office of attorneys, physicians, other professions, insurance and stock brokers, travel agents, government office buildings, etc.								ZC	ZC	ZC	S		ZC	ZC	ZC	C			C		ZC	ZC
3.120 Operations designed to attract little or no customer or client traffic other than employees of the entity operating the principal use								ZC	ZC	ZC	S		ZC	ZC	ZC	C			C	C	Z	ZC
3.130 Office or clinics of physicians or dentists with not more than 10,000 square feet of gross floor area								ZC	ZC	ZC	S		ZC	ZC		ZC			C		ZC	ZC
3.140 Watershed research																	C					
3.150 Copy Centers/Printing Operations								ZC	ZC	ZC	S	ZC	ZC	ZC	ZC	ZC			ZC		ZC	

# TABLE OF PERMISSIBLE USES

Last Amended: 4/23/13

DESCRIPTION	R-2	R-3	R-7.5	R-SIR, SIR2, 10	R-15	R-20	RR	B-1 (C)	B-1 (G)	B-2	B-3	B-3-T	B-4	M-1	M-2	CT	C	W-R	B-5	WM-3	O	O/A	
3.200 Operations conducted within or outside fully enclosed buildings																							
3.210 Operations designed to affect and serve customers or clients on the premises														ZC	ZC				C			ZC	
3.220 Operations designed to attract little or no customer or client traffic other than employees of the entity operating the principal use														ZC	ZC	C			C	C		ZC	
3.230 Banks with drive-in window											C	C	C		C								
3.240 Watershed research																	C						
3.250 Automatic Teller Machine, Freestanding								C	C												C	C	
<b>4.000 Manufacturing, Processing, Creating, Repairing, Renovating, Painting, Cleaning, Assembling of Goods, Merchandise and Equipment</b>																							
4.100 All operations conducted entirely within fully enclosed buildings									ZC					ZC	ZC	C				C		C	
4.200 Operations conducted within or outside fully enclosed buildings															ZC								
<b>5.000 Educational, Cultural, Religious, Philanthropic, Social, Fraternal Uses</b>																							
5.100 Schools																							
5.110 Elementary and secondary (including associated grounds and athletic and other facilities)	C	C	C	C	C	C	C	C	C				Z(1)					Z	C				
5.120 Trade or vocational school								Z	ZC					C	ZC	C	C			C			
5.130 Colleges, universities, community colleges (including associated facilities such as dormitories, office buildings, athletic fields, etc)							C	Z	ZC					C	C		C						
5.200 Churches, synagogues and temples (including associated residential structures for religious personnel and associated buildings but not including elementary school buildings) school or secondary	ZS	ZS	ZS	ZS	ZS	ZS	ZS	Z	ZC	ZC	ZC	ZC	ZC	ZC		ZC		C	C		ZS	ZS	
5.300 Libraries, museums, art galleries, art centers and similar uses (including associated educational and instructional activities)																							
5.310 Located within a building designed and previously occupied as a residence or within a building having a gross floor area not in excess of 3,500 square feet	S	S	S	S	S	S	S	ZC	Z	Z	Z	Z	S	ZC		ZC			C		Z	ZS	
5.320 Located within any permissible structures								ZC	ZC	ZC				S	ZC		ZC			C		C	ZS
5.400 Social, fraternal clubs and lodges, union halls, and similar uses								ZC	ZC	ZC				S	S		ZC			C			
<b>6.000 Recreation, Amusement, Entertainment</b>																							
6.100 Activity conducted entirely within building or substantial structure																							
6.110 Bowling alley, skating rinks, indoor tennis and squash courts, billiards and pool halls, indoor athletic and exercise facilities and similar uses.								ZC	ZC			ZC	ZC	ZC	ZC		ZC			C			

# TABLE OF PERMISSIBLE USES

Last Amended: 4/23/13

DESCRIPTION	R-2	R-3	R-7.5	R-SIR, SIR2, 10	R-15	R-20	RR	B-1 (C)	B-1 (G)	B-2	B-3	B-3-T	B-4	M-1	M-2	CT	C	W-R	B-5	WM-3	O	O/A
6.120 Movie Theaters																						
6.121 Seating capacity of not more than 300								ZC	ZC				ZC	S		ZC						S
6.122 Unlimited Seating Capacity								S	ZC				ZC	S		ZC						
6.130 Coliseums, stadiums, and all other facilities listed in the 6.100 classification designed to seat or accommodate simultaneously more than 1000 people								C	C				C	C		C						
6.140 Community Center--a Town sponsored, non-profit indoor facility providing for one or several of various type of recreational uses. Facilities in a Community Center may include, but are not limited to gymnasias, swimming pools, indoor court areas, meeting/activity rooms, and other similar uses	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z		Z	Z		Z
6.150 Electronic Gaming Operations													S									
6.200 Activity conducted primarily outside enclosed buildings or structures.																						
6.210 Outdoor recreational facilities developed on private lands, without Town sponsorship or investment, such as golf and country clubs, swimming or tennis clubs, etc. and not constructed pursuant to a permit authorizing the construction of a residential development.	S	S	S	S	S	S	S		C							C	C	C	C			
6.220 Outdoor recreational facilities developed on public lands, or on private lands with swimming pools, parks, etc., not constructed pursuant to a permit authorizing the construction of another use such as a school																						
6.221 Town of Carrboro owned and operated facilities.	Z	Z	Z	Z	Z	Z	Z	Z	Z				Z	Z		Z	Z	Z	Z	Z		
6.222 Facilities owned and operated by public entities other than the Town of Carrboro	C	C	C	C	C	C	C	C	C				C	C		C	C	C	C	C		
6.230 Golf driving ranges not accessory to golf course, par 3 golf courses, miniature golf course, skateboard parks, water slides, and similar uses.														ZC						C		
6.240 Horseback riding stables (not constructed pursuant to permit authorizing residential development)							S							S			Z	C	C			
6.250 Automobile and motorcycle racing tracks															S							
6.260 Drive-in Movie Theaters														C								
<b>7.000 Institutional Residence or Care of Confinement Facilities</b>																						
7.100 Hospitals, clinics, other medical (including mental health) treatment facilities in excess of 10,000 square feet of floor area									C							C						

# TABLE OF PERMISSIBLE USES

Last Amended: 4/23/13

DESCRIPTION	R-2	R-3	R-7.5	R-SIR, SIR2, 10	R-15	R-20	RR	B-1 (C)	B-1 (G)	B-2	B-3	B-3-T	B-4	M-1	M-2	CT	C	W-R	B-5	WM-3	O	O/A
7.200 Nursing care institutions, intermediate care institutions, handicapped, aged or infirm institutions, child care institutions	C	C					C		C							C			C			
7.300 Institutions (other than halfway houses) where mentally ill persons are confined									C							C						
7.400 Penal and Correctional Facilities																						
<b>8.000 Restaurants (including food delivery services), Bars, Night Clubs</b>																						
8.100 Restaurant with none of the features listed in use classification below as its primary activity								ZC	ZC(l)	C			Z						C			ZC
8.200 Outside Service or Consumption								ZC	ZC(l)	C			S						C			ZC
8.300 Drive-in (service to and consumption in vehicle on premises)													C									
8.400 Drive Through Windows (service directly to vehicles primarily for off-premises consumption)													C									
8.500 Carry Out Service (food picked up inside of off-premises consumption)								ZC	ZC(l)				Z						C			
8.600 Food Delivery								ZC	ZC(l)				Z						C			
8.700 Mobile prepared food vendors								Z	Z					Z								
<b>9.000 Motor Vehicle-Related Sales and Service Operations</b>																						
9.100 Motor vehicle sales or rental of sales and service									C					ZC	ZC							
9.200 Automobile service stations													S	C	Z							
9.300 Gas sales operations											S	S	S	C	Z							
9.400 Automobile repair shop or body shop									C			S	S	C	Z							
9.500 Car wash														C	Z							
<b>10.000 Storage and Parking</b>																						
10.100 Independent automobile parking lots or garages								ZC	Z				Z	Z	Z	C						
10.200 Storage of goods not related to sale or uses of those goods on the same lot where they are stored																						
10.210 All storage within completely enclosed structures														Z	Z							C
10.220 Storage inside or outside completely enclosed structures														C	Z							ZC
10.300 Parking of vehicles or storage of equipment outside enclosed structures where: (i) vehicles or equipment are owned and used by the person making use of the lot, and (ii) parking or storage is more than a minor and incidental part of the overall use made of the lot														S	S							
<b>11.000 Scrap Materials Salvage Yards, Junkyards, Automobile Graveyards</b>															S							
<b>12.000 Services and Enterprises Related to Animals</b>																						
12.100 Veterinarian							S		ZC				S	S	S							
12.200 Kennel							S							S	S							
<b>13.000 Emergency Services</b>																						
13.100 Police Stations	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
13.200 Fire Stations	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
13.300 Rescue Squad, Ambulance Service	S	S	S	S	S	S	Z		S	S	S	S	S	S	Z	S	C	C	C	C	S	S
13.400 Civil Defense Operation	S	S	S	S	S	S	Z		S	S	S	S	S	S	Z	S	C	C	C	C	S	S
<b>14.000 Agricultural, Silvicultural, Mining, Quarrying Operations</b>																						
14.100 Agricultural operations, farming																						
14.110 Excluding livestock		Z	Z	Z	Z	Z	Z								Z		Z	Z	Z			
14.120 Including livestock							Z										Z	Z	Z			
14.200 Silvicultural operations		Z	Z	Z	Z	Z	Z								Z							

# TABLE OF PERMISSIBLE USES

Last Amended: 4/23/13

DESCRIPTION	R-2	R-3	R-7.5	R-SIR, SIR2, 10	R-15	R-20	RR	B-1 (C)	B-1 (G)	B-2	B-3	B-3-T	B-4	M-1	M-2	CT	C	W-R	B-5	WM-3	O	O/A
14.300 Mining or quarrying operations, including on-site sales of products															S							
14.400 Reclamation landfill		Z	Z	Z	Z	Z	Z						Z	Z	Z							
<b>15.000 Miscellaneous Public and Semi-Public Facilities</b>																						
15.100 Post Office								C	C		C	C	C	C	C	C						
15.200 Airport							C		S				S	S								C
15.300 Sanitary landfill							C							C								
15.400 Military reserve, National Guard centers														Z								
15.500 Recycling materials collection operations																						
15.510 Using collection facilities other than motor vehicles									Z				Z	Z	Z							
15.520 Aluminum recycling using motor vehicles									S				S	S	S							
15.600 Public utility service complex																			C			
15.700 Cable Television Signal Distribution Center								S	S	S	S		S	S	S	S					S	S
<b>15.800 Town-owned and/or Operated Facilities and Services</b>																						
15.810 Town-owned and/or Operated Public Parking Lot								Z	Z	Z	Z	Z	Z	Z	Z	Z				Z		Z
15.820 All other town-owned and/or operated facilities and services	Z	Z	Z	Z	Z	Z	Z		Z		Z	Z		Z	Z	Z	Z	Z	Z	Z	Z	Z
<b>16.000 Dry Cleaner, Laundromat</b>																						
16.100 With drive-in windows											C	C	C	C								C
16.200 Without drive-in windows									Z		S	S	Z	S		Z			C			S
<b>17.000 Utility Facilities</b>																						
17.100 Neighborhood	S	S	S	S	S	S	S		S	S	S	S	S	S	S	S	C	C	C			S
17.200 Community or regional														S	S		C		C			S
17.300 Cable Television Satellite Station							S			S	S	S	S	S	S	S					S	S
17.400 Underground Utility Lines	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	C	C	Z	C	Z	Z
<b>18.000 Towers and Related Structures</b>																						
18.100 Towers and antennas fifty feet tall or less	Z	Z	Z	Z	Z	Z	Z	Z	Z		Z	Z	Z	Z	Z	Z	Z	C	Z			Z
18.200 Towers and antennas attached thereto that exceed 50 feet in height, and that are not regarded as accessory to residential users under 15-150(c)(5)							C	C			C	C	C	C	C	C			C	C	C	C
18.300 Antennas exceeding 50 feet in height attached to structures other than towers, [other than accessory uses under 15-150(c)(5)]	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
18.400 Publicly-owned towers and antennas of all sizes that are used in the provision of public safety services									ZC													
<b>19.000 Open Air Markets and Horticultural Sales</b>																						
19.100 Open air markets (farm and craft markets, flea markets, produce markets)								ZC	ZC	ZC	S	S		S		S					S	S
19.200 Horticultural sales with outdoor display									ZC	ZC	S	S		S		S					S	S
19.300 Seasonal Christmas or pumpkin sales								Z	Z	Z	Z	Z	Z	Z	Z						Z	Z
<b>20.000 Funeral Homes</b>														Z	Z							
<b>21.000 Cemetery and Crematorium</b>																						
21.100 Town-owned cemetery	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
21.200 All other cemeteries							S							Z	Z		C	C	C			
21.300 Crematorium														Z	Z							
<b>22.000 Day Care</b>																						
22.100 Child Day Care Home	ZZ	Z	Z	Z	Z	Z	Z	S	S	Z	S	S				Z		Z			S	S
22.200 Child Day Care Facility	S	S	S	S	S	S	S	Z	Z	Z	Z	Z	Z	Z		Z		C	C		Z	Z
22.300 Senior Citizens Day Care, Class A	S	S	S	S	S	S	S		Z	Z	Z	Z	Z	Z		Z		C	C		Z	Z
22.400 Senior Citizens Day Care, Class B	S	S	S	S	S	S	S	Z	Z	S	Z	Z	S	Z		S					Z	Z

# TABLE OF PERMISSIBLE USES

Last Amended: 4/23/13

DESCRIPTION	R-2	R-3	R-7.5	R-SIR, SIR2, 10	R-15	R-20	RR	B-1 (C)	B-1 (G)	B-2	B-3	B-3-T	B-4	M-1	M-2	CT	C	W-R	B-5	WM-3	O	O/A
<b>23.000 Temporary structure or parking lots used in connection with the construction of a permanent building or for some non-recurring purpose</b>																						
23.100 Temporary structures located on same lot as activity generating need for structure	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	C	C	C	C	Z	Z
23.200 Temporary parking facilities located on or off-site of activity generating need for parking	Z																					
<b>24.000 Bus Station</b>									ZC				S	S		S						
<b>25.000 Commercial Greenhouse Operations</b>																						
25.100 No on-premises sales						S	S							Z								
25.200 On-premises sales permitted							S							Z								
<b>26.000 Subdivisions</b>																						
26.100 Major	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	C	C	C	C	SC	SC
26.200 Minor	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	C	C	C	C	Z	Z
<b>27.000 Combination Uses</b>	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	C	*	*	*	*
<b>28.000 Planned Unit Developments</b>	Permissible only in Planned Unit Development Districts (See Section 15-139) pursuant to a conditional use permit).																					
<b>29.000 Special Events</b>	C	C	C	C	C	C	C	ZC	ZC	ZC	C	C	C	C	C	C	C	C	C	C	C	C
<b>30.000 Planned Industrial Development</b>	Permissible only in Planned Industrial Development Districts [See Subsection 15-137(c)] pursuant to a conditional use permit																					
<b>31.000 Off-Premises Signs</b>															Z							
<b>32.000 Village Mixed Use Development</b>	Permissible only in Village Mixed Use Districts (See Section 15-141.2 pursuant to a conditional use permit).																					
<b>33.000 Office/Assembly Planned Development</b>	Permissible only in Office/Assembly Conditional Use Districts [see Subsection 15-136(11)] pursuant to a conditional use permit].																					
<b>34.000 Temporary Lodging</b>																						
34.100 Hotels and Motels	C							C	C				C			C						C
34.200 Bed and Breakfast	S	S	S	S	S	S	S			S						S		C	S			

*Art. X PERMISSIBLE USES (con't)***Section 15-147 Use of the Designations Z,S,C in Table of Permissible Uses (AMENDED 11/18/03; 6/22/04; 10/25/05; 11/22/05; 6/26/07; 11/27/07; 10/28/08, 11/24/09. REWRITTEN 4/23/09)**

(a) Subject to Section 15-148, and subsection (h) of this section, when used in connection with a particular use in the Table of Permissible Uses (Section 15-146), the letter “Z” means that the use is permissible in the indicated zone with a zoning permit issued by the administrator (except that, in connection with use classification 26.200, minor subdivisions, the letter “Z” means that final plat approval shall be granted by the Planning Director). The letter “S” means a special use permit must be obtained from the board of adjustment, and the letter “C” means a conditional use permit must be obtained from the Board of Aldermen. **(AMENDED 1/22/85; 11/18/03)**

(b) When used in connection with single-family, two-family and multi-family residences (use classifications 1.100, 1.200 and 1.300) outside the watershed districts, the designation “ZSC” or “SC” means that tracts developed with four dwelling units or less require a zoning permit, tracts developed with between five and twelve dwelling units require a special use permit, and tracts developed with more than twelve dwelling units require a conditional use permit. When used in connection with single-family, two-family, and multi-family residences in the watershed districts, the designation “ZC” means that tracts developed with one dwelling unit shall require a zoning permit and tracts developed with two or more dwelling units shall require a conditional use permit. **(AMENDED 1/22/85; 2/24/87; 12/15/87)**

(c) When used in connection with major subdivisions (use classification 26.100) outside the watershed districts, the designation “SC” means that subdivisions containing between five and twelve lots shall require a special use permit, and subdivisions containing thirteen or more lots shall require a conditional use permit. **(AMENDED 7/21/87; 12/15/87)**

(d) Subject to Section 15-148, use of the designation “ZC” (which designation appears only under the zoning district columns applicable to the commercial and manufacturing districts) means that a conditional use permit must be obtained if the development involves the construction of more than 3,000 square feet of new building gross floor area *or* the development is located on a lot of more than one acre, and a zoning permit must be obtained if the development involves the construction of 3,000 square feet or less of new building gross floor area *and* the development is located on a lot of one acre or less. **(AMENDED 11/14/88) (REWRITTEN 4/23/13)**

(e) Subject to Section 15-148, use of the designation “Z,S” means that a zoning permit must be obtained if the development is located on a lot of two acres or less while a special use permit must be obtained for developments in excess of two acres.

(f) Use of the designation Z,S,C, for combination uses is explained in Section 15-154.

(g) When used in connection with use classification 18.400 (publicly-owned towers and antennas of all sizes that are used in the provisions of public safety services), the designation “ZC” means that the development of such towers that are fifty feet tall or less

*Art. X PERMISSIBLE USES (con't)*

shall require a zoning permit, and the development of such towers that are more than fifty feet tall shall require a conditional use permit. **(AMENDED 10/04/88, 02/18/97)**

- (h) Whenever any 1.000 classification use is proposed for a lot in the R-2, R-3, R-7.5, and R-10 zoning districts and such use would otherwise require the issuance of a zoning permit under the provisions of this section, a special use permit shall nevertheless be required if:
  - (1) The use involves (i) construction of an addition to an existing dwelling, or (ii) construction of an additional dwelling on a lot where at least one dwelling already exists, or (iii) construction of a dwelling on a lot from which a previously existing dwelling has been removed within a period of three years prior to the application for a permit under this chapter, and
  - (2) The gross floor area of any one dwelling unit exceeds 3,500 square feet, or the gross floor area of all dwellings covered by the proposed permit exceeds 5,500 square feet.
  - (3) This requirement shall not apply if at least one of the dwelling units is an affordable housing unit as defined in Section 15-182.4(a).
  - (4) This requirement shall not apply with respect to a proposed one-time addition to a dwelling that has been in existence for a period of at least twenty years if such one-time addition results in less than a 25 percent increase in the gross floor area of such dwelling and less than a 15 percent increase in the gross floor area of all dwellings covered by the proposed permit.
- (i) When used in connection with 8.100, 8.200, 8.500 and 8.600 uses, the designation "ZC(1)" means that a zoning permit must be obtained if the total area within a development to be used for this purpose does not exceed 1,500 square feet and the use is to take place in a building in existence on the effective date of this subsection while a conditional use permit must be obtained whenever the total area to be used for this purpose is equal to or exceeds 1,500 square feet.
- (j) Notwithstanding the other provisions of this section, whenever a building of more than two stories or 35 feet in height is proposed within the B-1(g), B-1(c), B-2, CT or M-1 zoning districts, a conditional use permit must be obtained from the Board of Aldermen. **(AMENDED 10/25/05)**
- (k) Notwithstanding the foregoing, Uses 22.200 Child Day Care Facilities serving nine to fifteen children, and 22.300 Senior Citizen Day Care, Class A, serving four to sixteen seniors, that are located on collector or arterial streets are permissible with a Zoning Permit issued by the

*Art. X PERMISSIBLE USES (con't)*

Administrator. For the purposes of this section, collector streets are those streets whose function and design meet the current town standards for classification as collector streets; and arterial streets are those listed in subsection 15-210.

l) Notwithstanding the foregoing, if a use within use classifications 2.112, 2.120, 2.150, 2.220, 2.230, 3.120, or 3.220 is proposed for an existing building within the WM-3 zoning district, and no other changes to the site are proposed that would require the issuance of a new permit under Section 15-46, then such use shall be permissible with a zoning permit. **(Amended 10/28/08)**

m) Notwithstanding the foregoing, 5.110 uses may be permitted within the B-4 zoning district only when proposed within an existing building and when no other changes to the site are proposed that would require the issuance of a new permit under Section 15-46. **(AMENDED 11/24/09)**

**Section 15-148 Board of Adjustment Jurisdiction Over Uses Otherwise Permissible With a Zoning Permit.**

(a) Notwithstanding any other provisions of this article, whenever the Table of Permissible Uses (interpreted in the light of Section 15-147 and the other provisions of this article) provides that a use is permissible with a zoning permit, (i) a conditional use permit shall nevertheless be required if the administrator finds that the proposed use is located within the University Lake Watershed (i.e., the C, B-5, and WM-3 districts) and would have a substantial impact on neighboring properties or the general public, and (ii) a conditional use permit shall nevertheless be required if the administrator finds that the proposed use is located in the B-1(c), B-1(g), B-2, or CT zoning districts, the use is shown as permissible in those districts with a "ZC" designation in the Table of Permissible Uses, and the proposed use would have a substantial impact on neighboring properties or the general public; (iii) otherwise, a special use permit shall nevertheless be required if the administrator finds that the proposed use would have a substantial impact on neighboring properties or the general public. **(AMENDED 01/22/85; 12/15/87; 02/25/92)**

(b) A special use permit shall be required for any use that is otherwise permissible with a zoning permit if the administrator concludes that, given the impact of the proposed use on neighboring properties, the vested right conferred upon the permit recipient pursuant to Section 15-128.2 should not be conferred without an opportunity for public input. A conditional use permit shall be required for any use that is otherwise permissible with a zoning permit if the administrator concludes that, given the impact of the proposed use on the general public, the vested right conferred upon the permit recipient pursuant to Section 15-128.2 should not be conferred without an opportunity for public input. However, if the zoning administrator makes this determination, the permit applicant may require that the application be returned to the zoning permit process by submitting to the administrator a written waiver of the vested right normally acquired under Section 15-128.2 upon the issuance of a zoning permit. **(AMENDED 10/01/91; 02/25/92)**

**Section 15-149 Permissible Uses and Specific Exclusions** **(AMENDED 6/24/08)**



# Town of Carrboro

Town Hall  
301 W. Main St.  
Carrboro, NC 27510

## Agenda Item Abstract

**File Number:** 14-0178

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**Agenda Date: Version:** 1  
5/27/2014

**Status:**  
Consent  
Agend  
menFile  
**Type:** Abst

**In Control:**  
Board of A

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### TITLE:

Approval of Abstract of Votes Cast at the May 6, 2014 Election

**PURPOSE:** The purpose of this item is for the Mayor and Board of Aldermen to consider approval of the Abstract of Votes Cast at the May 6, 2014 Election.

**DEPARTMENT:** Town Clerk

**CONTACT INFORMATION:** Cathy Wilson, 918-7309

**INFORMATION:** Orange County Board of Elections supplied the attached Abstract of Votes Cast from the May 6, 2014 Election. The Board of Aldermen will consider approving the Abstract.

**FISCAL & STAFF IMPACT:** N/A

**RECOMMENDATION:** It is recommended that the Mayor and Board adopt the attached resolution approving the Abstract of Votes Cast at the May 6, 2014 Election.

OFFICIAL CANVASS

Orange County, NC  
Primary Election  
May 6, 2014

RUN DATE:05/21/14 01:09 PM

0011\_CARRBORO ALDERMEN (UNEX)

Select 1

	B	E	C	T	W		W
	e	.	h	h	a		R
T	A	t	a	e	t		I
a	s	h	n	r	s		T
l	a	a	e	e	o		E
a	d	n	y	s	n		I
l	y			a			N

0004 CB CB CARRBORO	34	186	50	2
0015 DM DM DAMASCUS	20	59	24	2
0025 HF HF HOGAN FARMS	45	140	83	6
0027 LC LC LIONS CLUB	52	144	104	5
0030 NC NC NORTH CARRBORO	45	226	85	3
0033 OW OW OWASA	24	103	71	2
0036 SJ SJ ST JOHN	1	3	1	0
0038 TH TH TOWN HALL	46	178	55	2
0045 OS BOE	0	3	3	0
0046 OS CARRBORO	66	435	173	4
0047 OS SEYMOUR	17	119	71	2
0048 OS MASTERS	0	0	0	0
0049 OS HILLEL	1	24	19	0
0050 ABSENTEE BY MAIL	3	16	6	0
0051 PROVISIONAL	0	0	0	0
CANDIDATE TOTALS	354	1636	745	28
CANDIDATE PERCENT	12.81	59.21	26.96	1.01



# Town of Carrboro

Town Hall  
301 W. Main St.  
Carrboro, NC 27510

## Agenda Item Abstract

**File Number:** 14-0180

**Agenda Date: Version:** 1  
5/27/2014

**In Control:**  
Board of A

**Status:**  
Consent  
Agend  
menFile  
**Type:** Abst

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### TITLE:

Establishment of a Charge for the Temporary Energy and Climate Planning Task Force

**PURPOSE:** The purpose of this item is for the Board of Aldermen to consider adopting a charge for a temporary Energy and Climate Planning Task Force, designed to spearhead the community portion of the Town's Energy and Climate Protection Plan. A draft charge has been prepared for the Board's consideration.

**DEPARTMENT: Planning**

**CONTACT INFORMATION:** Randy Dodd, 919-918-7326; Christina Moon - 919-918-7325; Cathy Wilson - 919-918-7309.

**INFORMATION:** At the May 20, 2014 meeting, the Board received a draft of the Energy and Climate Protection Plan report, an interdepartmental effort to improve energy efficiency within the Town operations and reduce greenhouse gas emissions. The report has been designed as two parts. The first portion, which focuses on Town operations, is largely underway with a link to the Capital Improvement Plan (CIP). The second portion of the plan envisioned as community outreach and education would focus on programs relating to what local residents can do to reduce greenhouse gas emissions. The May 20<sup>th</sup> agenda item included a resolution for the creation of a temporary task force charged with facilitating the community component of the Energy and Climate Protection Plan.

Staff anticipates that the proposed task force will consist of seven members, who will meet for a period of approximately one year beginning in the summer of 2014. Members will be charged with supporting Town staff with the preparation of the community sector of the Energy and Climate Protection Plan to include assistance with the proposed outreach forum scheduled for the fall of 2014 as part of the Planning Board's annual community planning month activities.

**FISCAL & STAFF IMPACT:** Costs are associated with advertising for task force membership, staff support for the task force, and outreach and education efforts. Costs for these activities are expected to be covered by currently budgeted funds.

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**Agenda Date: Version: 1**  
5/27/2014

**Status:**  
Consent  
Agend  
menFile  
**Type:**Abst

**In Control:**  
Board of A

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**RECOMMENDATION:** Staff recommends that the Board of Aldermen consider the attached resolution, establishing the charge for the temporary Energy and Climate Protection Planning Task Force and directing the Town Clerk to begin advertising for applicants.

A RESOLUTION ESTABLISHING A CHARGE FOR THE TEMPORARY ENERGY AND CLIMATE PROTECTION PLANNING TASK FORCE

WHEREAS, the Board of Aldermen at its meeting on May 20, 2014 adopted a resolution establishing a seven-member temporary Energy and Climate Protection Planning Task Force; and

WHEREAS, the Energy and Climate Protection Planning Task Force shall be charged to support the Town with community planning for climate protection and resiliency; and

WHEREAS, the Energy and Climate Protection Planning Task Force shall prepare a report to submit to the Board of Aldermen by June, 2015 that addresses, at a minimum:

- a. Recommendations for new actions the Town can pursue to reduce nonrenewable energy use and greenhouse gas emissions from residential and commercial buildings in Carrboro
- b. Recommendations for new actions the Town can pursue to reduce nonrenewable energy use associated with transportation in Carrboro
- c. Recommendations for new actions the Town can pursue to promote renewable energy in Carrboro
- d. Recommendations for new actions the Town can pursue to better manage vegetation, soil, and impervious surfaces to capture carbon, reduce energy use in buildings, mitigate the heat island effect, and reduce stormwater runoff
- e. Any other recommendations the Task Force wishes to propose related to energy use and production and climate protection
- f. Any other recommendations the Task Force wishes to propose related to local resiliency in consideration of climate change; and

WHEREAS, the Task Force shall meet in accordance with the following procedures:

- a. The Task Force shall meet in the evening on the 3rd Thursday of the month
- b. A chair and vice chair shall be selected at its first meeting
- c. A member who misses three consecutive meetings may be dismissed from the Task Force
- d. All meetings will be open public meetings; and

WHEREAS, the first task of the Task Force shall be to create a draft report outline and schedule of topics for monthly meetings to help focus and organize its scope of work; and

WHEREAS, the final meeting shall be reserved to review and approve a draft report; and

WHEREAS, the Task Force may wish to organize participation and subgroups around specific topics to help focus the work and facilitate participation; and

WHEREAS, the Task Force shall coordinate its work with related Town climate planning activities.

NOW, THEREFORE, BE IT RESOLVED by the Carrboro Board of Aldermen that the Board adopts the charge for the Energy and Climate Protection Planning Task Force and directs the Town Clerk to begin advertising for membership.

BE IT FURTHER RESOLVED that the Board adds the following directives to the Energy and Climate Protection Planning Task Force's duties:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

This is the 27th day of May in the year 2014.



# Town of Carrboro

Town Hall  
301 W. Main St.  
Carrboro, NC 27510

## Agenda Item Abstract

**File Number:** 14-0154

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**Agenda Date: Version:** 1  
5/27/2014

**Status:**  
Agenda

**n Control:**  
Board of Ald

Ready   
**nFile Type:**  
Abstra

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### **TITLE:**

Endorsement of Recreational Trails Program Grant Applications for the Morgan Creek Greenway

**PURPOSE:** The Board is asked to endorse two Recreational Trails Program (RTP) grant applications that would contribute to funding the construction of Phases 1 and 2 of the Morgan Creek Greenway.

**DEPARTMENT:** Planning

**CONTACT INFORMATION:** Jeff Brubaker - 918-7329

**INFORMATION:** Preliminary engineering for Phases 1 and 2 of the Morgan Creek Greenway is currently at the 90 percent plan stage.

The most recent engineer's estimate provided by Coulter Jewell Thames indicates a total cost of Morgan Creek Phases 1 and 2 to be \$1,135,000, including contingency. The Town estimates that construction engineering will cost an additional \$147,750. Accounting for existing preliminary engineering costs and current federal STP-DA and local revenues, staff estimate that there is a funding shortage of \$919,224 to fully build the project from Smith Level Rd. to Chapel Hill Tennis Club/Weatherhill Pointe.

The Town is seeking additional STP-DA funding from the MPO to address this funding gap. Another potential federal funding source is the Recreational Trails Program (RTP). Both sources require a minimum 20 percent non-federal match.

The North Carolina Division of Parks and Recreation is accepting applications for RTP grants for trail projects in the state. Pre-applications for two grants of \$100,000 each were submitted by Town staff in November 2013. Town staff propose to submit applications for the same amounts. One grant is for FY14 and another is for FY15 (subject to funding availability). Applications are due on June 6.

The application requires the following: "Resolution of Governing Body or commitment letter supporting at least a 25% match and completion of project within 2 year time frame." (The 25% here refers to 25% of the RTP grant funding requested - rather than 25% of the total cost - so this is the same proportion as what for other funding is referred to as the "20% local match".)

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**Agenda Date: Version: 1**  
5/27/2014

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Last month, the Board of Aldermen adopted a resolution adding the Morgan Creek Greenway as a priority project for enhancing access to transit and receiving half-cent transit sales tax revenues.

**FISCAL & STAFF IMPACT:** The fiscal impact of the resolution relates to the expressed support for a local match. As noted, the Board has expressed support for use of transit access funds as a local match.

**RECOMMENDATION:** Staff recommend that the Board of Aldermen adopt the resolution in Attachment A endorsing the grant applications.

**A RESOLUTION ENDORSING RECREATIONAL TRAILS PROGRAM GRANT APPLICATIONS**

WHEREAS, the Board of Aldermen adopted the Morgan Creek Greenway Conceptual Master Plan on March 16, 2010; and,

WHEREAS, the Town is now implementing preliminary engineering for Phases 1 and 2 of the greenway, including the addition of Alternate Phase 1; and,

WHEREAS, when completed, the first phases – and ultimately the full buildout – of the greenway will provide enhanced recreational opportunities for thousands of southern Carrboro residents; and,

WHEREAS, the Morgan Creek Greenway is identified by the Carrboro Comprehensive Bicycle Transportation Plan as the future east-west spine of the Carrboro's bicycle network; and,

WHEREAS, costs to complete Phases 1 and 2 of the greenway exceed currently available revenues; and,

WHEREAS, the North Carolina Division of Parks and Recreation is administering Recreational Trails Program funding to support trail projects statewide;

NOW, THEREFORE BE IT RESOLVED by the Carrboro Board of Aldermen that the Board:

1. Endorses the Recreational Trails Program grant applications for FY14 and FY15 for the construction of Phases 1 and 2 of the Morgan Creek Greenway;
2. Commits to providing, in the event the grant is awarded, a non-federal match (consistent with the stipulations of the grant) equal to at least 25 percent of the RTP funding awarded.

This is the 27<sup>th</sup> day of May in the year 2014.



# Town of Carrboro

Town Hall  
301 W. Main St.  
Carrboro, NC 27510

## Agenda Item Abstract

**File Number:** 14-0099

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**Agenda Date: Version:** 1  
5/27/2014  
**In Control:**  
Board of Al

**Status:** Other  
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**enFile Type:**  
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### **TITLE:**

Update on Implementation of Camera Technology for Police Department

**PURPOSE:** To update the Board on police department development of policies concerning vehicle and body-worn cameras.

**DEPARTMENT:** Police Department

**CONTACT INFORMATION:** Chief Walter Horton, [whorton@townofcarrboro.org](mailto:whorton@townofcarrboro.org)  
<<mailto:whorton@townofcarrboro.org>>; Captain Chris Atack, [catack@townofcarrboro.org](mailto:catack@townofcarrboro.org)

**INFORMATION:** This update will address questions raised by the Board on the use of camera policy, operation, and training.

**FISCAL & STAFF IMPACT:** At this time none.

**RECOMMENDATION:** The Board offer comment on the current police department policy iteration.



# Town of Carrboro

Town Hall  
301 W. Main St.  
Carrboro, NC 27510

## Agenda Item Abstract

**File Number:** 14-0149

**Agenda Date: Version:** 1  
5/27/2014  
**In Control:**  
Board of Al

**Status:** Other  
Matters  
**enFile Type:**  
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### TITLE:

Affordable Housing Goals and Strategies, Part II

**PURPOSE:** The purpose of this item is for the Board of Aldermen to consider the goals and strategies associated with affordable rentals that have been developed by the Affordable Housing Task Force.

**DEPARTMENT:** Planning

**CONTACT INFORMATION:** Trish McGuire - 919-918-7327; [pmcguire@townofcarrboro.org](mailto:pmcguire@townofcarrboro.org)  
<<mailto:pmcguire@townofcarrboro.org>>, Alderman Michelle Johnson - [michelleforcarrboro@gmail.com](mailto:michelleforcarrboro@gmail.com)

**INFORMATION:** The Affordable Housing Task Force continues to consider comments provided by the Board of Aldermen at the February 2, 2014 retreat ( <https://carrboro.legistar.com/MeetingDetail.aspx?ID=278066&GUID=F2713EBD-9C05-4602-B308-7A16220066DD&Options=info|&Search>) and from Part I of this worksession, which was held on April 8, 2014 ( <https://carrboro.legistar.com/View.ashx?M=M&ID=301298&GUID=0DFEA55D-2952-4F00-9F9F-2314EAE5B891>), as well as other information provided by representatives of the affordable housing and development communities. An updated set of goals and strategies related to affordable rentals is included as Attachment A. Attachment B presents overarching priorities associated with the goals and strategies for supporting both affordable homeownership and rental opportunities. The schedule for consideration by the Board of Aldermen and the greater community has been modified slightly from that presented in April and is as follows:

Date	Action
April 8, 2014	Worksession on affordable homeownership, goals and strategies
May 13, 2014	Worksession on affordable rentals, goals and strategies and the allocation of affordable housing special revenue funds
June 17, 2014	Public Hearing on Affordable Housing Goals and Strategies

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**Agenda Date:** Version: 1  
5/27/2014  
**In Control:**  
Board of Al

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**FISCAL & STAFF IMPACT:** Nominal impacts associated with this worksession. Fiscal and staff impacts, as yet undetermined in extent, can be anticipated from implementation of goals and strategies.

**RECOMMENDATION:** Consider the goals and strategies and recommended schedule, and provide feedback to the Task Force.

	<b>Affordable Rentals (Target income is 60% or less of AMI)</b>				
	<b>Goal</b>	<b>Strategies</b>	<b>By When?</b>	<b>Partners/Resources Needed</b>	<b>Notes</b>
1)	Increase number of rental units that are permanently affordable to individuals and families earning less than 60% of AMI. 2014 goal: ###, increasing annually.	Better position the town for future affordable rental development /redevelopment opportunities by cultivating relationships with experienced non-profit affordable rental housing developers.	Ongoing	OC Housing Coalition, NC Housing Coalition, DHIC	
		Modify ordinance to reflect a model that will both incentivize developers to include affordable units in their rental developments while also responding to market conditions.	Q4 FY 2015	Developers/Property Owners, OC Housing Coalition	
		Work with Orange County, the University, and other landowners to examine, identify and reserve one or more tracts for future LIHTC and/or HUD-restricted rental communities.	Ongoing	Local governments, property owners, University	
2)	Reduce negative effects of parking requirements on rental prices.	Fully examine research and data regarding parking density and "bundling" to determine best approaches to achieve this goal.	Q4 FY 2016	Expect consultant to parking plan will provide some assistance. Possible UNC Planning Workshop.	
		Utilize Town's parking management policy to support this goal.	Q4 FY 2016	" "	
3)	Slow the pressure on rental prices by increasing rental housing stock, particularly in high-transit areas.	Examine and consider reducing restrictions on accessory dwelling units. This strategy has the potential to support homeownership affordability by enabling homeowners to generate income to support their homeownership costs.	With 1) above		*Could be in both places or all three places as an overarching strategy.
4)	Reduce erosion of rental housing quality and affordability	Research effective voluntary rental registry models and determine the efficacy of a similar program in Carrboro. If feasible, determine opportunities to implement a registry or rating system through a non-profit or other civic organization, with Town support.	With 1) above		
		Require all landlords with more than one unit of rental property to register for a business privilege license, and examine use of business regulations to enforce better stewardship of housing and neighborhoods.			
		Gather and examine rental housing data to better anticipate and monitor opportunities/conditions for redevelopment/rehabilitation.		OC Housing Coalition, Orange County HHRCD/Chapel Hill (Consolidated Plan partners)	
		Convene landlords and property managers on an annual (regular) basis to build positive relationships, educate about Carrboro's housing expectations and policies, and encourage transparency about redevelopment/rehab/sale plans.	Following 1) above and ongoing		
	Examine the current marketplace for mobile and modular homes.	Educate the Board of Aldermen about the difference between the housing styles and regulations that apply.	Q3 FY 2015		Could bring this up to the Housing Coalition and what do people prefer, smaller space or biggest cheapest place.

Overarching Priorities	Strategies		
Concerted Land Use Planning/small land use plan for three high priority/high potential areas.	1. Identify the three high priority/potential areas that are ripe for development or re-development. Could include: downtown, Jones Ferry Corridor, Estes Drive. 2. Consider the current planning processes that are underway and share coordination and overlap Example: the arts and creativity district.		
Improve opportunities for developers and potential partners to identify affordability in a project.	1. Include members of OCAHC in initial development review to encourage creative solutions/opportunities for affordable housing to be integrated into projects, and/or identify best opportunities to secure payment-in-lieu.		
Develop dedicated funding source--in partnership with county and peer municipalities	1) Explore the parameters of an AH Bond 2) Explore a public private fund for example TCF 3) Find out about tax deduction 4. Look to identify complimentary external funding that could be better leveraged with municipal participation. 5. Assessment of the most cost effective strategies-if we had a pot of money what is the best way to use it.	1. Potential Partners for complimentary funding sources- HOME Consortium, Con Planning Partners, OC Housing Coalition, DHIC 2. Staff will expand on why we would want to dedicate a funding source	Information to include - changes in HUD/CDBG priorities for funding - e.g. support for ED/Utility infrastructure rather than home repair.
Ensure implementation of the Affordable Housing Strategy	1. AH task force meeting quarterly. 2. Ensure operationalization and monitor progress of affordable housing plan by staffing at least 1/2 time 3. Continuing to look at data and continuing to understand it-existing stock-number of affordable units and distribution-including transit access, non-motorized travel, overlaid with the distribution of housing		
Provide greater incentives for developers to include affordable housing in their projects.	1. Expedited review for projects that include affordable housing component 2. Ask 3-5 developers to do an assessment of the costs for all of the LUO requirements-how much does this increase the cost per unit, or the rent per unit. 3. Evaluate the provision of public sector assistance for infrastructure in exchange for the provision of some percentage of affordable units (scaled).		
Reduce utility costs	Work with Owasa, Explore grants for energy efficiency		

<p>Acquisition of land/property-be proactive with OWASA in the land or parcels they are saying they will offer to municipalities first-Start to engage with them.</p>	<p>1. OWASA-example but there are other options 2. Consider condemned properties - provide an incentive for homeowner to sell loan fund for Habitat, Empowerment to allow for the property to be renovated and fixed up</p>	<p>Need to determine how and when to engage and evaluate potential sites.</p>	
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# Town of Carrboro

Town Hall  
301 W. Main St.  
Carrboro, NC 27510

## Agenda Item Abstract

**File Number:** 14-0155

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**Agenda Date: Version:** 1  
5/27/2014  
**In Control:**  
Board of Al

**Status:** Other  
Matters  
**enFile Type:**  
Abstr

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### **TITLE:**

Downtown Slow Zone Feasibility Report

**PURPOSE:** The report assesses the feasibility of implementing a slow zone in the central business district, following up on a Board of Aldermen resolution from February 18, 2014.

**DEPARTMENT:** Planning

**CONTACT INFORMATION:** Jeff Brubaker - 918-7329

**INFORMATION:** The report is included in Attachment B.

**FISCAL & STAFF IMPACT:** No fiscal and staff impacts accrue to receiving the report.

**RECOMMENDATION:** Staff recommend that the Board of Aldermen adopt the resolution in Attachment A receiving the report and consider providing direction on next steps.

**ATTACHMENT A**

**A RESOLUTION RELATING TO THE FEASIBILITY OF A DOWNTOWN SLOW ZONE**

WHEREAS, Carrboro Vision 2020, Objective 3.25, states: “Walkability should be encouraged downtown and pedestrian safety and comfort should be a goal. The town should improve lighting and shading, and create auto barriers”; and,

WHEREAS, *Downtown Carrboro: New Vision*, identified several barriers to walkability and offered several recommendations for walkability improvements; and,

WHEREAS, Seth LaJeunesse of the Transportation Advisory Board presented the concept of a downtown slow zone to the Board of Aldermen on February 18, 2014; and,

WHEREAS, the Board of Aldermen directed that staff prepare a feasibility report on the slow zone;

NOW, THEREFORE, BE IT RESOLVED by the Carrboro Board of Aldermen that the Board receives the feasibility report on a downtown slow zone.

BE IT FURTHER RESOLVED that:

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_

This is the 27<sup>th</sup> day of May in the year 2014.

# Downtown Slow Zone Feasibility Report

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Presented at the Carrboro Board of Aldermen meeting, May 27, 2014  
Carrboro Planning Department – Jeff Brubaker, Transportation Planner

## 1 Background

### 1.1 Board of Aldermen direction

On February 18, 2014, the Board of Aldermen received a presentation from Seth LaJeunesse of the Transportation Advisory Board on creating a slow zone in downtown Carrboro. The Board subsequently adopted the following language in a resolution:

NOW, THEREFORE, BE IT RESOLVED by the Carrboro Board of Aldermen that the Board receives the presentation on a downtown slow zone by the Transportation Advisory Board.

BE IT FURTHER RESOLVED that the Board of Aldermen directs staff to report to the Board of Aldermen on the feasibility of a downtown slow zone including:

- 1) The Arts Commission being involved in the gateway portion
- 2) Researching signal timing with Chapel Hill
- 3) Reporting how downtown businesses will be involved
- 4) Including a traffic study
- 5) Reporting back to the Board no later than three months

This feasibility report responds to the resolution.

### 1.2 What is a slow zone?

A slow zone is an area in which traffic calming measures are implemented to discourage motor vehicle traffic from exceeding a certain speed, typically 20 mph. The measures are commonly physical traffic calming measures, such as curb extensions, speed humps or cushions, textured pavement, or gateways.<sup>1</sup> They may be supplemented with traffic operations measures (such as modifying traffic signal timing), installing signage, or education campaigns.

### 1.3 Traffic speed and pedestrian safety

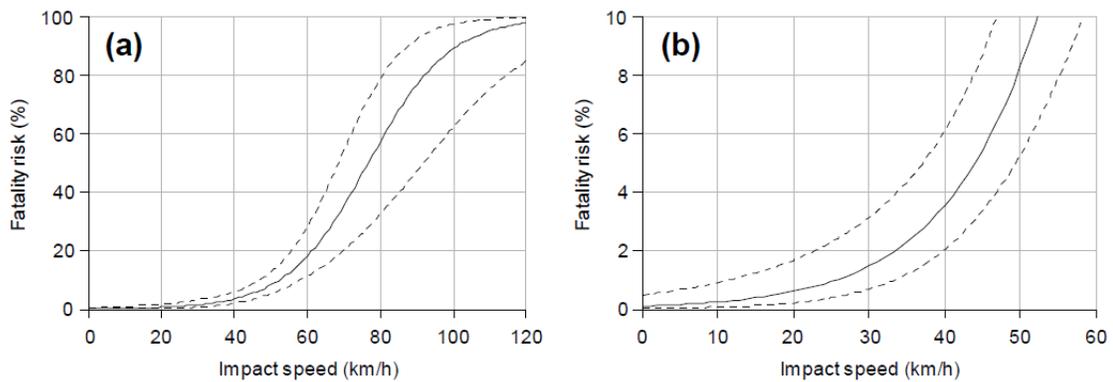
One purpose of slow zones is to reduce crash risk and severity. There is a correlation between the speed at which a motor vehicle is traveling when a collision with a pedestrian occurs and the probability that the pedestrian will be killed by the collision.

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<sup>1</sup> Grundy, C., R. Steinbach, P. Edwards, J. Green, B. Armstrong, P. Wilkinson. 2009. Effect of 20 mph traffic speed zones on road injuries in London, 1986-2006: controlled interrupted time series analysis. *British Medical Journal* 2009; 339:b4469 doi 10.1136/bmj.b4469.

A 2009 study using head-on, front-bumper, auto-pedestrian accident data from Germany from 1991-2003 examined the relationship between the speed of a motor vehicle upon impact during an auto-pedestrian collision and the likelihood of the pedestrian dying from the collision. For example, the study found a “strong dependence on impact speed...with the fatality risk at 50 km/h [31 mph] being more than twice as high as the risk at 40 km/h [25 mph] and more than five times higher than the risk at 30 km/h [19 mph]”.<sup>2</sup>

The study used logistical regression to “derive an analytical expression for the pedestrian fatality risk as a function of impact speed.” The function was then graphed. It is excerpted here below.



**Figure 1: Pedestrian fatality risk**

(a) The fatality risk as a function of impact speed for adult pedestrians hit by the front of a passenger car. The dotted curves show approximate 95% confidence limits. (b) Zoom in on the risk curve below 60 km/h.

As can be seen in the overall graph (a) and zoomed-in version (b) (note the different vertical axis scales), the fatality risk begins to increase rapidly at speeds higher than 50 km/h (31 mph). From 60 to 80 km/h (37 to 50 mph), the risk increases more than three times, from 18% to 57%. Even comparing fatality risk at lower speeds, there appears to be a non-negligible difference in fatality risk:

- At 20 mph, the function shows a fatality risk of 1.8%.
- Increasing to 25 mph, the fatality risk doubles but is still a relatively low 3.6%.
- Increasing to 30 mph, it doubles again to 7.2%.
- Increasing to 40 mph, it more than triples to 24.9%.

Some caveats and notes should be considered:

- The final sample size for the study consisted of 490 pedestrians and 36 fatalities.
- It is possible data in the U.S. could show a different risk curve.

<sup>2</sup> Rosen E. and U. Sander. 2009. Pedestrian fatality risk as a function of car impact speed. *Accident Analysis and Prevention*, 41 (2009), 536–542. Available at: [http://nacto.org/docs/usdg/pedestrian\\_fatality\\_risk\\_function\\_car\\_impact\\_speed\\_rosen.pdf](http://nacto.org/docs/usdg/pedestrian_fatality_risk_function_car_impact_speed_rosen.pdf).

- Other factors may play a role, such as improvements in trauma care, emergency response time, and size of vehicle.

#### 1.4 Slow zone implementation and effects

Analyses of the implementation of slow zones are summarized here.

- **New York City's** Neighborhood Slow Zones are roughly quarter-mile, primarily residential zones where the speed limit is reduced from 30 mph to 20 mph with traffic calming to encourage slower driving. As reported by NYCDOT, the “ultimate goal of the Neighborhood Slow Zone program is to lower the incidence and severity of crashes.” The identification of slow zones starts with applications from neighborhoods. They are selected based on factors such as crash history, support from the community, and proximity to schools, daycare centers, and senior centers. Slow zones feature gateway treatments and internal traffic calming. However (unlike the proposed Carrboro slow zone), they are implemented on neighborhood streets with relatively lower traffic volumes.<sup>3</sup>
- Since 2008, **New York City** has implemented pedestrian safety countermeasures in 37 Senior Pedestrian Focus Areas (SPFAs), identified in part by relatively higher senior pedestrian crash rates. The countermeasures include physical traffic calming, road diets, removing on-street parking spaces near crosswalks for increased visibility, signage, and signal enhancements (e.g. lengthening the walk phase). NYC DOT identified a modest decrease in senior pedestrian fatalities concurrent with the launch of the program.<sup>4</sup>
- A study of **London's** slow zones found that implementation of them “was associated with a reduction in casualties and collisions of around 40%”, with generally larger reductions of child casualties, injuries, and deaths. Reductions occurred at different magnitudes across all users studied: car occupants, motorcyclists, bicyclists, and pedestrians. The study reported somewhat ambivalent results for areas adjacent to slow zones.<sup>5</sup>
- Another **London** study showed an average reduction of 9 mph after slow zone implementation, resulting in an average speed of 17 mph.<sup>6</sup>
- Slow zones in **Barcelona** and the **Netherlands** have been reported to have lower crash rates after slow zone implementation.<sup>7</sup>
- **Paris** has established several specific area slow zones and is considering implementing a 30 km/h (19 mph) speed limit for the entire city.<sup>8</sup>

<sup>3</sup> <http://www.nyc.gov/html/dot/html/motorist/slowzones.shtml>

<sup>4</sup> <http://www.nyc.gov/html/dot/html/pedestrians/safeseniors.shtml> and <http://www.nyc.gov/html/dot/downloads/pdf/safestreetsforseniors.pdf>

<sup>5</sup> Grundy et al 2009

<sup>6</sup> Webster D., R. Layfield. 2003. Review of 20 mph zones in London boroughs. Transport for London (project report PPR243). Cited in: Grundy et al 2009.

<sup>7</sup> [http://nacto.org/wp-content/uploads/2012/10/ViolaRob\\_Neighborhood-Slow-Zones-NACTO-Conference-2012.pdf](http://nacto.org/wp-content/uploads/2012/10/ViolaRob_Neighborhood-Slow-Zones-NACTO-Conference-2012.pdf), see slide 3.

<sup>8</sup> Britton, Eric. 2014. Paris to limit speeds to 30 km/hr over entire city. World Streets. <http://worldstreets.wordpress.com/2014/05/21/paris-to-limit-speeds-to-30-kmhr-over-entire-city/>

Slower vehicle speeds may increase travel times. However, speed along segments is not the only factor in travel time; another major factor is delay at signalized intersections.

## 2 Traffic speed and crashes in downtown Carrboro

### 2.1 Current speed limits and actual speeds

A substantial portion of motor vehicles has been found to travel faster than 20 mph at various downtown locations.

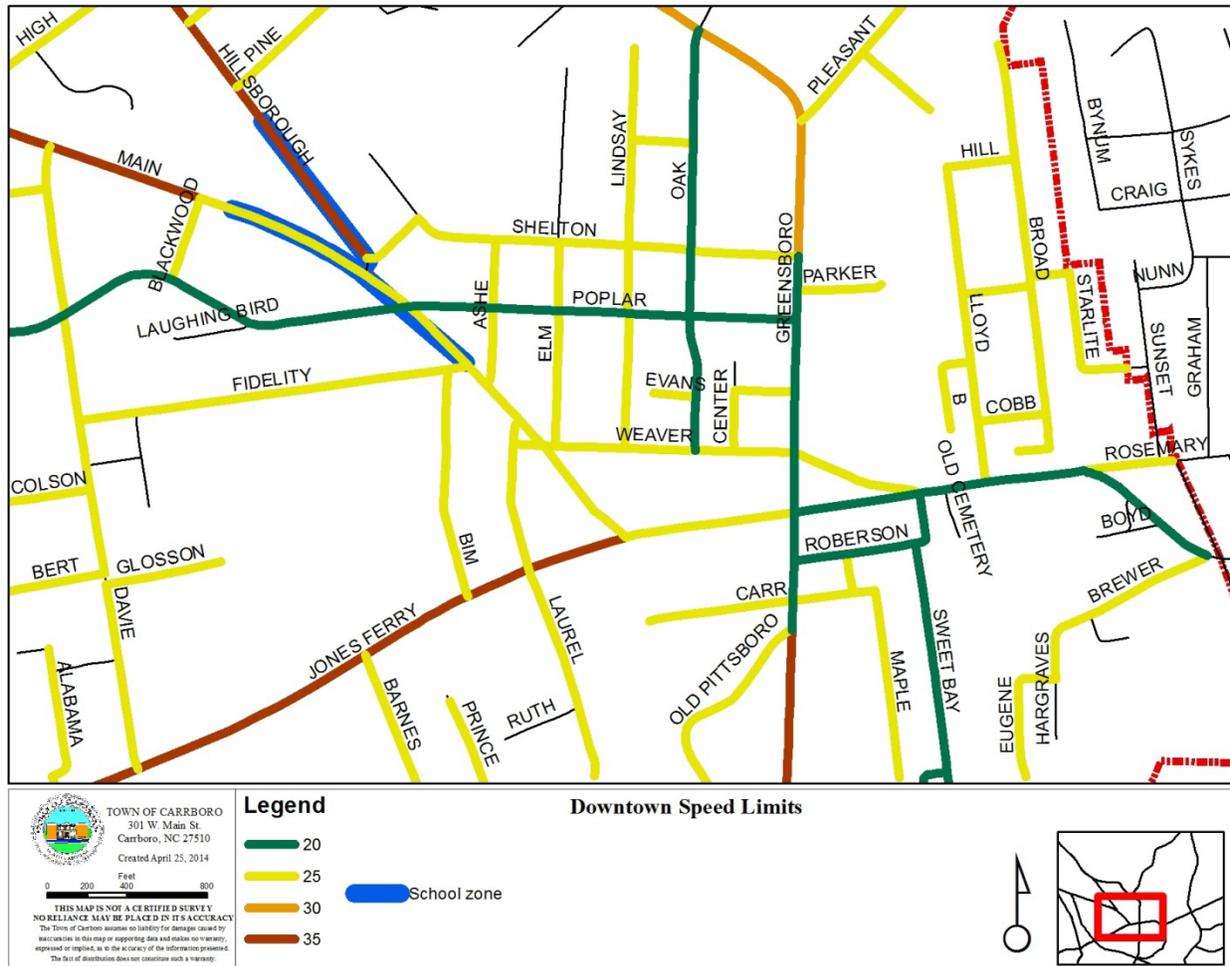


Figure 1. Downtown speed limits

Focusing on downtown commercial streets, Greensboro St., E. Main St., and Roberson St. already have a 20 mph speed limit, whereas Weaver St. and W. Main St. have a 25 mph speed limit. The gravel-paved Bike Alley (not symbolized on the map below) is the Town’s first public street with a speed limit of 10 mph. Several streets leading into the downtown area – including W. Main St., Hillsborough Rd., Jones Ferry Rd., S. Greensboro St. – have a 35 mph speed limit, while N. Greensboro St. is 30 mph.

Actual speeds have occasionally been measured at different downtown locations. At some locations, speeds are significantly higher than the speed limit. Average speeds, percent over the speed limit, and 85<sup>th</sup>-percentile speeds<sup>9</sup> at various locations will be presented in more detail at the May 27 meeting. 85<sup>th</sup>-percentile speeds are important because they provide a reasonable indication of the top speed at which most drivers will feel comfortable driving given the design of the street and the nature of the corridor.

## 2.2 Crash statistics

### 2.2.1 Motor vehicles

From April 2009 through March 2014 (a five-year period), there were 140 reported crashes on the two major state-maintained streets in downtown: Main St. (between Hillsborough and Merritt Mill) and Greensboro St. (between Shelton and Carr). This averages to over 2 reported crashes per month.

Planning Level Crash Data				(04/01/2009 - 03/31/2014)
Location	Total Crashes	Fatal Crashes	Non-Fatal Injury Crashes	PDO Crashes
SR 1010 (Main) from SR 1009 (Hillsborough) to SR 1771 / SR 1927 (Merritt Mill)	86	1	25	60
SR 1919 / SR 1772 (Greensboro) from Carr to Shelton	54	0	18	36

**Table 1. Five-year crashes on Main and Greensboro, downtown. PDO = property damage only.**

The data summary in Table 1, provided by NCDOT, includes crashes involving all modes. A full crash report allowing filtering for motor-vehicle-only crashes could not be analyzed in time for this memo. Using town-wide data from the 2008-2012 five-year period, 8% of all reported crashes involved either a bicycle or pedestrian. Assuming a slightly higher proportion of bike-ped crashes on these downtown streets, one could estimate that there were between 100 and 130 motor-vehicle-only crashes on these streets.

Of all the 666 reported town-wide crashes between 2008-12, speeding was reported in 62 (9%) of them. The fatal crash occurred in July 2011, when the community mourned the loss of Mr. Robert Harman, who was riding his bicycle and swerved into traffic on W. Main St.

### 2.2.2 Motorcycles

Of the 2008-12 town-wide crashes, 10, or 1.5%, involved a motorcycle.

### 2.2.3 Bicyclists

Comprehensive bicyclist crash data from 1997 to 2012 is available from the UNC Highway Safety Research Center’s Pedestrian and Bicycle Information Center.<sup>10</sup> In these 16 years, Carrboro had a total

<sup>9</sup> 15 percent of all traffic travels faster than the 85<sup>th</sup>-percentile speed.

<sup>10</sup> [http://www.pedbikeinfo.org/pbcat\\_nc/\\_biketypefacts.cfm](http://www.pedbikeinfo.org/pbcat_nc/_biketypefacts.cfm)

of 87 reported bicycle crashes for an average of 5.5 per year. Of these, 1 resulted in a fatality (as mentioned above), 8 resulted in a disabling injury, and 35 resulted in a non-disabling injury.

In only one of these crashes, excessive speed of the auto was reported. This small percentage is also evident in statewide crashes. In 23% of crashes, the estimated auto speed exceeded 20 mph, and in 10% percent of crashes, the speed exceeded 30 mph. 3 of the 8 disabling injuries (38%) and 10 of 35 evident injuries (29%) occurred when the estimated auto speed exceeded 20 mph. However, this is a small sample size. Looking at the entire Piedmont region over the same period (n=8,404), 88% of bicyclist fatalities, 71% of disabling injuries, and 45% of evident injuries occurred when the estimated auto speed exceeded 20 mph. Therefore, although many factors potentially affect a crash, motorist speed appears to be an important one.

The Carrboro Bike Plan examined the location of bicycle crashes from 1990 to 2006. Over this 17-year period, there were 88 reported crashes, resulting in an average of just over 5 per year. Of the top 6 crash locations, five were in downtown:

- Main-Lloyd: 12
- Main-Rosemary: 6
- Main-Weaver-Roberson: 5
- Greensboro-Weaver: 5
- Main-Jones Ferry: 4

The only other location in the top six was NC-54-Jones Ferry.

### 2.2.4 Pedestrians

Nationally, the number of pedestrian fatalities per billion vehicle-miles traveled decreased from greater than 5 in the mid-1970s to below 2 by the 2000s. This mirrored a proportionate decrease in motor-vehicle crash fatalities, a downward trend that has continued into the 2010s. Over the last 10 years, however, the downward trend for pedestrians has not continued, as the pedestrian fatality rate has been essentially unchanged at about 1.5.<sup>11</sup>

The National Highway Traffic Safety Administration (NHTSA) reports that the 4,743 pedestrian fatalities in 2012 were the most since 2006, and pedestrian fatalities' share of total traffic fatalities has increased slightly, from 11 to 14% over the last 10 years. Another 76,000 pedestrians were injured in 2012. The NHTSA data suggest several factors in pedestrian fatalities relevant to safety engineering:

- 3 out of every 4 fatalities occurred in an urban setting.
- 2/3 occurred at non-intersections
- 70% occurred at nighttime (6pm to 5:59am)
- Older pedestrians (age 65+) have the highest fatality rate

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<sup>11</sup> Leonhardt, David. As Traffic Deaths Fall, Pedestrian Deaths Do Not. *New York Times*, May 4, 2014. [http://www.nytimes.com/2014/05/05/upshot/as-traffic-deaths-fall-pedestrian-deaths-do-not.html?\\_r=2](http://www.nytimes.com/2014/05/05/upshot/as-traffic-deaths-fall-pedestrian-deaths-do-not.html?_r=2)

- Of all child (aged 15 and younger) traffic fatalities, a greater proportion were pedestrians (21% to 22%) than for the population as a whole (14%)

NHTSA also reports: “Alcohol involvement — either for the driver or for the pedestrian — was reported in 48 percent of the traffic crashes that resulted in pedestrian fatalities” – with the alcohol level of pedestrians being more common in crashes.<sup>12</sup>

The PBIC provides an important caveat that “only a fraction of pedestrian crashes that cause injury are ever recorded by the police”.<sup>13</sup>

In Carrboro, in the 16 years from 1997-2012, there were 103 reported pedestrian crashes. Of these:

- 37% occurred at an intersection
- 33% occurred at a non-intersection street location
- Other crashes were classified as non-roadway (e.g. parking lot), intersection-related, or unknown
- Only 3 of the 103 crashes was reported as a non-injury. Excluding unknowns:
  - 2 crashes involved a fatality
  - 22 involved a disabling injury
  - 33 involved an evident injury
  - 40 involved a possible injury

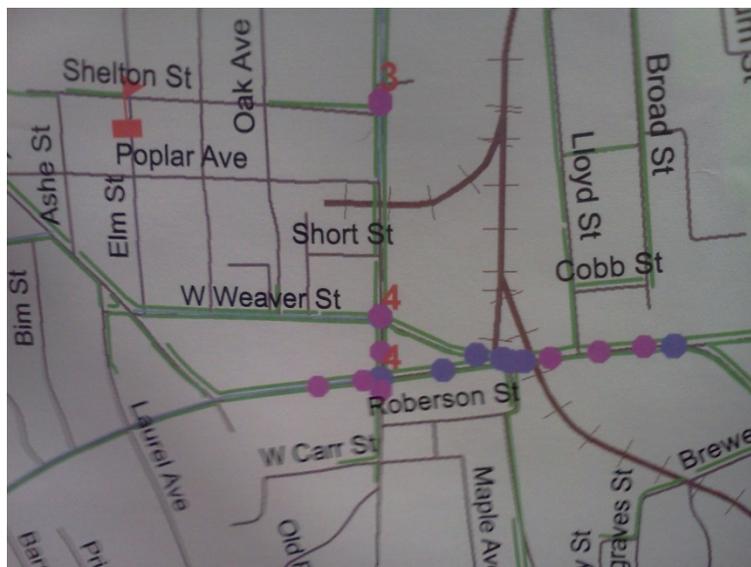


Figure 2. Pedestrian crash map, 2000-2011. Blue dots represent 2000-05 crashes; magenta dots represent 2006-11 crashes. Numbers indicate clusters of crashes.

<sup>12</sup> National Highway Traffic Safety Administration. Traffic Safety Facts: Pedestrians. April 2014. <http://www-nrd.nhtsa.dot.gov/Pubs/811888.pdf>.

<sup>13</sup> [http://www.pedbikeinfo.org/data/factsheet\\_crash.cfm](http://www.pedbikeinfo.org/data/factsheet_crash.cfm)

A crash map (Figure 2) prepared by the Highway Safety Research Center and NCDOT as part of the Watch for Me NC campaign showed that pedestrian crashes from 2000-11 were concentrated in the downtown area. This is not an unusual result, as downtown has the most pedestrians.

### **2.3 Yielding compliance at crosswalks**

Since 2010, the Carrboro Police Department has conducted pedestrian safety operations to enforce yielding compliance at crosswalks. These operations were folded into the Watch for Me NC campaign after it commenced in 2012. A table that includes yielding violation rates is included in the Appendix. Although it includes somewhat small sample sizes, the table shows both positive and negative data for downtown Carrboro crosswalks:

- Generally, 90-95% of vehicles yielded at the W. Weaver / Oak crosswalk
- There is a wider range of violation rates for the N. Greensboro / E. Poplar crosswalk, from 15% to 40%
- The W. Main / Hillsborough crosswalk had violation rates which at their highest were generally between 45% and 55%

## **3 Considerations for a downtown slow zone in Carrboro**

### **3.1 Business community feedback**

A presentation on the slow zone concept was made at the Carrboro Business Community Meeting on April 25, 2014, and constructive comments were received from attendees. The following is a summary of those comments:

- Overall, there was general support for the idea
- More speed enforcement is needed downtown, and the Police Department should be involved in slow zone consideration
- Lower speed limits
- E. Main St. pedestrian crossings (300 block) are an issue
- Would like a slower, steadier traffic flow rather than stopping and accelerating
- Businesses had positive feedback for the idea of a gateway treatment, but had questions about the cost
- E. Weaver St. should not be a thoroughfare
- Pedestrians need to look both ways before crossing

### **3.2 Arts Committee feedback**

A presentation was made at the May 12, 2014, Arts Committee meeting, and the committee provided helpful feedback. The following is a summary:

- Art along the street, but not in the street

- Public art that would not conflict with NCDOT standards
- Neighborhood lights spanning above the street
  - Creates festive atmosphere
  - “Canopy” feel
- Support for stamped asphalt
- Examples to consider
  - Rio de Janeiro mosaic
  - Sundance Square, Fort Worth, TX – stamped like cobblestone
  - Downtown Durham
- Roberson St. may be a better candidate for a woonerf than E. Weaver St.

### **3.3 State-maintained streets**

NCDOT maintains Main St. and Greensboro St., key arterials within the proposed downtown slow zone. Physical traffic calming measures on these streets must be approved by NCDOT. This section includes some, but not necessarily all, approvable and not permissible design features.

#### **3.3.1 Approvable options**

The following design measures are permissible, but need to be approved by NCDOT.

- Stamped asphalt, via a third-party encroachment agreement.<sup>14</sup> The Town would be required to maintain it. NCDOT will not approve actual brick paving on state-maintained roads.
- Curb extensions. Over the years, NCDOT has installed several curb extensions at intersections outside of the proposed slow zone, e.g. Main-Hillsborough, Greensboro-Pleasant, and Hillsborough-James. These have primarily served to slow turning movements by sharpening the turning angle.
- Crosswalk visibility or signalization. Features such as Rectangular Rapid Flashing Beacons (RRFBs), LED edge-lit crosswalk signs, or HAWK signals must be approved by NCDOT.
- Changes to traffic signal timing must be approved by the NCDOT Division Traffic Engineer. NCDOT’s ITS and Signals Unit may also be a part of the approval process. NCDOT owns all traffic signals, and the Town contracts with the Town of Chapel Hill to maintain Carrboro’s traffic signals. NCDOT then reimburses the Town of Chapel Hill for the maintenance work.

#### **3.3.2 Options that are not permissible**

The following measures are prohibited:

- Vertical traffic calming such as speed humps or cushions. Per 136-102.8, speed humps are permissible on NCDOT-maintained rural subdivision roads (e.g. Turkey Farm Rd. in rural Orange Co.), but not on urban arterials.
- Shared streets or woonerfs are not known to be approvable by NCDOT.

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<sup>14</sup> Previous communication with NCDOT district engineer.

### 3.4 What if the Town assumes maintenance of State-maintained streets?

If the Town wishes to install design features not permitted by NCDOT on state-maintained streets, one option is to assume maintenance of the streets.

The following are notes from a phone conversation with the NCDOT District Engineer's Office about the process for a municipality to assume maintenance of state-maintained streets.

- The NCDOT District Engineer sends a letter to town managers in February or March of each year. This affords the municipality time to plan for the change's effect on its upcoming budget and update its Powell Bill eligibility map for the upcoming fiscal year.
- The actual transfer of maintenance process could take place any time throughout the year.
- There is a precedent for Town assumption of state-maintained roads. One example is Tallyho Trail (albeit a rural subdivision road that serves as a collector, not an arterial). NCDOT improved the road prior to the Town taking over maintenance.
- A Board of Aldermen resolution would be needed to approve the maintenance transfer. Upon adoption, the resolution is forwarded to district engineer, who forwards it to the NC Board of Transportation. The BoT then considers approval of NCDOT abandoning maintenance.
- The Powell Bill formula determines how much additional revenues the Town would receive for the additional street mileage it is responsible for maintaining. See Section 3.4.1 for more information on the Powell Bill process.
- GS 136-41.3 provides guidance on the maintenance activities able to be funded by Powell Bill revenues"
  - "maintaining, repairing, constructing, reconstructing or widening of any street or public thoroughfare including bridges, drainage, curb and gutter, and other necessary appurtenances within the corporate limits of the municipality or for meeting the municipality's proportionate share of assessments levied for such purposes"
  - "planning, construction and maintenance of bikeways, greenways, or sidewalks"
- The District Engineer's office would prefer to maintain a level of connectivity of the state-maintained network after the transfer. As a hypothetical example, a transfer of the central portion of Greensboro St. would preferably span from at least Estes Dr. to NC-54. The remaining state-maintained portions of Greensboro St. could then be accessed via the state highway network from those two intersecting state-maintained facilities. However, the District Engineer stated that a smaller segment, such as Shelton St. to Carr St., may yet be possible.

North Carolina municipalities receive Powell Bill funding to help offset the cost of maintaining local streets. However, because of the question as to whether Powell Bill allocations adequately cover the cost of local street maintenance, municipalities may be concerned about the fiscal impacts of taking over state-maintained streets.

This report does not make any recommendations on assuming maintenance. If the Board is interested in pursuing this process further, a cost-benefit study is one possible way to inform decision-making on this topic. Input from Public Works and Management Services is also important here.

### 3.4.1 Powell Bill

The Powell Bill established the state statutes that govern allocation of State Street-Aid funds from the State Highway Fund to eligible, incorporated municipalities. The total amount that is allocated to these municipalities every fiscal year is equivalent to 10.4% of the state’s motor fuel tax for that fiscal year. Of the total amount, 75% is allocated based on population, so each municipality’s share of this 75% is based the ratio of its population to the sum total for all eligible municipalities. The remaining 25% is based on the ratio of its locally-maintained public street mileage to the sum total for all eligible municipalities. Municipalities are responsible for submitting a report providing the necessary information. The disbursement is then made twice each fiscal year: once by October 1 and once by January 1.

The Powell Bill distribution structure’s reliance on population for most of its allocation implies that if a municipality takes over maintenance of a state-maintained road, the increase in maintenance responsibility will be paralleled by a disproportionately smaller increase in Street-Aid revenues. Also, per a requirement of state legislation, NCDOT is studying changes to the Powell Bill formula that would shift the distribution of funding based on lane-mile, instead of street-mile data.

## 4 Feasibility of implementing a slow zone

### 4.1 General considerations

This report finds that creating a slow zone is feasible, with the specific features and implementation of the slow zone having varying levels of feasibility based on factors such as NCDOT approvability, engineering soundness, cost, space to put features, and so forth.

At the same time, a bigger-picture question emerges. As the downtown transportation system is one element of the downtown area, its feel and function is dependent on the overall vision of the community for the downtown area. This vision includes land use, urban design, and economic development. Integration of these elements was accomplished by the *New Vision* process in 2001; this plan has now passed its first decade.

Cities and towns large and small are engaging in deeper thinking about what, and whom, their streets are for. As the National Association of City Transportation Officials (NACTO) *Urban Street Design Guide* states:

Growing urban populations will demand that their streets serve not only as corridors for the conveyance of people, goods, and services, but as front yards, parks, playgrounds, and public spaces. Streets must accommodate an ever-expanding set of needs. They must be safe, sustainable, resilient, multi-modal, and economically beneficial, all while accommodating traffic.<sup>15</sup>

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<sup>15</sup> National Association of City Transportation Officials. “About the Guide”. *Urban Street Design Guide*. <http://nacto.org/usdg/about-the-guide/>

In the foreword to the guide, former New York City DOT Commissioner Jeanette Sadik-Khan refers to creating “a new DNA for city streets.”<sup>16</sup>

The system recommended by the 1985 *Carrboro Traffic Operation Study* conducted by NCDOT – including one-way, multi-lane pairs and widening E. Main St. and N. Greensboro St. to five lanes – was not preferred by the Town. The traffic projections (to 2000) cited to justify the recommended system were by and large substantially higher than the 2000 volumes turned out to be. The study cited increased speed and an increase in (auto) capacity as benefits of its proposed system. It also cited a reduction in auto accidents as a benefit, but paid little attention to alternative transportation modes apart from their effects on auto traffic operation. For example, the study reported: “Pedestrian [*sic*] activity that interferes with traffic operation have been [*sic*] observed at intersection [*sic*] of Weaver Street / Main Street / Roberson Street.”<sup>17</sup>

As has been reported to the Board previously, motor vehicle traffic volumes have for the most part either stayed flat or declined on downtown street segments over the last 15 years, arguably due to factors such as the widening of NC-54 bypass, the implementation of fare-free transit, and investment in bicycle and pedestrian infrastructure. Two decades after the NCDOT study, the 2005 *Downtown Traffic Circulation Study*, which used the *Downtown Design Guidelines* and *New Vision* as a philosophical framework, had a substantially more modally balanced set of recommendations that emphasized the “penultimate” importance of downtown access for pedestrians, motorists, bicyclists, transit users, and delivery trucks. This also accords with the overall goal (4.0) of *Vision 2020*: “The safe and adequate flow of bus, auto, bicycle and pedestrian traffic within and around Carrboro is essential.”

The balance sought by the Complete Streets movement and design guides such as the *Urban Street Design Guide* is between two fundamental, historical values of streets: the pre-1910s-era function of streets as meeting and mixing areas for people and commerce and the midcentury view of streets primarily as thoroughfares for automobiles. The implication is that it is possible to make streets inviting for all users – people on foot (*Vision 2020* 3.25 and 3.27), transit users (3.24), and cyclists (4.3) – while continuing to provide adequate automobile access. For example, the comment from the business community meeting about achieving a slower, steadier flow of traffic implies a reduction in maximum auto speeds but also a reduction in signal delay.

Downtown streets currently approach this balance, but some street segments are more imbalanced than others. The experience of travel in downtown by people using different modes is compromised, or potentially compromised, by traffic speed, traffic noise, yielding violation rates, red light running, lack of facilities and amenities, lack of buffers between pedestrians and the travelway, peak hour congestion, difficulty locating parking lots, and other factors.

With downtown Carrboro’s vibrancy and abundance of destinations where people want to be, there is a significant amount of all modes of traffic. The relatively lack of parallel street connectivity puts more pressure on downtown streets to adequately serve those modes. For example, E. Weaver St. is a central

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<sup>16</sup> <http://nacto.org/usdg/foreword/>

<sup>17</sup> A copy of the study is available in the Carrboro Planning Department office. The quote is from p. 12.

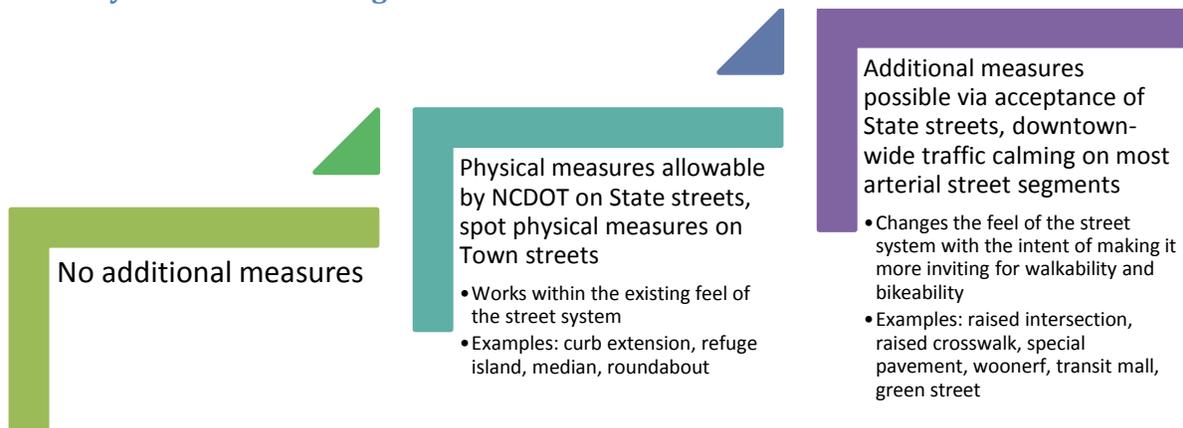
gathering place for people, but it also provides capacity for a significant amount of east-west through traffic (9,000 ADT and over 200 cyclists per day). Therefore, the balance between function and feel of downtown streets can be a delicate one, and it deserves careful consideration as the community reflects on our big-picture vision of downtown.

## 4.2 Implementation building blocks

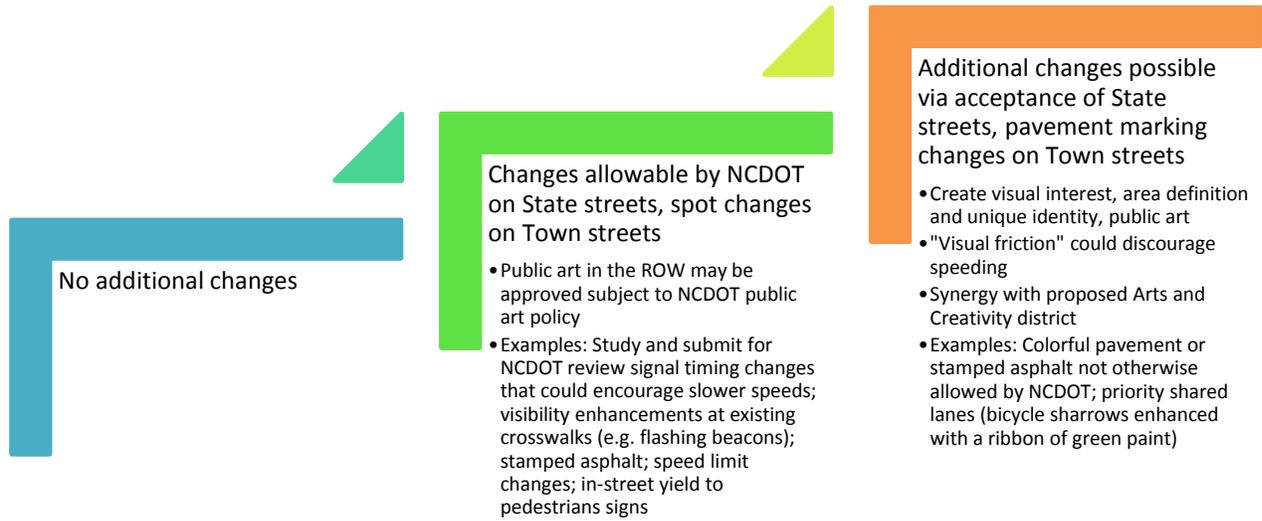
There is not much precedent for implementing a downtown slow zone in the U.S. However, it is clear that implementation is a function of how different “building blocks” are utilized within the feasibility parameters mentioned above.

Below is a framework for thinking about the various levels of implementation of the building blocks. The steps are meant to be cumulative. Implementation of specific examples in this section may require additional engineering study.

### 4.2.1 Physical traffic calming features



### 4.2.2 Pavement marking, signage, signal, and aesthetic changes



### 4.2.3 Education and enforcement

Working with NCDOT, the UNC Highway Safety Research Center, and other Triangle-area municipalities, the Town is already engaged in education and enforcement relating to transportation safety via the Watch for Me NC campaign ([www.watchformenc.org](http://www.watchformenc.org)). Education is an important supplemental strategy for raising awareness of the desired speed the slow zone attempts to encourage.



Figure 3. Watch for Me NC materials

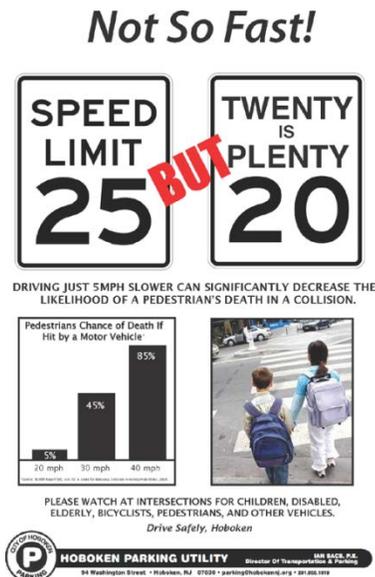


Figure 4. Educational flyer from Hoboken, NJ. Source: City of Hoboken.

Enforcement is not covered in detail in this report. Staff input on how enforcement could play a role in a downtown slow zone is deferred to the Police Department. If a slow zone is pursued, then consideration of speed limit changes would seem warranted assuming a desired maximum speed of 20 mph.

### 4.3 Slow zone designation and branding

The Town could strive to implement slow zone elements without actually designating a slow zone. However, the following potential benefits could be achieved by official designation:

- Basis for planning and policy within the slow zone
- Potential synergy with an arts and creativity district
- Greater recognition, marketing, and branding power
- A well-defined area that could serve as a unifying theme of grant applications

At the same time, the following potential challenges should be carefully considered:

- Impact on traffic speed on segments in the vicinity of the zone
- Potential confusion on boundaries and marketing if both arts and creativity district and slow zone are established
- In addition to consideration of traffic level of service, consider input from transit providers on potential impacts to bus service

## 5 Slow zone boundaries

As part of the February 18 meeting, Mr. Lajeunesse outlined potential slow zone boundaries as shown in Figure 5.



Figure 5. TAB-proposed slow zone boundaries

Another boundary reference is existing zoning. Properties zoned B-1 and B-2 may have destinations for which access is sought and will tend to attract higher traffic volumes for all modes.

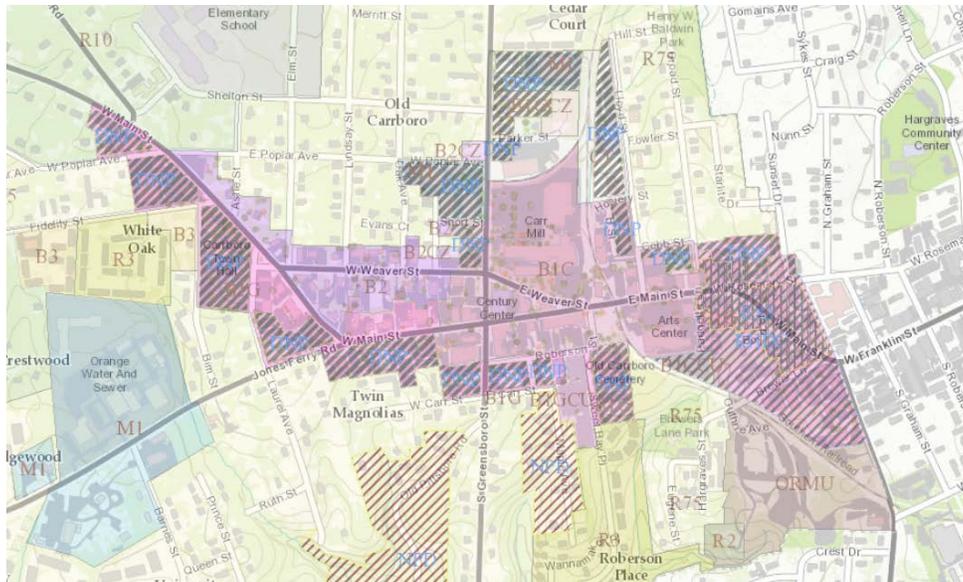


Figure 6. Downtown zoning

## 6 Next steps

There are a number of options for the Board to consider for proceeding with a slow zone:

- Continue individual efforts to make streets safer and more walkable in the downtown area, but do not specifically establish a slow zone
- Defer consideration of a slow zone to future planning processes that might incorporate the concept as a key element
- Direct staff to return to the Board with a Slow Zone Policy for the Board’s review and consideration of adoption. The purpose of this policy would be to formally establish the slow zone as a priority, define slow zone boundaries, and serve as a guide for future decision-making on projects within the slow zone area.
- Direct staff to report back with more information on slow zone implementation, including providing direction on additional elements to be incorporated into the slow zone

## Appendix

## Watch for Me NC yielding data

Statistics on pedestrian safety operations (crosswalk yielding compliance) maintained by the Carrboro Police Department, through mid-Oct. 2013

Date	Location	# Crossed	# Violators	% Violated	Citations	Warnings	All Citations	All Warnings	Directed Patrols	Sign present?
2/23/2010	W Main / Hillsborough	9	4	44%	4					
3/8/2010	W Main / Hillsborough	26	14	54%	14					
4/13/2010	S Greensboro / Carr	31	9	29%	9					
4/22/2010	S Greensboro / Carr	50	3	6%	3					
5/10/2010	S Greensboro / Carr	30	7	23%	8					
5/11/2010	W Main / Hillsborough	26	14	54%	14					
5/12/2010	Hillsborough / James	25	11	44%	11					
5/13/2010	N Greensboro / E Poplar	30	6	20%	6					
5/14/2010	S Greensboro / Carr	22	5	23%	5					
	<b>totals for 2010</b>	<b>249</b>	<b>73</b>	<b>29%</b>	<b>74</b>		<b>1590</b>	<b>289</b>	<b>1282</b>	
2/19/2011	Hillsborough / James	25	11	44%	11					
5/12/2011	N Greensboro / E Poplar	30	6	20%	6					
6/27/2011	Hillsborough / James	15	5	33%	4	1				
10/24/2011	S Greensboro / Carr	15	1	7%	1	0				
12/5/2011	S Greensboro / Carr	30	7	23%	7					
	<b>totals for 2011</b>	<b>115</b>	<b>30</b>	<b>26%</b>	<b>29</b>	<b>1</b>	<b>1659</b>	<b>557</b>	<b>1182</b>	
1/16/2012	S Greensboro / Carr	15	1	7%	1	0				No
3/16/2012	W Weaver / Oak		0	0%	0	0				Unk
4/10/2012	S Greensboro / Carr				3					No
7/10/2012	S Greensboro / Carr	18	0	0%	0	0				No
7/23/2012	W Weaver / Oak				5					Unk
7/24/2012	S Greensboro / Carr				2	1				No
8/21/2012	W Main / Hillsborough	13	5	38%	3	2				No
8/22/2012	N Greensboro / E Poplar	15	6	40%	3	1				No
9/20/2012	W Weaver / Oak	19	2	11%	2					Yes
10/14/2012	Hillsborough / James	23	7	30%	6	1				No
10/15/2012	Hillsborough / James	61	15	25%	11	4				No
10/16/2012	W Weaver / Oak	77	5	6%	5					No
10/17/2012	S Greensboro / Carr	124	7	6%	7					No

**ATTACHMENT B**

10/18/2012	N Greensboro / E Poplar	75	11	15%	7	4			No
10/26/2012	W Main / Hillsborough	24	6	25%	5	1			No
10/27/2012	810 Old Fayetteville	9	3	33%	3				No
12/11/2012	306 Estes Dr Ext	19	5	26%	4	1			No
12/18/2012	306 Estes Dr Ext	26	4	15%	2	2			Yes
totals for 2012		518	77	15%	69	17	1906	836	1791
1/9/2013	810 Old Fayetteville	32	4	13%	2	2			Yes
2/20/2013	W Weaver / Oak	20	2	10%	2	0			No
4/1/2013	Hillsborough / James	29	4	14%	2	2			Yes
4/2/2013	W Main / Hillsborough	28	3	11%	0	3			Yes
5/14/2013	W Weaver / Oak	42	4	10%	3	1			Yes
5/15/2013	Hillsborough / James	34	2	6%	1	1			Yes
7/16/2013	810 Old Fayetteville	16	4	25%	4	0			Yes
8/20/2013	W Weaver / Oak	24	2	8%	2	0			Yes
8/23/2013	W Main / Hillsborough	17	7	41%	6	1			Yes
9/9/2013	810 Old Fayetteville	33	2	6%	2	0			Yes
10/8/2013	W Main / Hillsborough	21	7	33%	7	0			Yes
10/9/2013	Hillsborough / James	49	5	10%	3	2			Yes
totals for 2013 (to date)		345	46	13%	34	12	1533	837	1123

\* Acknowledgement to Amanda Stipe in the Police Department for providing the data