



# Town of Carrboro

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

## Meeting Agenda Board of Aldermen



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Tuesday, February 21, 2017

7:30 PM

Board Chambers - Room 110

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### 7:30-7:35

#### A. RESOLUTIONS, PROCLAMATIONS, POETRY READINGS, AND ACKNOWLEDGEMENTS

### 7:35-7:40

#### B. ANNOUNCEMENT OF UPCOMING MEETINGS

### 7:40-7:50

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

### 7:50-7:55

#### D. CONSENT AGENDA

1. [17-047](#) Approval of Previous Meeting Minutes of January 24, 2017 and February 7, 2017
2. [17-028](#) Request-to-Set a Public Hearing on Land Use Ordinance Amendments Relating to Signage  
**PURPOSE:** The purpose of this agenda item is for the Board of Aldermen to consider setting a public hearing on text amendments to the Land Use Ordinance relating to construction fence wrap signage.

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

[Attachment B - Draft LUO Amend-ConstructionWrap\\_02-10-2017 rev reh-clean-realigned](#)

[Attachment C - NCGS 153A-340](#)

[Attachment D - Excerpt from LUO ART-XVII](#)

3. [17-046](#) Information Regarding Research on the Accessible Icon Project in the Town of Carrboro

**PURPOSE:** The purpose of this item is to update the Board of Aldermen on the Public Works Department's research into the possible implementation of the new wheelchair Accessible Icon Project for the Town of Carrboro.

**Attachments:** [Attachment A - Accessible Icon Project .pdf](#)

4. [17-044](#) Detailed Preview - Working Draft of Town Code Amendments to Modify Livestock Provisions Pertaining to Chickens and Rabbits

**PURPOSE:** The purpose of this agenda item is for the Board of Aldermen to receive the draft Town Code Amendments pertaining to chicken and rabbits in preparation for the upcoming public hearing on related Land Use Ordinance amendments.

**Attachments:** [Attachment A - Updated Livestock Ordinance 2-8-2017 rev reh 2-15-17](#)

5. [17-045](#) Comments on the DCHC-MPO Comprehensive Transportation Plan

**PURPOSE:** The purpose of this agenda item is to approve comments that will be forwarded to the MPO Board on the draft Comprehensive Transportation Plan.

**Attachments:** [Attachment A - Resolution - TOC Recommendations](#)

[Attachment B - Staff Memo](#)

[Attachment C - Chapel Hill-Carrboro Thoroughfare Plans](#)

[Attachment D - Key Project Sheet](#)

[Attachment E - Orange County Transit Plan Benefits to Carrboro](#)

[Attachment F - TAB comments on CTP 2017.2.2](#)

## E. OTHER MATTERS

**7:55-8:55**

1. [17-043](#) Presentation of the Parking Study Recommendations

**PURPOSE:** The purpose of this agenda item is for the Board of Aldermen to receive a presentation on the updated findings and associated recommendations as a precursor to adopting the document as a Parking Plan.

**Attachments:** [Attachment A - Resolution Parking Plan](#)

[Attachment B - Carrboro Draft Parking Study](#)

**8:55-9:20**

2. [17-039](#) Discuss Options for Shared Rosemary Parking Lot  
**PURPOSE:** The purpose of this item is to discuss options for management and maintenance of the shared parking lot at Rosemary and Sunset.  
**Attachments:** [Carrboro-Chapel Hill Shared Rosemary Lot](#)

**9:20-9:45**

3. [17-041](#) Capital Improvements Plan, FY 2017-18 through FY 2021-22  
**PURPOSE:** To present to the Board of Aldermen a proposed 5-year Capital Improvements Plan (CIP),  
**Attachments:** [Attachment A Resolution](#)  
[Attachment B Capital Improvements Plan](#)  
[Attachment C Current Projects](#)  
[Attachment D New Projects](#)  
[Attachment E Vehicle Replacement Schedule](#)

**9:45-10:00**

4. [17-042](#) Consideration of Colorful Crosswalk Designs and Locations  
**PURPOSE:** The purpose of this agenda item is for the Board of Aldermen to consider various options for colorful crosswalks at two locations in Town.  
**Attachments:** [Attachment A - Resolution](#)  
[Attachment B - Colorful Crosswalks memo](#)

F. MATTERS BY BOARD MEMBERS

G. MATTERS BY TOWN MANAGER

H. MATTERS BY TOWN ATTORNEY

I. MATTERS BY TOWN CLERK



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## Agenda Item Abstract

**File Number:**17-047

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**Agenda Date:** 2/21/2017

**File Type:**Agendas

**In Control:** Board of Aldermen

**Version:** 1

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Approval of Previous Meeting Minutes of January 24, 2017 and February 7, 2017





# Town of Carrboro

Town Hall  
301 W. Main St.  
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## Agenda Item Abstract

**File Number:**17-028

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**Agenda Date:** 2/21/2017

**File Type:**Agendas

**In Control:** Board of Aldermen

**Version:** 1

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### **TITLE:**

Request-to-Set a Public Hearing on Land Use Ordinance Amendments Relating to Signage

**PURPOSE:** The purpose of this agenda item is for the Board of Aldermen to consider setting a public hearing on text amendments to the Land Use Ordinance relating to construction fence wrap signage.

**DEPARTMENT:** Planning Department

**CONTACT INFORMATION:** Christina Moon - 919-918-7325; Patricia McGuire - 919-918-7327; Bob Hornik - 919-929-3905

**INFORMATION:** At the May 24, 2016 Board of Aldermen meeting, staff presented information relating to newly adopted state legislation and the potential need to amend certain Land Use Ordinance provisions for conformity. New language added under NCGS 153A-340 (Zoning, Grant of Power) subsection (n) addresses signage on construction fence wrap, the fabric attached to construction site perimeter fencing. The provision exempts the messaging on fence wraps from zoning regulations relating to signage until the certificate of occupancy (CO) is issued for the final portion of any construction or twenty-four months after the fence wrap is installed, whichever is shorter (Attachment C).

A draft ordinance has been prepared addressing the signage on construction fence wraps under Section 15-273, Certain Temporary Signs, Subsection (2) which speaks to other forms of temporary signs used for construction projects.

The Board of Aldermen must receive public comment before adopting amendments to the LUO. Orange County and Planning Board review are also needed; no other boards have been identified due to the mandatory nature of the amendment.

**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 March 28, 2017 and referring the proposed amendment to Orange County and the Planning Board.

A RESOLUTION SETTING A PUBLIC HEARING ON AN ORDINANCE AMENDING THE  
CARRBORO LAND USE ORDINANCE PROVISIONS RELATED TO SIGNAGE

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 March 28, 2017, to consider adopting “An Ordinance Amending the Carrboro Land Use Ordinance Provisions Related to Signage.”

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

BE IT FURTHER RESOLVED that the draft ordinance is also referred to the following Town of Carrboro advisory boards and commissions.

☐ Appearance Commission

☐ Recreation and Parks Commission

☐ Transportation Advisory Board

☐ Northern Transition Area Advisory Committee

☐ Environmental Advisory Board

☐ \_\_\_\_\_

☐ Economic Sustainability Commission

☐ \_\_\_\_\_

This is the 21<sup>st</sup> day of February in the year 2017.

**AN ORDINANCE AMENDING TOWN OF CARRBORO LAND USE ORDINANCE  
PROVISIONS RELATED TO SIGNAGE**

**\*Draft 2-10-2017\***

THE BOARD OF ALDERMEN OF THE TOWN OF CARRBORO ORDAINS:

Section 1. Subsection 15-273(a)(2) of the Carrboro Land Use Ordinance shall amended to read as follows:

(2) Construction site identification signs. Such signs may identify the project, the owner or developer, architect, engineer, contractor and subcontractors, funding sources, and may contain related information. (i) Not more than one such sign may be erected per site, and it may not exceed thirty-two square feet in area. Such signs shall be erected prior to the issuance of a building permit and shall be removed within ten days after the issuance of the final occupancy permit. (ii) In addition, fence wraps displaying signage when affixed to perimeter fencing at a construction site are exempt until a certificate of occupancy is issued for the final portion of any construction at the site, or 24 months from the time the fence wrap is installed, whichever is shorter. If the construction is not completed at the end of 24 months from the time the fence wrap was installed, the Town may regulate the signage but shall allow fence wrapping material to remain affixed to the perimeter fencing. Fence wrapping shall not impede the view from site distance triangles.

Section 2. All provisions of any Town Ordinance in conflict with this Ordinance are repealed.

Section 3. This Ordinance shall become effective upon adoption.

## Part 3. Zoning.

**§ 153A-340. Grant of power.**

(a) For the purpose of promoting health, safety, morals, or the general welfare, a county may adopt zoning and development regulation ordinances. These ordinances may be adopted as part of a unified development ordinance or as a separate ordinance. A zoning ordinance may regulate and restrict the height, number of stories and size of buildings and other structures, the percentage of lots that may be occupied, the size of yards, courts and other open spaces, the density of population, and the location and use of buildings, structures, and land for trade, industry, residence, or other purposes. The ordinance may provide density credits or severable development rights for dedicated rights-of-way pursuant to G.S. 136-66.10 or G.S. 136-66.11.

(b) (1) These regulations may affect property used for bona fide farm purposes only as provided in subdivision (3) of this subsection. This subsection does not limit regulation under this Part with respect to the use of farm property for nonfarm purposes.

(2) Except as provided in G.S. 106-743.4 for farms that are subject to a conservation agreement under G.S. 106-743.2, bona fide farm purposes include the production and activities relating or incidental to the production of crops, grains, fruits, vegetables, ornamental and flowering plants, dairy, livestock, poultry, and all other forms of agriculture, as defined in G.S. 106-581.1. For purposes of this subdivision, "when performed on the farm" in G.S. 106-581.1(6) shall include the farm within the jurisdiction of the county and any other farm owned or leased to or from others by the bona fide farm operator, no matter where located. For purposes of this subdivision, the production of a nonfarm product that the Department of Agriculture and Consumer Services recognizes as a "Goodness Grows in North Carolina" product that is produced on a farm subject to a conservation agreement under G.S. 106-743.2 is a bona fide farm purpose. For purposes of determining whether a property is being used for bona fide farm purposes, any of the following shall constitute sufficient evidence that the property is being used for bona fide farm purposes:

- a. A farm sales tax exemption certificate issued by the Department of Revenue.
- b. A copy of the property tax listing showing that the property is eligible for participation in the present use value program pursuant to G.S. 105-277.3.
- c. A copy of the farm owner's or operator's Schedule F from the owner's or operator's most recent federal income tax return.
- d. A forest management plan.
- e. A Farm Identification Number issued by the United States Department of Agriculture Farm Service Agency.

(3) The definitions set out in G.S. 106-802 apply to this subdivision. A county may adopt zoning regulations governing swine farms served by animal waste management systems having a design capacity of 600,000 pounds steady state live weight (SSLW) or greater provided that the zoning regulations may not have the effect of excluding swine farms served by an animal waste management system having a design capacity of 600,000 pounds SSLW or greater from the entire zoning jurisdiction.

(c) The regulations may provide that a board of adjustment may determine and vary their application in harmony with their general purpose and intent and in accordance with

general or specific rules therein contained, provided no change in permitted uses may be authorized by variance.

(c1) The regulations may also provide that the board of adjustment, the planning board, or the board of commissioners may issue special use permits or conditional use permits in the classes of cases or situations and in accordance with the principles, conditions, safeguards, and procedures specified therein and may impose reasonable and appropriate conditions and safeguards upon these permits. Conditions and safeguards imposed under this subsection shall not include requirements for which the county does not have authority under statute to regulate nor requirements for which the courts have held to be unenforceable if imposed directly by the county. Where appropriate, the conditions may include requirements that street and utility rights-of-way be dedicated to the public and that recreational space be provided. When deciding special use permits or conditional use permits, the board of county commissioners or planning board shall follow quasi-judicial procedures. Notice of hearings on special or conditional use permit applications shall be as provided in G.S. 160A-388(a2). No vote greater than a majority vote shall be required for the board of county commissioners or planning board to issue such permits. For the purposes of this section, vacant positions on the board and members who are disqualified from voting on a quasi-judicial matter shall not be considered "members of the board" for calculation of the requisite majority. Every such decision of the board of county commissioners or planning board shall be subject to review of the superior court in the nature of certiorari consistent with G.S. 160A-388.

(d) A county may regulate the development over estuarine waters and over lands covered by navigable waters owned by the State pursuant to G.S. 146-12, within the bounds of that county.

(e) For the purpose of this section, the term "structures" shall include floating homes.

(f) Repealed by Session Laws 2005-426, s. 5(b), effective January 1, 2006.

(g) A member of the board of county commissioners shall not vote on any zoning map or text amendment where the outcome of the matter being considered is reasonably likely to have a direct, substantial, and readily identifiable financial impact on the member. Members of appointed boards providing advice to the board of county commissioners shall not vote on recommendations regarding any zoning map or text amendment where the outcome of the matter being considered is reasonably likely to have a direct, substantial, and readily identifiable financial impact on the member.

(h) As provided in this subsection, counties may adopt temporary moratoria on any county development approval required by law. county development approval required by law, except for the purpose of developing and adopting new or amended plans or ordinances as to residential uses. The duration of any moratorium shall be reasonable in light of the specific conditions that warrant imposition of the moratorium and may not exceed the period of time necessary to correct, modify, or resolve such conditions. Except in cases of imminent and substantial threat to public health or safety, before adopting an ordinance imposing a development moratorium with a duration of 60 days or any shorter period, the board of commissioners shall hold a public hearing and shall publish a notice of the hearing in a newspaper having general circulation in the area not less than seven days before the date set for the hearing. A development moratorium with a duration of 61 days or longer, and any extension of a moratorium so that the total duration is 61 days or longer, is subject to the notice and hearing requirements of G.S. 153A-323. Absent an imminent threat to public health or safety, a development moratorium adopted pursuant to this section shall not apply to any project for which a valid building permit issued pursuant to G.S. 153A-357 is outstanding, to any project for which a conditional use permit application or special use permit application has been accepted, to development set forth in a site-specific or phased development plan approved pursuant to G.S. 153A-344.1, to development for which substantial expenditures have already

G.S. 153A-340

been made in good faith reliance on a prior valid administrative or quasi-judicial permit or approval, or to preliminary or final subdivision plats that have been accepted for review by the county prior to the call for public hearing to adopt the moratorium. Any preliminary subdivision plat accepted for review by the county prior to the call for public hearing, if subsequently approved, shall be allowed to proceed to final plat approval without being subject to the moratorium.

Any ordinance establishing a development moratorium must expressly include at the time of adoption each of the following:

- (1) A clear statement of the problems or conditions necessitating the moratorium and what courses of action, alternative to a moratorium, were considered by the county and why those alternative courses of action were not deemed adequate.
- (2) A clear statement of the development approvals subject to the moratorium and how a moratorium on those approvals will address the problems or conditions leading to imposition of the moratorium.
- (3) An express date for termination of the moratorium and a statement setting forth why that duration is reasonably necessary to address the problems or conditions leading to imposition of the moratorium.
- (4) A clear statement of the actions, and the schedule for those actions, proposed to be taken by the county during the duration of the moratorium to address the problems or conditions leading to imposition of the moratorium.

No moratorium may be subsequently renewed or extended for any additional period unless the city shall have taken all reasonable and feasible steps proposed to be taken by the county in its ordinance establishing the moratorium to address the problems or conditions leading to imposition of the moratorium and unless new facts and conditions warrant an extension. Any ordinance renewing or extending a development moratorium must expressly include, at the time of adoption, the findings set forth in subdivisions (1) through (4) of this subsection, including what new facts or conditions warrant the extension.

Any person aggrieved by the imposition of a moratorium on development approvals required by law may apply to the appropriate division of the General Court of Justice for an order enjoining the enforcement of the moratorium, and the court shall have jurisdiction to issue that order. Actions brought pursuant to this section shall be set down for immediate hearing, and subsequent proceedings in those actions shall be accorded priority by the trial and appellate courts. In any such action, the county shall have the burden of showing compliance with the procedural requirements of this subsection.

(i) In order to encourage construction that uses sustainable design principles and to improve energy efficiency in buildings, a county may charge reduced building permit fees or provide partial rebates of building permit fees for buildings that are constructed or renovated using design principles that conform to or exceed one or more of the following certifications or ratings:

- (1) Leadership in Energy and Environmental Design (LEED) certification or higher rating under certification standards adopted by the U.S. Green Building Council.
- (2) A One Globe or higher rating under the Green Globes program standards adopted by the Green Building Initiative.
- (3) A certification or rating by another nationally recognized certification or rating system that is equivalent or greater than those listed in subdivisions (1) and (2) of this subsection.

(j) An ordinance adopted pursuant to this section shall not prohibit single-family detached residential uses constructed in accordance with the North Carolina State Building G.S. 153A-340

Code on lots greater than 10 acres in size in zoning districts where more than fifty percent (50%) of the land is in use for agricultural or silvicultural purposes, except that this restriction shall not apply to commercial or industrial districts where a broad variety of commercial or industrial uses are permissible. An ordinance adopted pursuant to this section shall not require that a lot greater than 10 acres in size have frontage on a public road or county-approved private road, or be served by public water or sewer lines, in order to be developed for single-family residential purposes.

(k) A zoning or unified development ordinance may not differentiate in terms of the regulations applicable to fraternities or sororities between those fraternities or sororities that are approved or recognized by a college or university and those that are not.

(l) Any zoning and development regulation ordinance relating to building design elements adopted under this Part, under Part 2 of this Article, or under any recommendation made under G.S. 160A-452(6)c. may not be applied to any structures subject to regulation under the North Carolina Residential Code for One- and Two-Family Dwellings except under one or more of the following circumstances:

- (1) The structures are located in an area designated as a local historic district pursuant to Part 3C of Article 19 of Chapter 160A of the General Statutes.
- (2) The structures are located in an area designated as a historic district on the National Register of Historic Places.
- (3) The structures are individually designated as local, State, or national historic landmarks.
- (4) The regulations are directly and substantially related to the requirements of applicable safety codes adopted under G.S. 143-138.
- (5) Where the regulations are applied to manufactured housing in a manner consistent with G.S. 153A-341.1 and federal law.
- (6) Where the regulations are adopted as a condition of participation in the National Flood Insurance Program.

Regulations prohibited by this subsection may not be applied, directly or indirectly, in any zoning district, special use district, conditional use district, or conditional district unless voluntarily consented to by the owners of all the property to which those regulations may be applied as part of and in the course of the process of seeking and obtaining a zoning amendment or a zoning, subdivision, or development approval, nor may any such regulations be applied indirectly as part of a review pursuant to G.S. 153A-341 of any proposed zoning amendment for consistency with an adopted comprehensive plan or other applicable officially adopted plan. For the purposes of this subsection, the phrase "building design elements" means exterior building color; type or style of exterior cladding material; style or materials of roof structures or porches; exterior nonstructural architectural ornamentation; location or architectural styling of windows and doors, including garage doors; the number and types of rooms; and the interior layout of rooms. The phrase "building design elements" does not include any of the following: (i) the height, bulk, orientation, or location of a structure on a zoning lot; (ii) the use of buffering or screening to minimize visual impacts, to mitigate the impacts of light and noise, or to protect the privacy of neighbors; or (iii) regulations adopted pursuant to this Article governing the permitted uses of land or structures subject to the North Carolina Residential Code for One- and Two-Family Dwellings.

(m) Nothing in subsection (l) of this section shall affect the validity or enforceability of private covenants or other contractual agreements among property owners relating to building design elements.

(n) Fence wraps displaying signage when affixed to perimeter fencing at a construction site are exempt from zoning regulation pertaining to signage under this Article until the certificate of occupancy is issued for the final portion of any construction at that site or 24

months from the time the fence wrap was installed, whichever is shorter. If construction is not completed at the end of 24 months from the time the fence wrap was installed, the county may regulate the signage but shall continue to allow fence wrapping materials to be affixed to the perimeter fencing. No fence wrap affixed pursuant to this subsection may display any advertising other than advertising sponsored by a person directly involved in the construction project and for which monetary compensation for the advertisement is not paid or required. (1959, c. 1006, s. 1; 1967, c. 1208, s. 4; 1973, c. 822, s. 1; 1981, c. 891, s. 6; 1983, c. 441; 1985, c. 442, s. 2; 1987, c. 747, s. 12; 1991, c. 69, s. 1; 1997-458, s. 2.1; 2005-390, s. 6; 2005-426, s. 5(b); 2006-259, s. 26(a); 2007-381, s. 1; 2011-286, s. 1; 2011-363, s. 1; 2011-384, s. 5; 2013-126, ss. 5, 8; 2013-347, s. 1; 2013-413, s. 6(a); 2015-86, s. 2; 2015-246, ss. 3.1(b), 4(a); 2015-286, s. 1.8(b).)



## ARTICLE XVII

### SIGNS

#### **Section 15-273 Certain Temporary Signs: Permit Exemptions and Additional Regulations**

(a) The following temporary signs are permitted without a zoning, special use, conditional use, or sign permit. However, such signs shall conform to the requirements set forth below as well as all other applicable requirements of this chapter except those contained in Section 15-276 (Total Sign Surface Area) and 15-278 (Number of Freestanding Signs).

- (1) Signs containing the message that the real estate on which the sign is located (including buildings) is for sale, lease, or rent, together with information identifying the owner or agent. Such signs may not exceed four square feet in area and shall be removed immediately after sale, lease, or rental. For lots of less than five acres, a single sign on each street frontage may be erected. For lots of five acres or more in area and having a street frontage in excess of four hundred feet, a second sign not exceeding four square feet in area may be erected.
- (2) Construction site identification signs. Such signs may identify the project, the owner or developer, architect, engineer, contractor and subcontractors, funding sources, and may contain related information. Not more than one such sign may be erected per site, and it may not exceed thirty-two square feet in area. Such signs shall be erected prior to the issuance of a building permit and shall be removed within ten days after the issuance of the final occupancy permit.
- (3) Signs indicating that, on the lot where the sign is located, a new business is opening, a previously existing business is going out of business, a one-time auction is planned, or some other non-recurring activity of a similar nature is scheduled. Signs referring to sales or other events designed to promote a pre-existing, ongoing business or commercial venture or any specific product or service offered by such business or commercial venture are not authorized under this subsection. Signs authorized under this subsection may be erected or displayed not sooner than two weeks before the activity that is advertised and must be removed not later than three weeks after they are first erected or displayed. **(REPEALED 3/11/86; AMENDED 12/03/91)**
- (4) Displays, including lighting, erected in connection with the observance of holidays. Such signs shall be removed within ten days following the holidays.

- (5) Signs erected in connection with elections or political campaigns. Such signs shall be removed within three days following the election or conclusion of the campaign. No such sign may exceed sixteen square feet in area. Such signs may not be attached to any natural or man-made permanent structure located within a public right-of-way, including without limitation trees, utility poles, or traffic control signs. **(AMENDED 08/25/83); 08/25/92)**
- (6) Signs indicating that a special event such as a fair, carnival, circus, festival or similar happening is to take place on the lot where the sign is located. Such signs may be erected not sooner than two weeks before the event and must be removed not later than three days after the event.
- (7) Temporary signs not covered in the foregoing categories, so long as such signs meet the following restrictions:
  - a. Not more than one such sign may be located on any lot.
  - b. No such sign may exceed four square feet in surface area.
  - c. Such sign may not be displayed for longer than three consecutive days nor more than ten days out of any 365-day period.

(b) Other temporary signs not listed in subsection (a) shall be regarded and treated in all respects as permanent signs, except that (as provided in Section 15-276) temporary signs shall not be included in calculating the total amount of permitted sign area.



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## Agenda Item Abstract

**File Number:**17-046

**Agenda Date:** 2/21/2017

**File Type:**Agendas

**In Control:** Board of Aldermen

**Version:** 1

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### TITLE:

Information Regarding Research on the Accessible Icon Project in the Town of Carrboro

**PURPOSE:** The purpose of this item is to update the Board of Aldermen on the Public Works Department's research into the possible implementation of the new wheelchair Accessible Icon Project for the Town of Carrboro.

**DEPARTMENT:** Public Works

**CONTACT INFORMATION:** JD Freeman, 919-918-7425

**INFORMATION:** In 2010 Sara Hendren, an assistant professor of design at Harvard Graduate School of Design, set out to modernize the commonly accepted symbol for disability, the International Symbol of Access. Ms. Hendren teamed with philosophy professor Brian Glenney to develop an image that shows a life in motion.

The 1968 era logo predates the digital era and is an immediate catalyst for change. The new design will encourage discussion about access, challenge perceptions of disability, and encourage a sense of inclusion and appreciation for the often overlooked members of the disability community. Most recently, the City of Durham and the City of New Bern, North

Carolina implemented the Accessible Icon Project. Orange County is also in the process of updating the icon.

The proposed alternative logo is not approved by the appropriate authorities as outlined within the memo quoted and linked below from the Federal Highways Administration:

“These alternative symbol designs have not been adopted or endorsed by the U. S. Access Board, which is responsible for promulgating Federal rules on accessibility and whose members include the U. S. Department of Justice and U. S. Department of Transportation. Additionally, the International Organization for Standardization, which established the official symbol, has stated that it does not support the alternative symbol design being promoted. The only symbols allowed for use in traffic control device applications are those adopted in the MUTCD or approved provisionally through the MUTCD official experimentation process...Further, the use of non-conforming symbols-whether by approval of local authority or by actions of citizens who deface a traffic control device-compromises the enforceability of these devices.”

[http://mutcd.fhwa.dot.gov/resources/interpretations/2\\_09\\_111.htm](http://mutcd.fhwa.dot.gov/resources/interpretations/2_09_111.htm)

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The Town has the authority to change the paintings on the ground, as they are not required or mandated by the MUTCD. Town staff intends to investigate the possibility of changing these in coordination with parking lot resurfacing projects.

The Town's Public Works Department will continue to research the project and provide further updates to the Board as information becomes available.

**FISCAL & STAFF IMPACT:** Future agenda materials will be provided with impacts associated with cost and staff impacts.

**RECOMMENDATION:** It is recommended that the Board of Aldermen receive this information.

## ATTACHMENT 1

**Old Icon Before and the New Icon After of the Wheelchair Accessible Logo**

Before



After







# Town of Carrboro

Town Hall  
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## Agenda Item Abstract

**File Number:** 17-044

**Agenda Date:** 2/21/2017

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**Version:** 1

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### TITLE:

Detailed Preview - Working Draft of Town Code Amendments to Modify Livestock Provisions Pertaining to Chickens and Rabbits

**PURPOSE:** The purpose of this agenda item is for the Board of Aldermen to receive the draft Town Code Amendments pertaining to chicken and rabbits in preparation for the upcoming public hearing on related Land Use Ordinance amendments.

**DEPARTMENT:** Planning Department

**CONTACT INFORMATION:** Patricia McGuire - 919-918-7327; [pmcguire@townofcarrboro.org](mailto:pmcguire@townofcarrboro.org) [<mailto:pmcguire@townofcarrboro.org>](mailto:pmcguire@townofcarrboro.org); Christina Moon - 919-918-7325, [cmoon@townofcarrboro.org](mailto:cmoon@townofcarrboro.org) [<mailto:cmoon@townofcarrboro.org>](mailto:cmoon@townofcarrboro.org); MartyRoupe - 919-918-7333, [mroupe@townofcarrboro.org](mailto:mroupe@townofcarrboro.org)

**INFORMATION:** On January 24, 2017, the Board of Aldermen set a public hearing for February 28<sup>th</sup> to consider Land Use Ordinance amendments related to Town Code provisions that relieve certain livestock facilities from setback requirements. The LUO amendments have been prepared as part of a package of changes to update and improve the Town's regulations for keeping chickens and rabbits, especially on smaller lots in Town. The related livestock ordinance provisions are scheduled for Board action on February 28<sup>th</sup> as well. A copy of the draft ordinance amending Chapter 10 is included (*Attachment A*).

The Board of Aldermen has been exploring such changes since the fall of 2014. Agenda materials from the earliest meeting, September 9, 2014, may be located at <https://carrboro.legistar.com/LegislationDetail.aspx?ID=1901078&GUID=B12A114E-2EC6-428A-A72A-3BD0CC6B0DAE&Options=ID|Text|&Search=september>. Further information on the ongoing review may be found in the January 24<sup>th</sup> agenda item at <https://carrboro.legistar.com/MeetingDetail.aspx?ID=525877&GUID=00FE6A10-718B-4FE5-82D7-8FD5C44B5668&Options=&Search=&>.

Items 1 through 5 present the changes identified in the Board's 2014 discussion. Items 6 through 12 present changes identified by the Town of Carrboro Animal Control Board of Appeals and staff during review of the matter. Where applicable, associated provisions in the draft Town Code amendment are presented in italic text.

1. Chicken coop size requirements - four square feet per chicken. *Table in Section 10-3(d)(1) establishes this as minimum coop/hutch size.*

2. Chicken run size requirements - six square feet per chicken. *Table in Section 10-3(d) (1) establishes this as minimum run /pen size.*
3. Regulate permissibility of keeping chickens based on locational requirements related to adjoining properties rather than minimum lot size. *Minimum lot size provisions are removed in this draft. Table in Section 10-3(d) (1) establishes locational requirements based on minimum setbacks for the coop and run.*
4. Allow certain number of chickens without a permit. *Section 10-3 (d) (1) establishes a requirement for submittal of a drawing that shows that coop and run installation will meet locational requirements. Section 10-3(d)(4) requires written permission of the property owner where chickens are being kept, per recommendation of Orange County Animal Control staff that contact information and tracking capabilities are in place in the event of avian flu outbreak or some similar reason.*
5. Remove requirement that chickens can only be kept for eggs for the consumption of the owners of the lot where they are located. *Section 10-3 (d)(5) allows the sale of eggs off-site outside of residential zoning districts.*
6. Clarify linkage to Orange County Unified Animal Control Ordinance - *A preamble describing the Board of Aldermen's adoption of the County ordinance and resolution regarding County enforcement has been added at the beginning of Chapter 10.*
7. Safety and health standards for chickens and rabbits - *Section 10-3(2) establishes minimum standards for protection from adverse weather, cleanliness of facilities, security of food containers from rodent infestations, and adequacy of enclosures.*
8. Consistency with Unified Animal Ordinance - *Some terminology is revised, such as changing 'domestic' to 'domesticated,' adding turkeys, and noting the use of 'poultry' to also refer to fowl.*
9. Consistency with North Carolina state law. *Express recognition of NC General Statutes is included in Section 10-3(d)(3).*
10. Noisy roosters or other birds or fowl. *Section 10-3(d)(6) prohibits the keeping of birds or fowl that produce noise that constitutes a public nuisance.*
11. Slaughter of animals. *Section 10-3(d)(7) specifies that the slaughter of animals must occur within a fully enclosed structure and remains must be disposed of in accordance with state law.*
12. Notification and permit approval process. *Section 10-3(e) states that the applicant and immediate neighbors will be notified of a date and time when they may comment on any concerns they may have regarding the issuance of a permit.*

**FISCAL & STAFF IMPACT:** None associated with receiving this detailed update on the draft Town Code amendments that will modify the livestock ordinance provisions pertaining to chickens and rabbits.

**RECOMMENDATION:** Staff recommends that the Board of Aldermen receive this detailed update.



## **CHAPTER 10**

### **ANIMAL CONTROL**

(Amend. 2-15-2017)

On January 21, 2016 the Orange County Board of County Commissioners adopted a Unified Animal Control Ordinance with an effective date of March 1, 2016. The Town of Carrboro Board of Aldermen has adopted a Resolution authorizing the enforcement of the Unified Animal Control Ordinance in Carrboro's corporate limits with the exception of the sections below. As to matters covered by the sections below, the provisions continue to apply in Carrboro's corporate limits. Otherwise, the Orange County Unified Animal Control Ordinance (UAO) applies in Carrboro.

#### Article I - Definitions

##### Section 10-1 Definitions

#### Article II - Taxation and Tags

##### Section 10-2 Privilege Tax on Dogs and Cats

#### Article III - Livestock and Wild Animals

##### Section 10-3 Permits

##### Section 10-4 Feeding of Deer Prohibited

#### Article IV - Regulation and Control

##### Section 10-5 Dogs Prohibited Within Farmers Market

##### Section 10-5.1 Dog Owners Required to Remove Feces Deposited by Dogs Section

##### 10-5.2 Tethering of Dogs Generally Prohibited (Created 9/13/11)

#### Article V - Appeals

##### Section 10-6 Appeals

## ARTICLE I

### DEFINITIONS

#### Section 10-1 Definitions

Unless otherwise specifically provided or unless otherwise clearly required by the context, the following words and phrases shall have the meaning indicated when used in this chapter:

(1) **Domesticated Livestock:** Animals raised for the production of meat, milk, eggs, fiber or used for draft or equestrian purposes, including but not limited to horses, mules, cows, pigs, goats, llamas, ostriches, sheep, fowl such as chickens, **turkeys**, ducks, etc. **(also referred to as poultry)**, rabbits, and all other animals that typically are kept primarily for productive or useful purposes rather than as pets.

(2) **Tether:** To restrain a dog outdoors by means of a rope, chain, wire, or other line, one end of which is fastened to the dog and the other end of which is connected to a stationary object or to a cable trolley system. (This definition excludes walking a dog with a handheld leash). (Created 9/13/11)

## ARTICLE II

### TAXATION AND TAGS

#### Section 10-2 Privilege Tax on Dogs and Cats.

(a) The owner of every dog or cat over four (4) months of age that is kept within the town shall annually pay to the town (through Orange County Animal Control) a tax on the privilege of keeping such animal within the town.

(b) The amount of the tax shall be established annually as part of the annual budget ordinance adoption process.

(c) In order to further the goal of controlling animal population, the tax on unspayed or un-neutered dogs and cats shall be higher than that of spayed or neutered animals.

## ARTICLE III

### **DOMESTICATED** LIVESTOCK AND WILD ANIMALS

#### Section 10-3 Permits:

(a) No person may keep or display within the town any wild or exotic animal as defined in **Subsection 4-37(kk) and 4-37(o) of the UAO.** In addition, no person may display snakes or reptiles of any kind.

(b) No person may keep within the town any permissible domesticated livestock over four (4) months of age except in accordance with a permit issued pursuant to subsection (c).

(c) Subject to the UAO and subsections (d) and (e) below, no permit may be issued for any domesticated livestock unless the applicant for the permit demonstrates that the livestock will be kept on a tract of land that satisfies each of the following conditions:

- (1) The tract shall consist of at least 40,000 square feet of land under single ownership or control.
- (2) There shall be at least 20,000 square feet of land per animal.
- (3) No fence, coral, or other similar enclosure shall be erected within 15 feet of any property line.
- (4) No barn, stable or similar structure used for the keeping of domesticated livestock other than fowl ~~rabbits~~ or ~~rabbits~~ fowl shall be erected or maintained within 50 feet of any property line or street-right-of-way.
- ~~(5) No barn, cage, pen, or similar structure used for the keeping of rabbits or fowl shall be erected or maintained within 15 feet of any property line or street right-of-way line.~~

(d) The provisions of subsection (c)(3), (4) and (5) shall not preclude the establishment, with the consent of the affected adjoining property owners, of a commonly owned or used fence, barn or other enclosure, all of which is located along or near a common property line.

(de) The provisions set forth above in (c)(1) and (c)(2) shall not apply to ~~fowl~~ ~~rabbits~~ and ~~rabbits~~ ~~fowl~~. However, provided, however, that a permit is required to keep fowl and rabbits within the town limits. Such permit is personal to the applicant to whom it is issued, and is not transferable to another person or to another property. #No such permit may be issued for ~~fowl~~ ~~rabbits~~ or ~~rabbits~~ ~~fowl~~ unless the provisions of ~~(de)(43) through (d)(7) and (e)(4)~~ are complied with and unless the permit applicant demonstrates compliance with the following conditions:

~~(1) The tract where such livestock are kept shall consist of at least 10,000 square feet.~~

~~(2) Such livestock may be kept only (i) on a lot used for residential purposes and only for the consumption of persons who reside at that lot, or (ii) on a common open space area within a residential development with the written permission of the owner of such common space land accompanied by a copy of association minutes reflecting the approval decision, and only for the consumption of persons who reside within that residential development. Such livestock may not be kept for commercial purposes. (Amend. 10/6/09)~~

(1) The applicant shall submit ~~with the application~~ a drawingsite plan showing the location of the facilities, the shelter, coop (fowl) or hutch (rabbit), and associated enclosure for the run or pen subject to the dimensional requirements in the table below.

<u>Type/Size of Facility</u>	<u>Number of Fowl/Rabbits</u>		
	<u>3-5</u>	<u>6-10</u>	<u>11-20**</u>
<u>Minimum coop/hutch size in square feet (sf) (4 sf/ fowl or rabbit)</u>	<u>12-20 sf</u>	<u>24-40 sf</u>	<u>44-80 sf</u>
<u>Minimum run/pen size in square feet (sf) (6 sf/ fowl or rabbit)</u>	<u>18-30 sf</u>	<u>36-60 sf</u>	<u>66-120 sf</u>
<b><u>Locational Requirements</u></b>			
<u>Coop/hutch and run/pen - property line setback</u>	<u>5 feet(rabbits) 0 feet (fowl)</u>	<u>10 feet</u>	<u>20 feet</u>
<u>Coop/hutch and run/pen - right-of-way setback</u>	<u>15 feet</u>	<u>20 feet</u>	<u>30 feet</u>
<u>Coop/hutch and run/pen - setback from nearest residence (other than the owner's)</u>	<u>30 feet</u>	<u>100 feet</u>	<u>100 feet</u>

\*\*State statutes, such as N.C. Gen. Stat. 160A-203.1, limits the number of birds to 20.

- (2) The following minimum standards apply to any facilities-shelter or enclosures associated with keeping fowl or rabbits:
- a. Facilities shall provide adequate protection from adverse weather, predators and rodents.
  - b. Facilities shall be maintained in a clean and sanitary condition at all times.
  - c. The applicant shall construct and install a sufficient barrier to prevent fowl or rabbits from roaming beyond the confines of the subject property.
  - d. Fowl or rabbit food shall be kept in rodent proof containers.
  - e. No fewer than three (3) fowl are allowed.
  - d.f. All permits issued under this section are subject to annual review and inspection.

- (3) The keeping of backyard fowl or rabbits shall be in accordance with all applicable state law.

- (4) Such animals may be kept only (i) on a lot used for residential purposes with written permission of the owner, if the owner is not the applicant, or (ii) on a common open space area within a residential development with the written permission of the owner of such common space land accompanied by a copy of the association minutes reflecting the approval decision.

- (5) Any sale of eggs produced on a residential lot must occur off-site, outside of residential zoning districts.

- (6) It shall be unlawful for any person to keep or maintain on any lot within the Town's corporate limits any rooster, duck, goose or other such bird or fowl that by loud and habitual crowing, quacking or honking or other manner constitutes a public nuisance. Failure to abate such nuisance within two (2) days after receiving written notice from the town shall be a violation of the provisions of this chapter, and shall

subject the permittee to penalties as set forth in Section 10-

- (7) Slaughter of animals must occur within a fully enclosed structure.  
Disposal of animals shall be in accordance with state law.

(e) The permit required by this Section is an administrative permit. Before issuing a permit under this section, the Administrator shall notify the applicant and the applicant's immediate neighbors owning and/or residing at property within 150 feet of the boundary of the applicant's property by any convenient means of a date and time of an informational meeting concerning the application. when they may be heard on the questions of whether a permit should be issued. After the informational meetinghearing, the Administrator shall set forth in writing his reasons for the issuances or denial of the permit and shall furnish furnae a copy thereof to any person.

(e1) The provisions of subsection (c)(1) through (5) shall not apply to "fainting goats." However, no permit may be issued for a person to keep fainting goats unless the permit applicant demonstrates compliance with the following conditions: (Amend. 8/25/09)

~~(3)~~(1) The tract where such livestock are kept shall consist of at least 25,000 square feet;

~~(4)~~(2) Such livestock may be kept only on a lot used for residential purposes and only for the consumption of persons who reside at that lot; such livestock may not be kept for commercial purposes;

~~(5)~~(3) No more than two (2) fainting goats may be kept on a single tract or lot;

~~(6)~~(4) Any person wishing to keep fainting goats on their property must seek and obtain a permit to do so;

~~(7)~~(5) The Administrator shall issue the permit required by this section unless he finds:

- (1) The applicant has failed to comply with subsection (e1);
- (2) The animal(s) for which the permit is requested poses a substantial danger of harm to any person, animal or property;
- (3) The animal(s) for which the permit is requested is likely to or does interfere with the use and enjoyment of neighboring properties because of offensive noise or odor or for other reasons;
- (4) The animal(s) for which the license is requested otherwise constitutes a threat to the public health or safety.

~~(e)~~(f) After compliance with subsection (g), the administrator shall issue the permit required by this section unless he finds that:

- (1) The applicant has failed to comply with subsection (c);
- (2) The animal for which the permit is requested poses a substantial danger of harm to any person, animal, or property.

- (3) The animal for which the permit is requested is likely to or does interfere with the use and enjoyment of neighboring properties because of offensive noise or odor or for other reasons.
- (4) The animal for which the license is requested otherwise constitutes a threat to the public health or safety.

~~(f)~~(g) Before issuing a permit under this section, the Administrator shall notify the applicant and the applicant's immediate neighbors by any convenient means of a date and time when they may be heard on the question of whether a permit should be issued. After the hearing, the Administrator shall set forth in writing his reasons for the issuance or denial of the permit and shall furnish a copy thereof to any person requesting the same. Any person aggrieved by the issuance or denial of a permit under this section appeal such decision to the Animal Control Board of Appeals pursuant to Section 10-38 (except that the burden of demonstrating that the administrator erred shall be on the appellant). (Amend. 8/25/09)

#### Section 10-4 Feeding of Deer Prohibited:

(a) Subject to subsection (f), no person within the corporate limits of the town may place or allow any device or any fruit, grain, mineral, plant, salt, vegetable, or other material to be placed outdoors on any public or private property for the purpose of feeding or attracting deer.

(b) There is a rebuttable presumption that the placement of any fruit, grain, mineral, salt, plant, vegetable, or other material edible by deer at a height of less than five (5) feet off the ground is for the purpose of feeding deer.

(c) There is a rebuttable presumption that the placement of any fruit, grain, mineral, salt, plant, vegetable, or other material edible by deer in a drop feeder, automatic feeder, or similar device regardless of the height of such device is for the purpose of feeding deer.

(d) Each property owner shall remove any materials placed on the owner's property in violation of this section within 48 hours of being notified by the town that such violation exists. Failure to do so shall constitute a separate violation of this section.

(e) Each property owner shall remove any device placed on the owner's property to which deer are attracted or from which deer actually feed. Alternatively, a property owner may modify such device or make other changes to the property that prevent deer from having access to or feeding from the device. Failure to remove the device or make necessary modifications with 48 hour of notice from the town shall constitute a separate violation of this section.

(f) This section does not apply to:

- (1) Naturally growing materials, including but not limited to fruits, grains, seeds, vegetables, or other crops or vegetation.
- (2) Stored crops, provided that such crop materials are not intentionally made available to deer.
- (3) Feeders used to provide food to domestic animals or livestock.

#### Section 10-5 Dogs Prohibited Within Farmers Market

No owner or keeper or other person in possession of any dog may allow such animal to go upon the premises operated by or for the town as a farmers market during any period when the market is in operation.

#### Section 10-5.1 Dog Owners Required to Remove Feces Deposited by Dogs (Amend. 10/7/08)

~~(a)~~—Subject to subsection (b), it shall be unlawful for the owner of any dog, or any person walking or otherwise in charge of such dog, to fail or refuse to remove feces deposited by such dog on any street, sidewalk, park, or other publicly owned area, or on any private property.

~~(b)~~(a) The provisions of subsection (a) of this section shall not apply to the premises occupied by the owner or keeper of the dog, but shall apply to any common areas in any two-family or multi-family residential development.

#### Section 10-5.2 Tethering of Dogs Generally Prohibited

- (a) The Board finds that:
- (1) Tethered dogs can and do become highly territorial and aggressive, presenting a significant risk of injury to the public through dog bites and attacks; and
  - (2) Tethered dogs can and do negatively impact community life through nuisance barking; and
  - (3) Tethered dogs are at risk of becoming tangled and prevented from reaching food, water, and shelter; and
  - (4) Tethered dogs are at risk of sustaining injury or death from accidental strangulation and are less able to defend themselves from other animals.
- (b) Subject to subsections (c) and (d) of this section, no person may tether a dog, and no owner or keeper of a dog may or cause or permit such dog to be tethered.
- (c) Provided that the tethering does not extend for more than seven (7) consecutive days and that the tethering device meets the standards set forth in subsection (d), tethering of a dog shall be permissible under the following circumstances:
- (1) Lawful dog activities such as hunting, hunting training, and hunting sporting events, field and obedience training, field or water training, law enforcement training, veterinary treatment and/or the pursuit of working or competing in these legal endeavors.
  - (2) Any activity where the tethered dog is in visual range of its owner or keeper and the owner or keeper is located outside with the dog.
  - (3) After taking possession of a dog that appears to be a stray dog, and after so notifying the Animal Control Officer, the dog may be tethered while the person taking possession of the dog searches for its owner.
- (d) When tethering is permitted under the circumstances specified in subsection (c), the tethering may take place only in accordance with the following requirements:

- (1) Tethers must be made of rope, twine, cord, or similar material with a swivel on

one end or must be made of a chain that is at least ten (10) feet in length with swivels on both ends and which does not exceed ten (10) percent of the dog's body weight.

- (2) The tether may be fastened to the dog only by attachment to a buckle type collar or body harness.

The dog must be tethered in such a manner that it has access to food, water, and shelter.



ARTICLE ~~V~~

## APPEALS

ANDPENALTIESSection 10-6(a) Appeals:

~~(a)~~ (1) The owner of any animal who (i) is required to remove his animal from the Town based upon a finding that the animal is or creates a public nuisance, or (ii) who has been assessed and has paid a civil penalty, (iii) whose permit is denied or revoked pursuant to applicable regulations, or (iv) whose animal is declared to be “dangerous” or “vicious” pursuant to applicable regulations, may appeal to the Animal Control Board. An appeal shall be taken within ten (10) days after receiving the written notice of the determination appealed from except that appeals from a determination that a dog is a vicious dog or a dangerous dog shall be taken within three (3) days of notification. An appeal is taken by filing a written notice of appeal with the administrator and stays all enforcement efforts of the administrator until the appeal is disposed of. An appeal from an order to pay civil penalties shall first be reviewed by the Chief of Police, or his designee, who shall have the authority to affirm, revise or modify the order. If the owner is unsatisfied with the first civil penalty review, the owner may then appeal to the Animal Control Board of Appeals within ten (10) days of the Chief’s, or his or her designee’s, decision.

~~(b)~~ (2) The Animal Control Board of Appeals shall consist of three (3) members and one (1) alternate appointed by the board of aldermen. The board of aldermen shall designate one member as chairman. The members shall serve three-year staggered terms. The alternate shall also serve a three-year term and shall be appointed initially for a term of three (3) years.

~~(c)~~ (3) The board shall meet within twenty (20) days after notice of appeal is filed. A quorum of the board shall consist of three (3) members, and all decisions shall be made by majority vote. The board may uphold, reverse, or modify the determination appealed from, and the administrator shall thereafter continue, modify or cease his enforcement efforts in accordance with the board’s decision.

~~(d)~~ (4) The burden of justifying the administrator’s determination shall be on the administrator. Strict rules of evidence need not be followed, but the board may consider only what a witness knows of his own knowledge, and no decision may be based upon hearsay alone.

(5) The board shall reach a decision as expeditiously as possible and shall provide the appellant and the administrator with a written decision, stating the reasons therefore.

(b) Penalties:

(1) A violation of any of the provisions of Section 10.3 shall subject the offender to a civil penalty of \$25.00. A violation of Section 10-2 shall subject the offender to a civil penalty of \$50.00. The penalty for second and subsequent violations of the same provisions of Section 10-3 shall be

set forth in the following table:

<u><b>Violation</b></u>	
Second	\$ 50.00
Third	\$ 75.00
Fourth	\$100.00

A fifth or subsequent violation of Section 10.3 shall subject the permittees to revocation of their permit upon written notice of record. Said notice of revocation is subject to appeal pursuant to subparagraph (a) above.

If the offender fails to pay any penalty within fifteen (15) calendar days after being cited for a violation, the penalty may be recovered by the town in a civil action in the nature of a debt.

(2) Each day that any violation continues after a person has been notified that such violation exists and that he is subject to the penalties specified in subsections (a) and (b) shall constitute a separate offense.

(3) This chapter may also be enforced by any appropriate equitable action, including injunctions or orders of abatement.

(4) The town may enforce this chapter by any one or any combination of the foregoing remedies.

~~(e)~~



# Town of Carrboro

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

## Agenda Item Abstract

**File Number:** 17-045

**Agenda Date:** 2/21/2017

**File Type:** Agendas

**In Control:** Board of Aldermen

**Version:** 1

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### TITLE:

Comments on the DCHC-MPO Comprehensive Transportation Plan

**PURPOSE:** The purpose of this agenda item is to approve comments that will be forwarded to the MPO Board on the draft Comprehensive Transportation Plan.

**DEPARTMENT:** Planning

**CONTACT INFORMATION:** Bergen Watterson, 919-918-7329, [bwatterson@townofcarrboro.org](mailto:bwatterson@townofcarrboro.org) [<mailto:bwatterson@townofcarrboro.org>](mailto:bwatterson@townofcarrboro.org); Tina Moon, 919-918-7325, [cmoon@townofcarrboro.org](mailto:cmoon@townofcarrboro.org) [<mailto:cmoon@townofcarrboro.org>](mailto:cmoon@townofcarrboro.org)

**INFORMATION:** The Board of Aldermen received a presentation on the draft Comprehensive Transportation Plan (CTP) at its January 17, 2017 regular meeting. A summary of the CTP, its role in transportation planning and Board questions and answers are provided in the attached memorandum (Attachment B). Staff has been working with Durham-Chapel Hill-Carrboro MPO (DCHC-MPO) and North Carolina Department of Transportation (NCDOT) staff to create the CTP and to ensure that Carrboro's transportation needs are accurately reflected. The draft CTP may be found on NCDOT's website at the following link:

[https://connect.ncdot.gov/projects/planning/Pages/CTP-Details.aspx?study\\_id=Durham-Chapel%20Hill-Carrboro](https://connect.ncdot.gov/projects/planning/Pages/CTP-Details.aspx?study_id=Durham-Chapel%20Hill-Carrboro).

The CTP is designed to serve as the first step in the long-range transportation planning process to identify future improvements for funding through the SPOT process as well as to determine consistency in the development process. Most of the jurisdictions in the DCHC-MPO currently use an adopted Thoroughfare Plan for this purpose; the Town of Carrboro uses the Thoroughfare Plan and other adopted plans. The CTP is designed to replace local Thoroughfare plans.

Public comments on the plan will be accepted through February 24, 2017. Comments received, to date, may be found on DCHC-MPO's website at the following link: <http://www.dchcmpo.org/programs/ctp/default.asp>. The DCHC-MPO Board is expected to adopt the CTP in March 2017 and NCDOT in April 2017.

A resolution, designed to reflect Board comment at the January meeting has been provided (Attachment A). A one-page summary sheet identifying Orange County Transit Plan benefits to Carrboro citizens has been also provided (Attachment E).

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**Agenda Date:** 2/21/2017

**File Type:**Agendas

**In Control:** Board of Aldermen

**Version:** 1

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**FISCAL & STAFF IMPACT:** There is no fiscal impact associated with submitting comments on the CTP. Future impacts, dependent on the inclusion of transportation projects in the adopted CTP, will be brought back to the Board for individual consideration at future meetings.

**RECOMMENDATION:** Staff recommends that the Board of Aldermen approve the resolution authorizing the submittal of comments on the draft CTP.

A RESOLUTION AUTHORIZING THE SUBMITTAL OF RECOMMENDATIONS ON  
THE DCHC-MPO COMPREHENSIVE TRANSPORTATION PLAN

WHEREAS, the state of North Carolina mandated that all MPOs create a Comprehensive Transportation Plan (CTP) to address future needs; and

WHEREAS, the draft DCHC-MPO CTP includes highway, transit, bicycle, and pedestrian recommendations for the Town of Carrboro; and

WHEREAS, projects submitted through the SPOT prioritization process are expected to come from an adopted CTP.

NOW, THEREFORE, BE IT RESOLVED by the Carrboro Board of Aldermen that the Board authorizes that the following comments be conveyed on behalf of the Town:

- 1) The Carrboro Board of Aldermen supports transit improvements and is cognizant of citizen concerns relating to the increasing costs for the Durham-Orange Light Rail Project and the N-S Corridor Bus Rapid Transit Project as well as the potential need to reallocate funding for other transportation projects such as bike and pedestrian improvements, which may provide more direct benefit to Carrboro residents. Timely dissemination of updates relating to both the cost and scheduling of these projects will be critical to their success moving forward. Enhanced feeder bus services and access improvements that will enable Carrboro residents to utilize these transit projects to the same extent as their neighbors will likewise be essential.
- 2) Consider maximizing high occupancy vehicle lanes (HOV) as a managed use for the I-40 expansion.
- 3) Future transit should more fully explore the benefits of bus rapid transit, particularly as the cost of infrastructure and flexibility in route design may make that mode a more efficient option to light rail.
- 4) A direct transit connection from Carrboro/Chapel Hill to RDU Airport is highly desired.
- 5) The Town is pleased to see that the draft CTP is, in general, consistent with Carrboro's policy of widening road corridors to accommodate bike/ped improvements rather than vehicular travel.
- 6) The Board reiterates its preference to accommodate anticipated capacity needs on NC 54 west through intersection improvements rather than a substantial widening that would be inconsistent with the land use policies along the corridor.

This the 21<sup>st</sup> day of February in 2017.



## TOWN OF CARRBORO

NORTH CAROLINA

### TRANSMITTAL

### PLANNING DEPARTMENT

**DELIVERED VIA:** ☐ HAND ☒ MAIL ☐ FAX ☒ EMAIL

**To:** David Andrews, Town Manager  
Mayor and Board of Aldermen

**From:** Tina Moon, Planning Administrator

**Date:** February 21, 2017

**Subject:** Comprehensive Transportation Plan

**CC:** Patricia McGuire, Planning Director

### SUMMARY

At the January 17, 2017 Board of Aldermen meeting, Julie Bogle with NCDOT, provided the Board with an overview of the Durham-Chapel Hill-Carrboro Metropolitan Planning Organization's (MPO) draft Comprehensive Transportation Plan (CTP). The presentation was designed to give the Board an introduction to the plan in concept and an understanding of its relationship to other transportation documents. Sample excerpts from the plan were shown to illustrate particular segments as examples of the type of information included therein. Board members asked questions and requested an opportunity to finalize comments at a later time. The following memorandum outlines the key points described in the presentation, including answers to Board questions, and provides a draft set of comments for the Board's consideration. Comments may be conveyed to the MPO-Board for inclusion in its deliberations on March 8<sup>th</sup> by way of the Carrboro Board liaisons or may be conveyed to the MPO and NCDOT via staff. Comments from the Transportation Advisory Board are referenced at the end for information. The formal public comment period is open through February 24th.

### REVIEW OF COMPREHENSIVE TRANSPORTATION PLAN

A quick review of the key aspects of the CTP may be helpful. Mandated by the state for metropolitan planning organizations (MPO) and rural planning organizations (RPO), the Comprehensive Transportation Plan (CTP) is a long-range, multi-modal transportation plan, which unlike the Metropolitan Transportation Plan (MTP), is not fiscally constrained. The CTP verifies existing transportation facilities and describes future transportation needs--identifying corridor

designs (cross sections) by segment for different modes of travel, highway, transit, bike and pedestrian. Specific transportation improvement projects are then defined for consideration in the MTP, a twenty-year plan and a federal requirement for MPOs. Projects in the MTP may be submitted for consideration in the ten-year State Transportation Improvement Program (STIP) by the various jurisdictions and transit agencies. Inclusion in the STIP and the allocation of funding is determined by a data-driven prioritization process with input from the MPO and NCDOT. NCDOT makes the final decision as to which projects are included in the STIP and the timeline (fiscal year) for funding allocation.

Jurisdictions have used long-range transportation plans as an element of comprehensive planning for determining consistency during the development review process for permit applications and petitions for rezonings. If adopted, the CTP will replace the existing Thoroughfare Plan for this purpose (Attachment D), and staff will bring forward draft text amendments to the Land Use Ordinance to change references to the Thoroughfare Plan to the CTP. (Carrboro uses the Thoroughfare Plan as well as other plans for the purposes described above.) While the CTP includes a narrative section, the formal plan adopted by NCDOT consist of only the maps, five total, separated into the following modes: Highways and Intersections, Bus Transit and Rail, Passenger Rail, Bicycle and Multiuse, and Pedestrian and Multiuse. (The draft CTP maps may be found at: [https://connect.ncdot.gov/projects/planning/Pages/CTP-Details.aspx?study\\_id=Durham-Chapel+Hill-Carrboro.](https://connect.ncdot.gov/projects/planning/Pages/CTP-Details.aspx?study_id=Durham-Chapel+Hill-Carrboro.))

## BOARD QUESTIONS FROM JANUARY 17<sup>TH</sup>

- Are unpaved paths eligible for funding? What about the proposed unpaved paths north of Hillsborough?

*Orange County submitted a conceptual network of unpaved walking trails as part of its section of the CTP Pedestrian and Multiuse map. These walkways include possible historic paths through rural lands, such as segments of the Trading Path, by Hillsborough (<http://tradingpath.org/>), and narrow “goat” paths running parallel along major rural roads which are sometimes used by pedestrians and could collectively form a network. Both corridor systems were included in the CTP, more for the potential to request easements during development proposals than to seek funding through state and federal sources. Julie Bogle indicated at the meeting, that unpaved paths that are not ADA compliant are ineligible for state funding. Staff is awaiting clarification from NCDOT on the potential to use transportation funds for paths of different surfaces for different purposes, e.g. regional greenways, sidepaths, recreation facilities, etc.*

- Does the CTP include, or can it include improved bus travel from Carrboro/Chapel Hill to the airport?

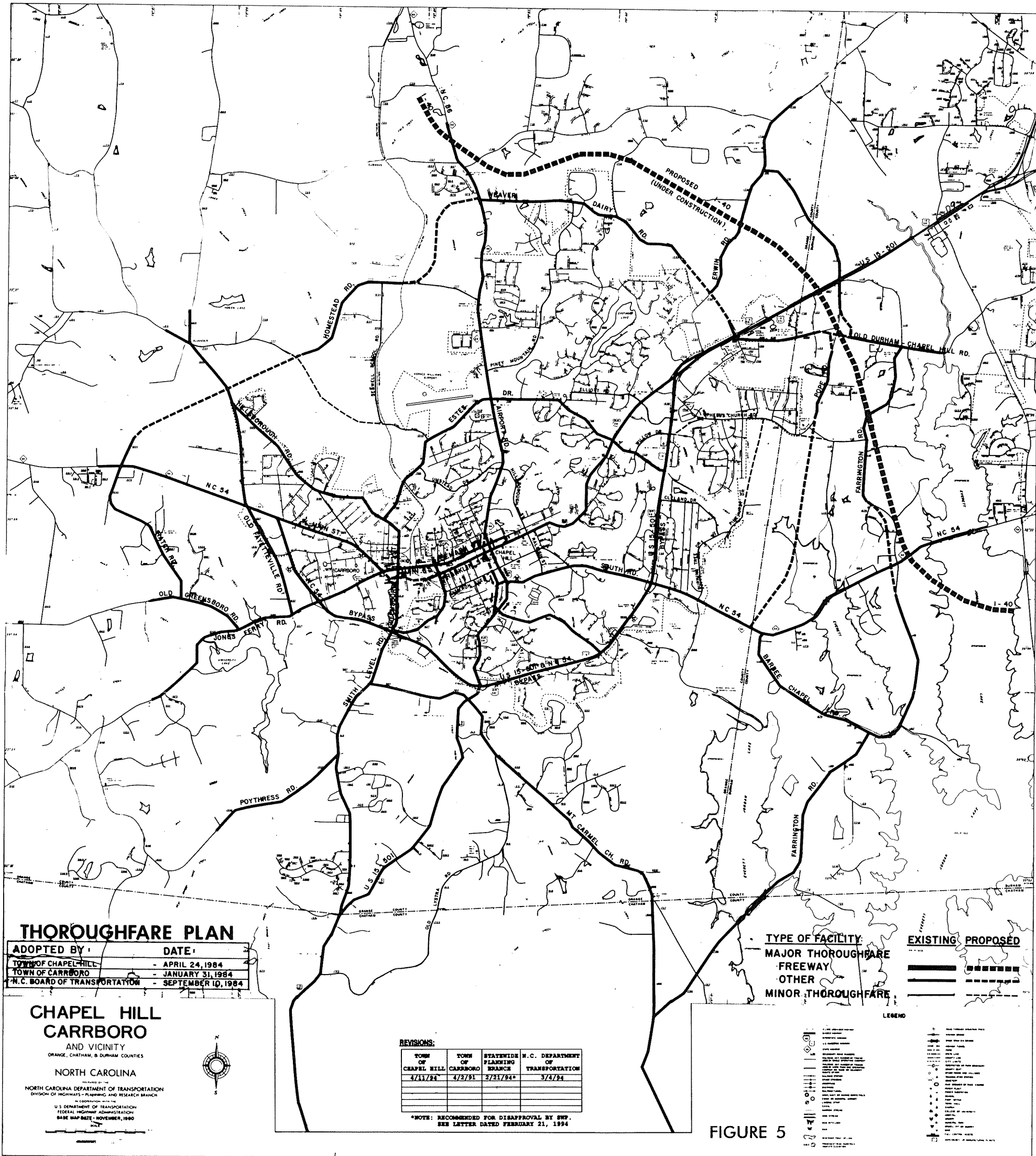
*Local residents can currently travel to the airport by bus using a combination of Chapel Hill Transit and GoTriangle services but a transfer is necessary at the GoTriangle hub in RTP to complete the trip. GoTriangle is working on expanding bus service in the region from Carrboro to RDU.*

- What is the status of the proposed improvements to NC Hwy 54 west of Carrboro?  
*During the SPOT 4.0 prioritization process, NCDOT submitted a project to improve NC 54 West from the existing two-lane corridor to a four-lane median divided road based on an anticipated need for increased capacity from Alamance County during peak commuting hours (TIP#H1034374). Carrboro MPO Board representatives requested a corridor study to gain a better understanding of the future capacity needs and the most appropriate improvements to address those needs, such as intersection improvements. The DCHC-MPO Long-Range Planning staff, with input from Carrboro and Orange County staff, advertised a Request for Information (RFI) for the corridor study in October 2016, received eight responses and interviewed two firms in early February 2017. Staff anticipates contract execution within the next two months, with the project getting underway shortly thereafter. The timeline for project completion is approximately one year.*
- What is meant by the term “managed lanes” as it relates to the proposal to widen sections of I-40?  
*The U.S. Department of Transportation, Federal Highway Administration describes managed lanes as highway facilities or a set of lanes where operational strategies are proactively implemented and managed in response to changing conditions, and often where a set of lanes within the freeway cross section is separated from the general purpose lanes. Examples include, high-occupancy vehicle (HOV) lanes, value priced lanes, high-occupancy toll (HOT) lanes, or exclusive or special use lanes. Julie Bogle indicated at the meeting that a specific use for managed lanes on I-40 has not been designated at this time.*

### **ADDITIONAL COMMENTS**

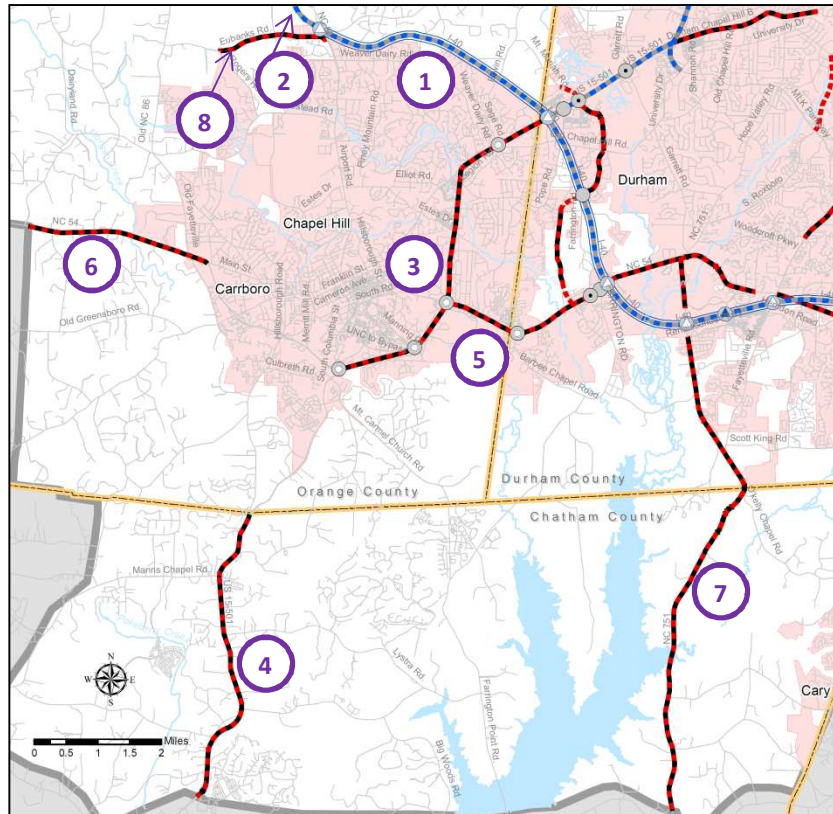
Comments from the Transportation Advisory Board are included as a separate attachment (Attachment F). The Board may wish to incorporate TAB comments into the formal recommendations; staff have not.





**Carrboro, Chapel Hill, S Orange County & NE Chatham County**  
**Key CTP Highway & Non-Highway Recommendations**

DRAFT



**KEY CTP HIGHWAY PROJECTS**

No.	Facility	Project Location	Status	Recommendation
1	I-40	15-501 to NC 86	Needs Imp.	Widen freeway to 8 lanes. With 6 to 8 General purpose and 2 to 4 managed lanes.
2	I-40	NC 86 to I-85	Needs Imp.	Widen freeway to 6 general purpose lanes.
3	US 15-501	NC 86 (S Columbia St) to I-40	Needs Imp.	<ul style="list-style-type: none"> <li>- NC 86 (S Columbia St) to E Franklin St: Widen to a 6 lane boulevard with new/improve interchanges at needed locations with improved bus, bicycle and pedestrian accommodations.</li> <li>- E Franklin St to I-40: Improve facility to better accommodate bus, bicycle and pedestrian traffic.</li> </ul>
4	US 15-501	Smith Level Rd to south of Andrews Store Rd	Needs Imp.	Improve access management along US 15-501 in accordance with the 2014 Corridor Study recommendations.
5	NC 54	US 15-501 to NC 55	Needs Imp.	<ul style="list-style-type: none"> <li>- Barbee Chapel Rd to NC 55: Add travel lanes.</li> <li>- US 15-501 to I-40: Improve to superstreet with interchanges.</li> <li>- Throughout corridor: Improved bicycle, pedestrian and light rail transit accommodation.</li> </ul>
6	NC 54	Old Fayetteville Rd to Bethel Hickory Grove Church Rd	Needs Imp.	Provide operational improvements; further study is needed to determine specific long-term improvements.
7	NC 751	NC 54 to Martha's Chapel Road (in Chatham County)	Needs Imp.	Improve to a boulevard facility. Further study is needed for cross section.
8	Eubanks Rd	NC 86 to Rogers Rd	Needs Imp.	Widen to a 4 lane divided boulevard.

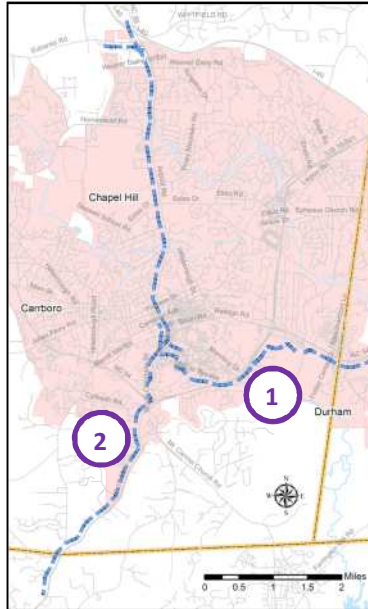
*\*This Key CTP list and map has been updated since CTP release for public comment, so may not match the released CTP.*

Note: This map and table shows only draft key highway or non-highway projects. See the draft CTP on the CTP web sites for all projects.

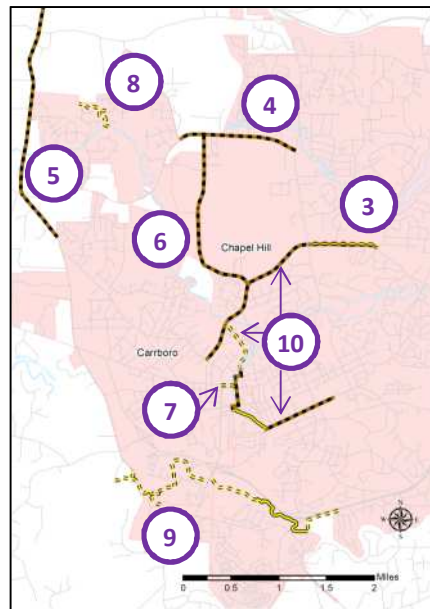
## Carrboro, Chapel Hill, S Orange County &amp; NE Chatham County

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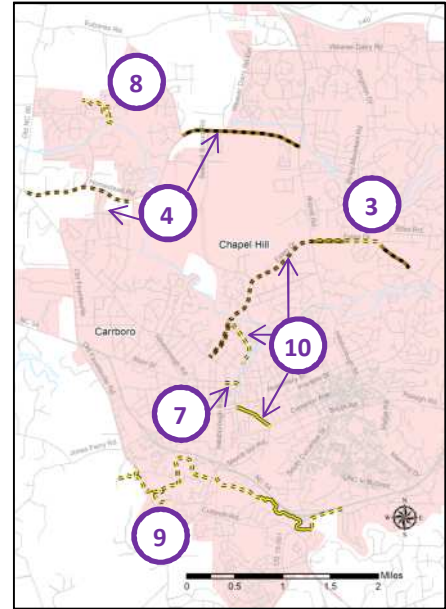
## Key CTP Highway &amp; Non-Highway Recommendations



Key Transit Projects



Key Bicycle &amp; Multiuse Projects



Key Pedestrian &amp; Multiuse Projects

## KEY CTP NON-HIGHWAY PROJECTS

No.	Facility	Project Location	Type	Status	Recommendation
1	Durham-Orange Light Rail Transit (D-O LRT)	Chapel Hill to Durham	Light Rail Transit	Recomm. New Facility	Light rail tracks running from UNC Hospitals in Chapel Hill to NCCU in Durham.
2	CHT BRT: N-S Corridor	Eubanks Park & Ride to Southern Village	Bus Rapid Transit	Recomm. New Route	Bus Rapid Transit route along NC 86 (MLK Jr Blvd to S Columbia St) and US 15-501.
3	Estes Dr	N Greensboro St to Granville Rd	Bicycle, Sidewalk & Multiuse	Needs Imp. & Recomm. New Facility	- N Greensboro St to NC 86: Bicycle lanes and sidewalks. - NC 86 to Granville Rd: Combination of bicycle lanes, sidewalks and multi-use paths.
4	Homestead Rd	NC 86 to Old NC 86	Bicycle & Sidewalk	Needs Imp.	Construct new or improve existing bicycle lanes and sidewalks.
5	Old NC 86	Farmhouse Rd to New Hope Church Rd	Bicycle	Needs Imp.	- Farmhouse Rd to Homestead Rd: Bicycle lanes. - Homestead Rd to New Hope Church Rd: Improve to 4 foot paved shoulder.
6	Seawell School Rd	Estes Dr to Homestead Rd	Bicycle	Needs Imp.	Bicycle lanes.
7	Downtown Connector	N Greensboro St to Lloyd St	Multiuse	Recomm. New Facility	Construct new multiuse path.
8	Jones Creek Greenway	Lake Hogan Farms Rd to existing multiuse path	Multiuse	Recomm. New Facility	Construct new paved Greenway/Multiuse path.
9	Morgan Creek Greenway	University Lake Rd to Morgan Creek Rd & Ext/Spurs	Multiuse	Recomm. New Facility	Construct new paved Greenway/Multiuse path.
10	Campus to Campus	Carolina North Campus to UNC Main Campus	Bicycle, Sidewalk & Multiuse	Needs Imp. & Recomm. New Facility	Combination of bicycle lanes, sidewalks and multi-use paths.

*\*This Key CTP list and map has been updated since CTP release for public comment, so may not match the released CTP.*

### Orange County Transit Plan Benefits to Carrboro

There are a number of projects and improvements expected to be included in the new Transit Plan that will benefit Carrboro directly and indirectly.

#### **Bus Capital Improvements**

<b><u>Project</u></b>	<b><u>Description</u></b>	<b><u>Schedule</u></b>
<b>Transit Improvements</b>		
Chapel Hill Transit real-time bus information system update	Replace or update real-time information system	FY19
GoTriangle bus stop improvement in Carrboro	Bus shelter for Carrboro-Durham GoTriangle route	FY18
Bus stop improvements	2 new bus shelters in Carrboro	Fy18
CHT ADA upgrades at bus stops	CHT has developed a list of bus stops that are in need of upgrades to meet ADA standards	FY17
CHT lighting in bus shelters		FY17
CHT bus stop sign design and replacement	Update the design and customer information signs and poles at 600+ stops	FY20
CHT system-wide bus stop amenities design manual		FY18
<b>Bus Access Improvements</b>		
S. Greensboro St. sidewalk	Additional funds for this sidewalk project	FY19
Morgan Creek Greenway	Additional funds for this greenway project	FY18
Estes Drive Corridor Study	Corridor study to inform bike/ped/transit improvements along corridor	FY18
Estes Drive bike lanes, sidewalks, transit accommodations	Additional funds for this STIP project	FY20
W. Main Street sidewalk	Fill sidewalk gap from Fidelity to Poplar	FY18

#### **Expanded Bus Hours**

The original Orange County Bus and Rail Investment Plan originally planned for 35,300 revenue hours of expanded bus service in the first 5 years. To date nearly 25,000 revenue hours have been implemented, including amount spent on existing service. Additionally, in August 2016 GoTriangle expanded the 405 route to serve two stops in Carrboro, resulting in direct regional bus service from Carrboro to downtown Durham during peak morning and afternoon hours. Ridership of this route has exceeded GoTriangle expectations in the first six months.

#### **Major Capital Improvements**

The Durham-Orange Light Rail and the North-South Bus Rapid Transit project are both included in the updated Orange County Transit Plan and will indirectly benefit Carrboro residents. The Comprehensive Transportation Plan includes several feeder busses that will connect Carrboro residents to the Light Rail station at Mason Farm, and to the Bus Rapid Transit corridor in Chapel Hill. Additionally, new and improved park-and-ride locations that will serve these new systems may help to reduce congestion and commute trips through and around Carrboro.



# TOWN OF CARRBORO

## Transportation Advisory Board

***301 West Main Street, Carrboro, North Carolina 27510***


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**THURSDAY, FEBRUARY 2<sup>ND</sup>, 2017**

### Transportation Advisory Board Comments re: Comprehensive Transportation Plan

The Transportation Advisory Board discussed the draft Comprehensive Transportation Plan at the both the January 19<sup>th</sup> and February 2<sup>nd</sup>, 2017 meetings. The TAB would like to submit the following comments to the public record:

- E. Main Street from Rosemary to Weaver/Roberson – please consider changing cross-section of this road so that it shows two vehicle travel lanes, a center turn lane, and protected bike lanes.
  - The current highway CTP shows that its current cross-section is adequate for the 2040 capacity. The bike and multiuse CTP shows the Campus to Campus Connector along E. Main from Roberson to Lloyd as the only improvement.
- Hillsborough Road from W. Main to N. Greensboro – please consider changing the cross-section to show narrower vehicle travel lanes and protected bike lanes. This roadway is heavily travelled by bikes and pedestrians, including many children going to and from Carrboro Elementary.
  - The current highway CTP show that its current cross-section is more than adequate for the 2040 volume. In fact, the Volume over Capacity is only .3 (4,000 vehicles for a capacity of 11,600). This indicates that there is plenty of roadway here to dedicate to bicycles.
- Please consider adding an off-road multiuse path from Carrboro to Hillsborough along Old 86.
- Consider adding an off-road north-south connection from central Carrboro to Chapel Hill High School/Smith Middle School


 For Cullen Barclay  
 Transportation Advisory Board Chair

2/14/17  
 Date







# Town of Carrboro

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

## Agenda Item Abstract

**File Number:**17-043

**Agenda Date:** 2/21/2017

**File Type:**Agendas

**In Control:** Board of Aldermen

**Version:** 1

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### TITLE:

Presentation of the Parking Study Recommendations

**PURPOSE:** The purpose of this agenda item is for the Board of Aldermen to receive a presentation on the updated findings and associated recommendations as a precursor to adopting the document as a Parking Plan.

**DEPARTMENT:** Planning

**CONTACT INFORMATION:** Bergen Watterson, 919-918-7329, [bwatterson@townofcarrboro.org](mailto:bwatterson@townofcarrboro.org) <<mailto:bwatterson@townofcarrboro.org>>; Trish McGuire, 919-918-7327, [pmcguire@townofcarrboro.org](mailto:pmcguire@townofcarrboro.org) <<mailto:pmcguire@townofcarrboro.org>>; Tina Moon, 919-918-7325, [cmoon@townofcarrboro.org](mailto:cmoon@townofcarrboro.org) <<mailto:cmoon@townofcarrboro.org>>

**INFORMATION:** Since the initiation of the parking study in November 2015, the Board has received three presentations on the project. Timothy Tresohlay, with VHB Engineering, provided a report of the initial findings from the field data collection on [April 5, 2016](https://carrboro.legistar.com/LegislationDetail.aspx?ID=2680871&GUID=9551606F-2BC8-4B39-AB0B-8C8C9BB5AF9E&Options=&Search=>); <<https://carrboro.legistar.com/LegislationDetail.aspx?ID=2680871&GUID=9551606F-2BC8-4B39-AB0B-8C8C9BB5AF9E&Options=&Search=>>> Town staff provided a general update on [June 15, 2016](https://carrboro.legistar.com/LegislationDetail.aspx?ID=2763176&GUID=F1139C80-1ABE-4F08-9B11-EEB646E6BDF8&Options=&Search=>) <<https://carrboro.legistar.com/LegislationDetail.aspx?ID=2763176&GUID=F1139C80-1ABE-4F08-9B11-EEB646E6BDF8&Options=&Search=>>>; and Mr. Tresohlay provided a presentation on draft recommendations on [November 15, 2016](https://carrboro.legistar.com/LegislationDetail.aspx?ID=2882404&GUID=5872FCAD-D99B-4215-8317-1A4BD692EDCB&Options=&Search=>) <<https://carrboro.legistar.com/LegislationDetail.aspx?ID=2882404&GUID=5872FCAD-D99B-4215-8317-1A4BD692EDCB&Options=&Search=>>>. Prior to finalizing the study findings into a Parking Plan, staff wanted to provide the Board with an opportunity to review the revised report and associated recommendations for input and comment. Staff presented the findings to the Carrboro Business Alliance at its meeting on January 31, 2017. The Board may wish to refer the document to the advisory boards for input and comment as well.

The study report contains detailed data on current parking supply and demand, including occupancy rates for all parking lots in Town and length of stay and turnover rates for public lots and incorporates projections to determine future parking supply and demand based on development projects that are approved but not yet completed. Among other findings, the data analysis revealed the following:

- The existing parking is sufficient to support the current demand in the downtown, and will for at least the next ten years.
- The development and implementation of a management plan will more likely yield the desired result of

mitigating the existing parking supply, particularly during the peak hour strain for centrally located public lots.

- Examples of recommended management strategies include:
  - Facilitating a shared parking system between public and private sector,
  - Installing clear and consistent regulatory and wayfinding signage, and
  - Lighting and sidewalk improvements in study area.

The parking study report, including and outline of the process, public involvement, data collection, findings, and recommendations is provided (Attachment B).

A resolution (Attachment A) is provided that refers the materials to the advisory boards and sets a public hearing to consider adopting the Parking Plan--the study report with its finding and recommendations--for the end of April.

**FISCAL & STAFF IMPACT:** There is no fiscal impact associated with receiving this presentation.

**RECOMMENDATION:** Staff recommends that the Board of Aldermen receive the presentation, refer the document to the Advisory Boards and set a public hearing on March 28<sup>th</sup>, 2017 to consider adopting the plan.



A RESOLUTION RECEIVING A PRESENTATION ON THE PARKING STUDY AND  
SETTING A PUBLIC HEARING ON THE FINAL REPORT

WHEREAS, The Town of Carrboro entered into a contract with VHB Engineering in November 2015 to conduct a parking study of the downtown; and

WHEREAS, the report and recommendations are nearing completion.

NOW, THEREFORE BE IT RESOLVED that the Board of Aldermen, receives the presentation on the draft findings and sets a public hearing on April 25<sup>th</sup>, 2017, to consider adopting the final report of downtown parking study.

BE IT FURTHER RESOLVED that the draft report is referred to the Town of Carrboro Planning Board, Transportation Advisory Board and the Economic Sustainability Commission for consideration and recommendation prior to the specified public hearing date:

☐ Appearance Commission

☐ Recreation and Parks Commission

☒ Transportation Advisory Board

☐ Northern Transition Area Advisory  
Committee

☐ Environmental Advisory Board

☐ \_\_\_\_\_

☒ Economic Sustainability Commission

☐ \_\_\_\_\_

This is the 21<sup>st</sup> day of February in the year 2017.



# Carrboro Parking Study

## Executive Summary

Since the 1980s the Town of Carrboro has gradually acquired or leased properties to use as municipal parking lots, and currently maintains 655 parking spaces in the downtown area. The Town does not charge for the use of those spaces. Despite this investment, concerns relating to insufficient parking in the downtown have emerged, which has led the Town to reconsider its role in providing or managing parking for public uses. VHB Engineering, NC, P.C. was retained as the transportation consultant to lead the planning effort, involve stakeholders, collect existing conditions data, and identify potential strategies for parking management.

The plan vision was described by Town staff and Board of Aldermen as an inclusive process to examine the current and future states of parking in Carrboro, involving public outreach to identify potential barriers that may be preventing residents from visiting downtown more frequently.

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### Public Engagement

Public engagement items included a project website, online survey, social media outreach, two public meetings, attendance at the Farmers Market, Coffee with a Cop and Business Alliance meetings, as well as individual meetings with local business owners. The project website received more than 300 page views, and more than 600 individuals responded to the online survey. Feedback received during these public engagement activities helped to inform the planning process and shape the final plan recommendations.



## Existing Conditions

Utilizing the Town's existing parking space inventory, VHB organized and conducted a field investigation to verify total spaces and collect utilization throughout the day. Private parking accounted for four out of every five total parking total spaces, public parking accounted for the remaining 16%. Public parking includes 380 spaces that are leased by the Town within four (4) lots and a portion of one (1) parking deck. The Town of Carrboro owns 275 spaces within four (4) parking lots, which accounts for 7% of total parking spaces.

## Parking Spaces by Ownership

Parking Type	Spaces	% of Total
Public-owned	275	7%
Public-leased	380	9%
Private	3,293	84%
<b>Total</b>	<b>4,003</b>	

The total number of parked cars were observed at four (4) periods between 9 AM and 9 PM on a typical Thursday in January of 2016. This process was repeated on a typical Thursday in April, as well as a Saturday in April. These counts included all public and private parking areas to determine the maximum parking demand. The January counts observed a peak of 2,029 parked cars during the 11-1 PM lunchtime period. The April counts observed a peak of 2,122 parked cars during the same 11-1 PM lunchtime period, an increase of 5%. During this peak period, private lots were found to be 53% occupied and the public lots were found to be 52% occupied. For reference, the desired parking occupancy rate is between 80-90%, and most of parking lots were well below this target. Parking lots over 90% occupied will contribute to unnecessary traffic circulation as drivers seek those hard-to-find remaining empty spaces.

## Observed Parked Vehicles by Time of Day

Count Periods	CARS			OCCUPANCY		
	January	April	Saturday	January	April	Saturday
<b>9 AM to 11 AM</b>	1,858	1,942	1,493	49%	49%	37%
<b>11 AM to 1 PM</b>	2,029	2,122	1,475	51%	53%	37%
<b>2 PM to 5 PM</b>	1,699	1,879	1,487	42%	47%	37%
<b>6 PM to 9 PM</b>	1,426	1,758	1,561	36%	44%	39%

Note: Parking counts include public and private lots (4,003 spaces in total).

The shaded cell represents the maximum number of parked cars, for each period, between all three data collections.



Survey respondents and meeting attendees remarked that the most challenging time of day to find parking within a public parking lot was during the evening (6-9 PM) period, not during lunchtime. Parking counts supported this perspective, as 466 vehicles we observed parking within public lots during the evening period. During this same period, private parking lots were found to be only 39% occupied, suggesting that downtown visitors seek public parking rather than private lots after 6 PM.

#### Comparison of Parked Vehicles within Public Lots Only (January – April)

Count Periods	CARS			OCCUPANCY		
	January	April	Saturday	January	April	Saturday
9 AM to 11 AM	304	354	361	46%	54%	55%
11 AM to 1 PM	356	368	285	54%	56%	44%
2 PM to 5 PM	339	312	240	52%	48%	37%
6 PM to 9 PM	331	466	457	51%	71%	70%

Note: Parking counts include only public lots (655 spaces in total).

The shaded cell represents the peak period (466 cars for 655 public spaces is 71% occupancy).

Parking occupancy is not evenly distributed among the varying parking lot sizes and locations. The pattern of parking lot occupancy is displayed and discussed further in the Existing Conditions section. In general terms, the high demand areas during the morning period were near O2 Fitness and Rise Biscuit and Donuts. Demand shifted to the restaurant-dense areas within the central portion of downtown Carrboro during the 11-1 PM period. In the mid-afternoon demand becomes more balanced. After 6 PM, demand shifts back to the central public and private parking lots that are close to dinner restaurants.

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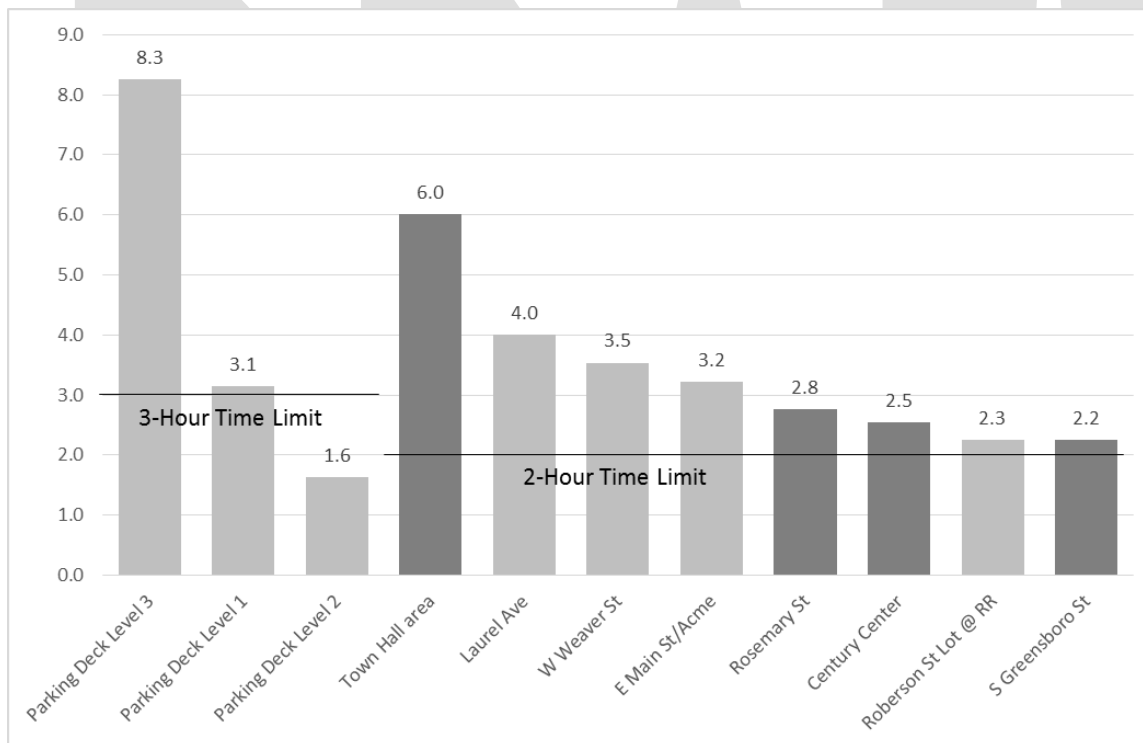
#### Length of Stay

Data collection also included a length of stay analysis for public parking lots. Vehicle license plates were observed for all nine (9) public parking lots, every hour between the hours of 8 AM and 6 PM. More than 800 unique license plates were collected over a 10-hour period parking within public parking spaces. A majority of vehicles (557 cars, representing 69%) were observed on three (3) or fewer occasions, suggesting that they remained parked for 3-hours or less. A minority of vehicles (151 cars, representing 19%) were observed on seven (7) or more occasions, suggesting that they remained parked in the same spot for most of the day and were likely downtown employees. It is assumed, based on their locations that approximately 50-60 of these vehicles were Town of Carrboro employees, and the remaining 90-95 vehicles were owned by other downtown employees, and seven (7) may have been UNC students parking in the Rosemary Street lot.

These 151 cars represent a small number of total vehicles, however, they occupied public parking spaces for a large portion of the day. Factoring in the 10-hour period of data collection, these 151 cars observed on seven (7) or more occasions accounted for 48% of the total occupied time throughout the day, effectively rendering one-fifth of public parking spaces unavailable to visitors or customers.

An average length of stay was calculated for each parking lot. The public parking lots with the shortest average length of stay (in hours) were found to be the S Greensboro St lot (2.2), Roberson St lot (2.3), and Century Center lot (2.5), all three of which are centrally-located. The Rosemary Street lot is the next lowest (2.8), which is located at the very east end of Carrboro along Rosemary Street. These lots are considered to be more heavily used for short-term visitor parking.

### Average Length of Stay (Hours) for Public Parking Lots



Note: Dark shaded bars represent Town-owned parking lots; Light shaded bars represent leased parking lots.

Public parking lots with the longest average length of stay were found to be the 3<sup>rd</sup> level of the Hampton Inn parking garage (8.3 hours), Town Hall area (6.0), Laurel Ave (4.0) and Weaver Street lot (3.5). These lots are considered to be more heavily used for long-term employee parking, and they are located further from the center of downtown Carrboro than the lots with shorter average length of stay.



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## Future Conditions

Future parking needs were also examined by constructing a parking demand model to forecast future parking demand. The Town identified ten development projects that are either under construction or anticipated in the next five (5) years, including hotel, residential, retail, civic and mixed use developments. The parking demand model includes assumptions based on input from Town of Carrboro staff and professional judgment, which are described in more detail within the Future Conditions section. **This quantitative analysis does not support the need for the Town to construct or least additional public parking spaces in the next five to ten years.**

### Existing Surplus

In general terms, this parking analysis revealed that the current combined public and private parking available in downtown Carrboro can effectively support 3,400 parked cars on a typical day. This study observed a maximum of 2,122 parked cars during field data collection, which represents the actual parking demand. **The calculated existing parking surplus for downtown Carrboro on a typical weekday is 1,281 spaces.** Public parking lots account for a surplus of 236 spaces, while private lots have more than four-times as many. These are surplus spaces for a typical weekday, though they are often filled during special events. Refer to the Future Conditions section of this report for a further discussion and display of surplus parking.

### Future Surplus

VHB constructed a parking demand model to estimate the number of parking spaces needed to meet the expected demand for future development projects that are either under construction or anticipated. By 2021 downtown Carrboro may support more than 3,942 parked cars in its public and private lots. VHB estimates the future parking demand to be +900 new spaces. Adding the actual demand from 2016 counts to the new parking demand yields a total future parking demand of 3,021 cars. This leaves an **estimated future surplus of 921 empty spaces**, within a range of +/- 140 throughout the day. Public parking lots will account for a small portion of the surplus parking, while private lots have five-times as many surplus spaces. Refer to the Future Conditions section of this report for a further breakdown of future surplus parking.

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## Management Strategies

The Town controls a small percentage (18%) of total parking. There is a surplus of parking during the busiest time of the busiest day of a typical weekday for both public and private parking lots. The data collected does not support the need for the Town to provide additional parking spaces today.



or in the next 5-10 years. Rather than construct new parking lots or structured parking, **the Town may wish to more effectively manage its existing supply of 655 parking spaces.** There are many strategies for actively managing parking to achieve better balance of supply and demand. Strategies have been organized into five (5) categories, Education, Encouragement, Enforcement, Evaluation, and Engineering.

A full discussion of potential strategies is included in the Management Strategies section. In the near term the Town of Carrboro should focus on the five (5) potential strategies identified below that are expected to have the most significant impact:

1. Education – Wayfinding and regulatory signage improvements
2. Encouragement – Lighting and sidewalk improvements
3. Enforcement – Time limited parking options
4. Evaluation – Shared parking arrangements between businesses
5. Evaluation – Annual data collection program to count parked vehicles

The intended goal of improving wayfinding and signage is to increase visibility and consistency of all nine (9) public parking lots. Several stakeholders commented that they were unaware of several of these smaller public parking lots.

Lighting and sidewalk improvements are intended to encourage visitors to park once and walk to their destination, a stated goal of the business owners that were involved in this project.

Enforcement strategies are intended to improve parking flexibility by providing a limited number of high turnover spaces in the high demand areas (30-min parking) and long term spaces in lower demand areas (4-hour parking).

Shared parking arrangements are intended to balance the use of the majority of parking (private spaces) within downtown by facilitating agreements between property owners.

Annual data collection may be the most important strategy because data should be used to validate the diverse opinions related to parking, and separate fact from speculation.



# Introduction

The Town of Carrboro is located in southern Orange County (NC), and supports a population of 20,984 (US Census 2014 estimate). As the westernmost point in the Triangle region of North Carolina, Carrboro shares a border with the Town of Chapel Hill, and attracts visitors from all over the region for its unique culinary, musical, and cultural events.

Since the 1980s the Town of Carrboro has gradually acquired or leased properties to use as municipal parking lots, and currently maintains approximately 650 parking spaces in the downtown area. The Town does not charge for the use of those spaces. Despite this investment, concerns relating to insufficient parking in the downtown have emerged, particularly as larger-scale development projects have been completed. This has led the Town to reconsider its role in providing or managing parking for public uses. VHB Engineering, NC, P.C. was retained in the fall of 2015 to serve as the transportation consultant to lead the planning effort, involve stakeholders, collect existing conditions data, and identify potential strategies for parking management.

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## Plan Vision

The plan vision explains its purpose and guides the analysis of data and recommendations. Town staff and members of the Board of Aldermen describe the plan vision as an inclusive process to examine the current and future states of parking in Carrboro, including public outreach, to gather public perceptions, to identify potential barriers that may be preventing residents from visiting downtown more frequently, and a strategy for managing parking in the future.

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## Plan Objectives

Plan objectives are measurable outputs that support the overall plan vision. The first measurable output involves a full documentation of the existing parking conditions. These data are supplemented by an online survey of residents to identify parking behaviors and perspectives relating to parking. With these quantifiable resources collected, preliminary findings were presented to the public and obtained feedback during the early stages of the project. Incorporating citizen feedback and more refined existing conditions data, business owners were contacted to discuss





concerns and potential parking management strategies for the short-term and long-term growth of the Town.

DRAFT



# Public Involvement

The public involvement phase of the project took place between February and August 2016, and included the following items or events.

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## Public Engagement

Public engagement items were incorporated into this planning process to communicate the purpose of the project and allow citizens to describe their unique parking experiences.

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### Project website

The project website ([parkcarrboro.org](http://parkcarrboro.org)) launched in early February 2016 to outline study objectives and inform the public of upcoming events. The website contained helpful links to social media and the parking survey, as well as public meeting presentation slides and videos for those who were unable to attend the public meetings. The project website received more than 300 page views.

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### Social Media

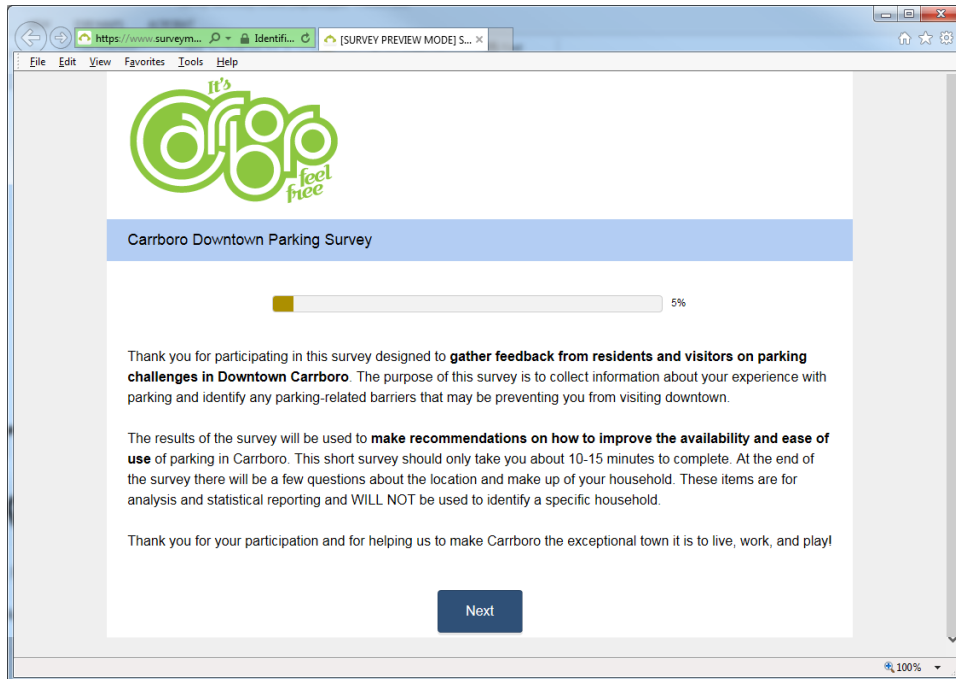
In addition to traditional public outreach, social media outlets were employed to share upcoming events and gather feedback from the public. Using the Town of Carrboro's Facebook page, as well as the hashtag #ParkCarrboro, members of the public were given a forum to express their comments and concerns regarding the current parking system in Carrboro. Several tweets were sent marking the public parking lots that were found to be full (or nearly full), including a time of day reference.

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### Online Survey

An online survey for Carrboro residents, stakeholders and visitors was developed using Survey Monkey. The Carrboro parking survey launched on February 4<sup>th</sup>, one (1) week before the first public meeting. The survey contained a variety of questions to assess the availability and potential barriers to parking in downtown Carrboro. A total of 602 respondents completed the survey over the six (6) month period, which closed in late August.

Respondents were asked to provide the intersection of the two streets nearest their home location, rather than their home address. This information was requested for the purpose of determining the distribution of responses from Carrboro residents who live more than one-half mile from downtown. These residents are less likely, or unable, to walk or ride a bicycle to visit downtown.



Survey screenshot of online survey instrument

A full summary of the survey results is included in the Appendix section. A brief overview of the survey results suggest the following:

- Over half of all respondents indicated they visited downtown for leisure, with 84% citing shopping and dining as primary reasons.
  - 38% indicated they visited for work-related purposes.
- While 23% of respondents bicycled or walked to downtown, driving (74%) was the largest transportation mode category.
- Most surveyed parked in a public lot (69%) the last time they visited downtown Carrboro.
- 46% of survey respondents indicated that Chapel Hill Transit or Go Triangle was a viable option for reaching downtown, but only 16% of respondents said they used it regularly to visit downtown.
- 17% of respondents indicated that the perception of parking availability negatively affected their plan to visit downtown.
  - 30% indicated that the perceived lack of parking is a barrier for them to visit downtown.



- 64% expressed a negative view of a pay for parking scheme as a potential future option.

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## Public Events

Public events were designed to engage the general public in the planning process, allow them to speak directly with the project team, and provide feedback on the existing conditions data (described in more detail within the Existing Conditions section of this report).

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## Public Meetings

Two public meetings were held to present preliminary findings, promote feedback, and understand the parking concerns of residents and business owners.

The first public meeting attracted 30 attendees and was held on Thursday, February 11<sup>th</sup> at Carrboro Elementary School. Attendees signed in and had the opportunity to identify perceived parking constraints, both spatially on a map of downtown and qualitatively through written comments on poster board displays and comment sheets. VHB presented its preliminary findings from the January parking occupancy counts. Public comments included the need for long-term employee parking to free up the short-term public parking spaces, additional crosswalks along W Main Street, wider sidewalks, ADA improvements along sidewalks and public parking lots (gravel), as well as the need for a wayfinding map of all available public parking lots. Public opinions relating to free public parking versus paid public parking was divided among attendees and represented both ends of the spectrum.

The second public meeting attracted thirteen attendees, and was held on Thursday, June 16<sup>th</sup> at Town Hall. VHB presented additional data findings from April parking occupancy counts collected on a typical Thursday and a Saturday to compare and contrast the different parking trends throughout the day. Public comments from this meeting included the need to establish a “park once and walk downtown,” as well as an acceptance to charge a fee for public parking where appropriate. Several attendees mentioned that they do not experience difficulty finding a parking space, and that parking shortage is only a perception. One property owner suggested that their most common parking challenge involves tenant businesses asking to arrange long-term employee parking in an off-site location (public lot).



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### **Farmers' Market Attendance**

VHB attended the Saturday April 30<sup>th</sup>, 2016 Farmers' Market to promote the online survey among market customers and generate feedback on the pattern of existing parking utilization. Many customers were interested in discussing parking, and all were provided with a card containing a link to the online survey link.

VHB observed that many Farmers' Market customers drove and waited in a relatively long line of cars to enter the Town Hall parking lot in the hopes of potentially finding an open parking space. Some were successful, while others were forced to seek other parking options nearby. Many sought on-street parking along Elm Street or the adjacent gas station as a result.

Public comments included the identification of sidewalk gaps along several streets including (a) W Main Street between Poplar Ave and Fidelity St, (b) Laurel Ave south of Town Hall, (c) Bim Street behind Town Hall, and (d) S Greensboro Street south of Carr Ave extending all the way to the NC-54 interchange. Customers expressed the significance of these sidewalk gaps as a barrier to walking to downtown from their homes.

Customers also noted the desire for a Farmers' Market park-&-ride option for the Chapel Hill Transit service that operates on Saturdays (CW route).

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### **Coffee with a Cop Attendance**

On Friday May 13<sup>th</sup>, 2016 VHB attended a Carrboro Coffee with a Cop event at Johnny's Gone Fishing Coffee Shop on West Main Street. More than 20 Carrboro residents attended the event, and VHB discussed the purpose of the parking study and asked for their participation in the online survey.

Attendee comments included discussions of the Carr Mill Mall parking lots, and the large (gated) employee parking lot on Roberson Street that is owned by the Carr Mill Mall. Wayfinding signage to identify public parking within the 300. E Main Street parking deck and S Greensboro Street lot was also discussed as a relatively simple improvement to raise awareness of public parking facilities.

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### **Stakeholder Events**

The following outreach events were designed to engage downtown stakeholders from both the public and private sector. These events were not open to the general public.



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### **Walkability Micro-Audit**

VHB coordinated a walkability micro-audit on Wednesday, April 13, 2016. The purpose of this task was to perform a high-level assessment of potential challenges associated with walking to/from public parking areas toward popular destinations along Main Street in Carrboro. A secondary purpose of this task was to develop a repeatable process and series of evaluation criteria that could be performed for other public parking lots in the future.

This event was limited to eight (8) participants due to potential safety concerns while observing, photographing, and note-taking along roadways. The group of eight (8) individuals were chosen to represent various perspectives, including Town staff from Public Works, Police Department, Recreation and Parks, Planning, and a downtown property owner with on-site parking.

Two starting points were selected (S Greensboro Street lot and Hampton Inn parking garage), and the group walked along existing sidewalks and roadway shoulders, scoring elements of walkability such as sidewalk presence and condition, intersection crossing type, wayfinding signage, and bicycle parking facilities. Scores for each category were summarized and compared between the two routes.

A full summary of the walkability micro-audit is included in the Appendix section.

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### **Business Alliance Meeting**

VHB staff attended a regularly scheduled Carrboro Business Alliance meeting on Thursday May 26<sup>th</sup>, 2016, to discuss the project timeline and promote feedback from business owners. The project website and online survey were provided and participants were asked to help spread the word to employees and customers. VHB staff proposed a list of general parking questions for follow up discussions with business owners who wanted to share their parking insight and perspectives.

Business owner comments and questions included whether downtown employees were a significant generator of parking demand (and visitors represented a smaller portion), whether the project will include a discussion of the leased parking lots that the Town pays for on an annual basis, and whether recent parking occupancy from the Town of Chapel Hill will be included in this project.

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### **Business Stakeholder Meetings**

VHB staff attended two (2) meetings with local business owners in August 2016. The purpose of these meetings was to directly involve business owners in the planning process, to discuss their parking needs, and present some potential future strategies for balancing growth and parking. These



meetings were in addition to the two public meetings and the one Business Alliance meeting that also included local business owners.

The discussion centered on the importance of shared parking between adjacent businesses, long-term employee parking options, reserving customer parking during the daytime (8-5 PM), the significance of “walk-by customers”, and competition with suburban shopping centers.

Business owners agreed that the most proximate parking in front of their business should be prioritized for customers during the daytime. Therefore, employees should seek either (a) satellite parking within a private lot, or (b) long-term parking within the public parking lots (2-hour time limited). Issues of personal security for employees walking back to their vehicles was discussed as a recommendation for the Town or NCDOT to improve lighting, streetscape, and sidewalks. These enhancements would improve the perception of safety as well as encourage customers to park once and walk, which reinforces the “walk-by customers.”

Growth of downtown businesses is a desired goal for all stakeholders. This growth can be in the form of an existing business expanding upward or outward, or a new business occupying a currently vacant space. Business owners are looking to the Town to provide the additional (flexible) public parking that is perceived as necessary for this growth, reducing the parking requirement for additional square footage. The Town’s perspective has been data-driven, to allow the existing pattern of parking use (supply and demand) inform this discussion before determining the Town’s role in parking management. All sides are invested in the success and growth of downtown businesses, regardless of the parking management strategies that have been presented and discussed.

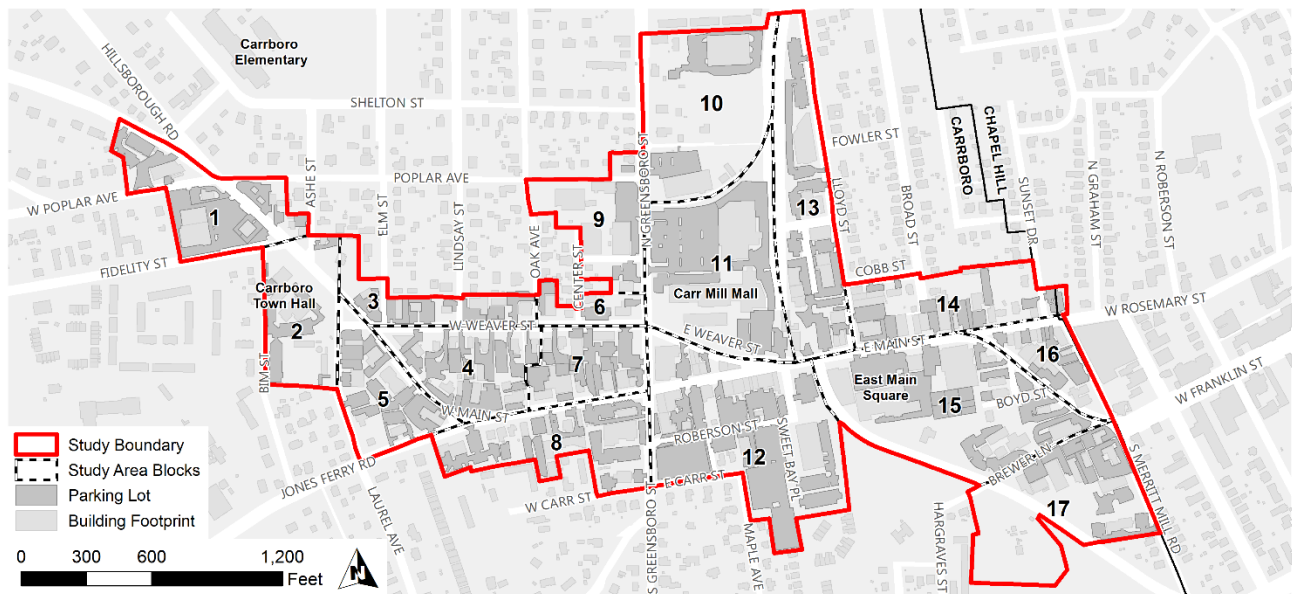
# Existing Conditions

## Existing Parking Supply and Utilization

Utilizing the Town's existing parking space inventory, which was delivered in ArcGIS format, VHB organized and conducted a field investigation to verify total spaces and collect utilization throughout the day in advance of the first public meeting in February of 2016.

The project study area was defined by Town staff (Figure 1), and includes properties within the B-1 (C), B-1 (G), B2, B3, and CT zones according to the Town Zoning Map. The study area was divided into 17 blocks for the purposes of summarizing and reporting data. Parking occupancy was collected for each individual lot, both public and private. These data will be reported by individual lots, groups of lots by different categories, and at the block-level.

**Figure 1: Study Area**





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## Determination of busiest day of the week

To determine the busiest day of a typical work week, VHB installed video equipment at the entrance/exit locations of the Rosemary Street Lot and S Greensboro Street Lots. Vehicle entries and exits were recorded and summarized per hour across a three-day collection period in November (17-19) 2015. The results suggest that Tuesday's peak number of parked vehicles is 15% lower than Wednesday or Thursday, which were effectively equal. Thursday was selected to collect the full parking utilization counts.

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## Parking Occupancy - January 2016

For the purposes of this report "Public" refers to parking that is either owned or leased by the Town of Carrboro for use by Town staff, visitors, and the general public. "Private" refers to parking that is owned and managed by local businesses for their use to accommodate employees or customers.

A total of 4,003 parking spaces were observed within the downtown study area. Private parking accounted for four (4) out of every five (5) spaces (82%), while public parking accounted for the remaining 18% (Table 1).

**Table 1: Parking Spaces by Type**

Parking Type	Spaces	% of Total
Public	655	16%
Private	3,348	84%
<b>Total</b>	<b>4,003</b>	

Note: Public includes spaces owned by the Town and leased from private land owners.

Parking occupancy data was collected on Thursday, January 14<sup>th</sup>, 2016. Orange County public schools were in session, as well as UNC-Chapel Hill spring semester classes. A total of four (4) parking counts were conducted, 9-11 AM, 11 AM-1 PM, 2-5 PM, and 6-9 PM, for all public and private parking areas. The team observed the maximum number of parked vehicles during the 11 AM-1 PM lunchtime period, identifying 2,029 cars for 4,003 spaces (51% occupied). A lunchtime peak is common because the greatest number of employees, customers, and visitors are working, heading to lunch, or running errands during this time.

It is worth noting that during the busiest period of the day, the combined parking occupancy reached 51%. This means that in aggregate, half of all parking was empty during the peak January count period. Private lots were found to be 51% occupied, and the Public lots were found to be 50% occupied. For reference, the targeted parking occupancy for each lot should be between 85% and



90%, or roughly one (1) empty space for every seven (7) to ten parking spaces. This targeted occupancy will ensure that vehicles are not unnecessarily “circling the block” or congesting parking lot aisles in search of that last empty parking space.

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### **Town owned and Town leased Parking**

Public parking includes lots that are (a) owned by the Town as well as lots that are (b) leased from private land owners and made available for the public. The Town owns four (4) public parking lots, as well as some miscellaneous parking at the Fire Department and Police Station. The latter are not open to the public. The four (4) public-owned parking lots are: Town Hall lot, Century Center lot, S Greensboro St lot (including adjacent on-street spaces), and the Rosemary St lot.

The Town leases parking within an additional five (5) lots that are distributed across the study area (Figure 2), and listed below from west to east:

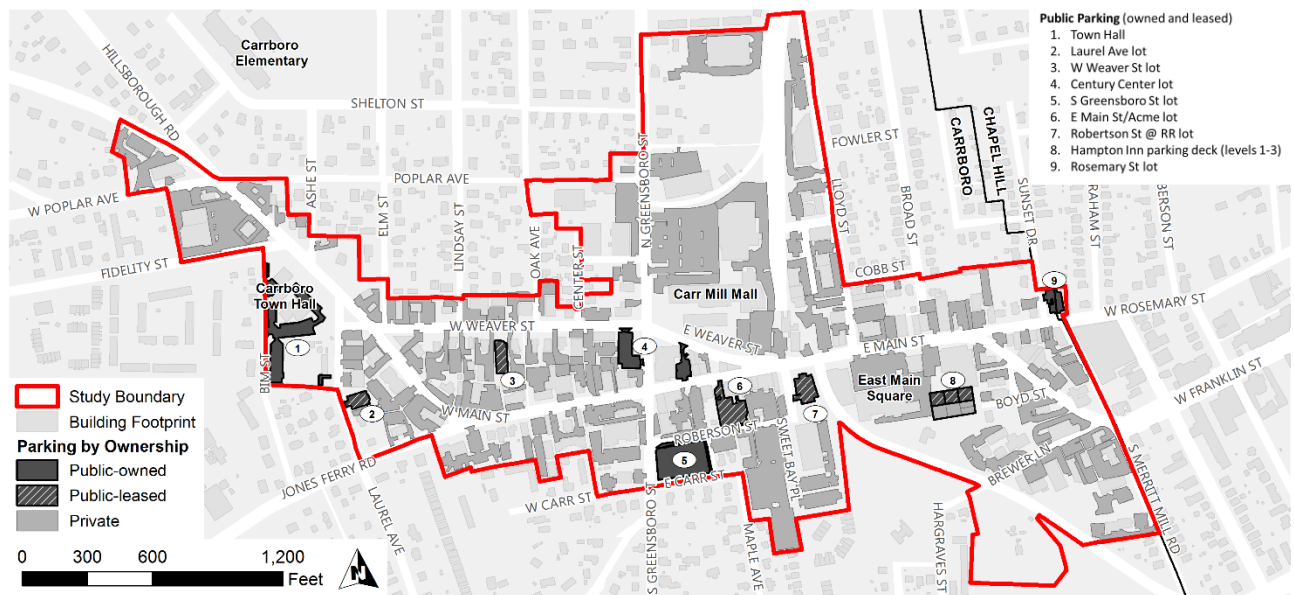
- Laurel Ave lot
- W Weaver St lot
- E Main St/Acme lots (combined into one)
- Roberson St lot @ railroad tracks
- East Main Square (Hampton Inn hotel) parking deck levels 1-3

Leased parking accounts for a large percentage (58%) of the 655 total public parking spaces (Table 2). A majority of this leased parking is within the East Main Square (300 E. Main) parking deck (250 spaces).

**Table 2: Parking Spaces by Ownership**

<b>Parking Type</b>	<b>Spaces</b>	<b>% of Total</b>
<b>Public-owned</b>	275	7%
<b>Public-leased</b>	380	9%
<b>Private</b>	3,348	84%
<b>Total</b>	<b>4,003</b>	

**Figure 2: Parking Lots by Ownership Type**

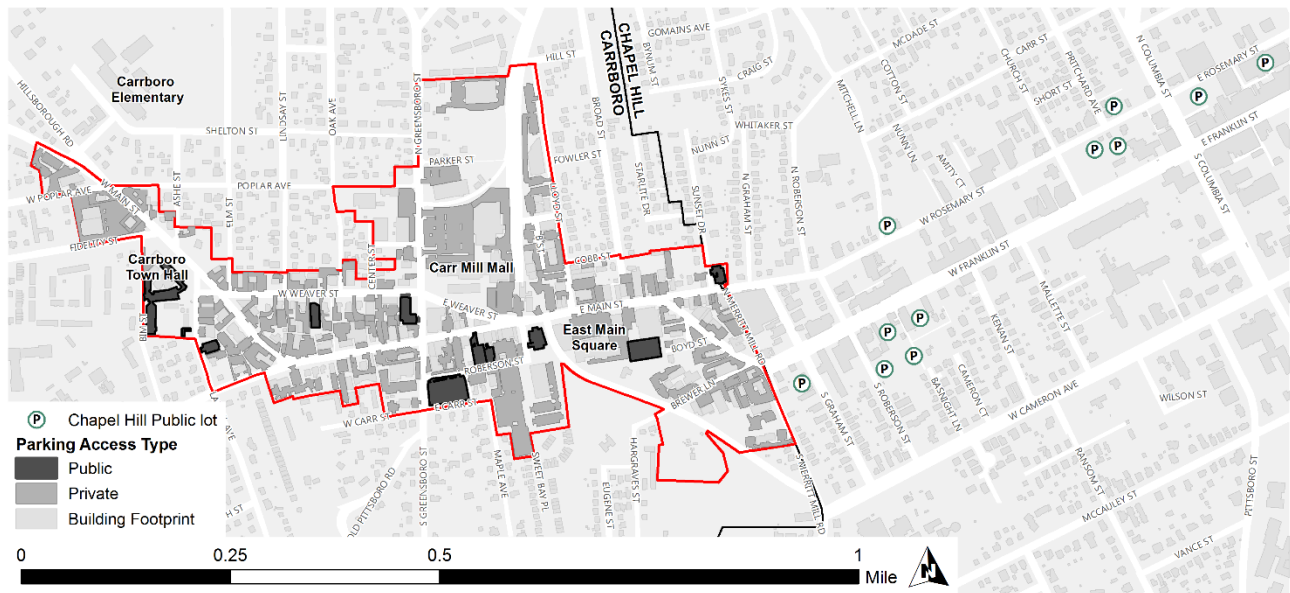


### Town of Chapel Hill Parking Data

A similar parking occupancy study was conducted in the neighboring town of Chapel Hill during the same time period. The Chapel Hill parking study is not related to this parking study. However, the data collected by the Town of Chapel Hill was shared with VHB and the Town of Carrboro, and is summarized below for context.

The Town of Chapel Hill collected parking occupancy data for 11 of their public parking lots along Rosemary Street and Franklin Streets in January of 2016. Six (6) of these lots, representing 323 spaces, are located within a quarter-mile of the town boundary between Chapel Hill and Carrboro (Figure 3). The remaining five (5) public lots are more than a half-mile from Carrboro.

**Figure 3: Town of Chapel Hill Public Parking Lots**



The Town of Chapel Hill counted cars at five (5) periods throughout the day. That study observed the highest total occupancy (651 parked cars, 70% occupancy) during the 11:30 – 2 PM period, the same lunchtime peak as the Town of Carrboro occupancy counts. Parking occupancy dropped during the afternoon to 46% and 42%, but rebounded to 60% occupancy during the 6-8 PM period. It is important to note that the Town of Chapel Hill charges a fee of \$1-\$1.50 per hour, typically between 8 AM and 8 PM.

VHB further investigated the six (6) Town of Chapel Hill parking lots that are nearest to Carrboro. The closest parking lot (S Graham St lot) is reserved for employees during the day, and becomes an hourly pay lot between 6-8 PM. After 8 PM, this lot is free to the public and a total of six (6) cars were observed parking there. The second-closest parking lot (Mitchell Ln lot) is adjacent to the Hargraves Community Center. A total of four (4) cars were observed parking there.

The remaining Chapel Hill lots that are nearest Carrboro are located along W. Franklin Street near several restaurants. The data display a traditional lunchtime and dinnertime peak period of use. These data do not suggest that the proximity to Carrboro is influencing the pattern of parking for these Town of Chapel Hill parking lots. Therefore, no further examination was needed.

## Parking Occupancy – April 2016

VHB collected parking occupancy data on Thursday, April 21<sup>st</sup>, 2016, to confirm the trends observed during the initial counts in January. The same four (4) collection periods were used to directly



compare the total number of cars and occupancy percentages between these two sets. The overall peak period for parking remained during the lunchtime 11-1 PM period, with a maximum number of parked vehicles reaching 2,122 cars for 4,003 spaces (53% occupied).

The greatest number of parked cars were observed during the April occupancy counts, and the difference varied depending upon the time of day. For example, 84 additional cars were observed during the 9-11 AM period, representing a 5% increase. The same 5% increase was observed during the lunchtime peak. A much larger increase was observed during the afternoon and evening (Table 3). To put another way, vehicles left earlier in the afternoon during the January counts, however, remained longer in the afternoon and evening during the April counts. These data suggest that an additional 5% of parked cars can be expected for the spring months. However, this increase may become more significant in the afternoon and evening, when additional outdoor dining and other activities are possible due to warmer weather.

**Table 3: Comparison of Parked Vehicles (January – April)**

Count Periods	January	April	Increase	% Increase
9 AM to 11 AM	1,858	1,942	+84	5%
11 AM to 1 PM	2,029	2,122	+93	5%
2 PM to 5 PM	1,699	1,879	+180	11%
6 PM to 9 PM	1,426	1,758	+332	23%

Note: Parking counts include public and private lots (4,003 spaces in total)

The shaded cell represents the peak period (2,122 cars for 4,003 spaces is 53% occupancy)

### **Public Parking Occupancy**

Meeting attendees remarked that the total number of parked cars may peak during the lunchtime period, but the most challenging time of day to find parking within a public parking lot was during the evening (6-9 PM) period. This was expressed during the initial project kickoff meeting, during the Farmers' Market and Coffee with a Cop events. VHB removed the private parking lot data from the analysis to evaluate this feedback. Table 4 below reports the same comparison of parking occupancy for only the 655 public parking lots. Note the April peak period was observed during the evening, not the lunchtime.

**Table 4: Comparison of Parked Vehicles within Public Lots Only (January – April)**

Count Periods	January	% Occu	April	% Occu	Increase	% Increase
9 AM to 11 AM	304	46%	354	54%	+50	16%
11 AM to 1 PM	356	54%	368	56%	+12	3%
2 PM to 5 PM	339	52%	312	48%	-27	-8%
6 PM to 9 PM	331	51%	466	71%	+135	41%

Note: Parking counts include only public lots (655 spaces in total)

The shaded cell represents the peak period (466 cars for 655 public spaces is 71% occupancy)

The reduction of parked cars during the 2-5 PM period, from 339 to 312 in April, represents a data anomaly. The total number of parked cars during this time increased, however a large number of them were parked in private parking lots (+207) as compared with public lots (-27). The net effect is an overall increase of 180 cars in April compared to January's counts.

The significant difference between January and April counts is during the 6-9 PM period, where an increase of +135 additional vehicles were observed (41% increase) over the January count period. The 466 parked vehicles within the 655 public parking spaces represents a 71% occupancy rate, which is higher than the lunchtime period for public lots and total parking lots. Nevertheless, there are still empty spaces available. This summary confirms the stakeholder feedback that the most challenging time of day to find parking within a public parking lot is during the evening (6-9 PM) period. Again, this 40% increase is likely due to the influence of weather, drawing more people and their cars to downtown in April, as opposed to January.

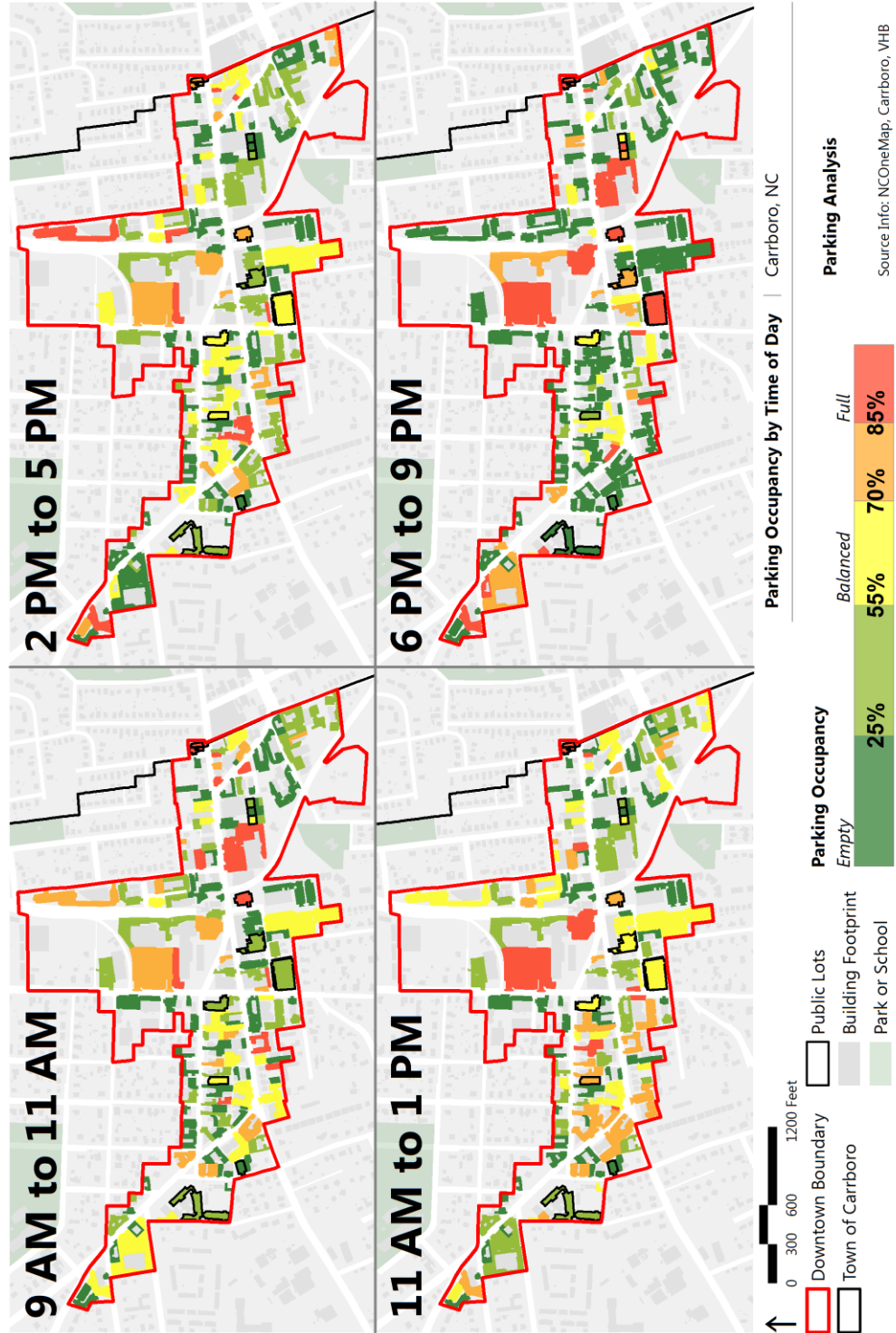
### Parking Occupancy Pattern

Parking occupancy is not evenly distributed among the varying parking lot sizes and locations. Figure 4 displays the pattern of individual parking lots based on their percent occupied (cars divided by total spaces). Dark and light green lots are considered very low parking occupancy (below 55%). Yellow parking lots are more appropriately balanced (56-70%). Orange lots are approaching the optimal capacity (71-85%), and red parking lots are considered at capacity (> 85%).

The pattern in the morning period (9-11 AM) displays many yellow lots with some orange and red lots. During the lunchtime period, this parking demand pattern shifted to mostly yellow and orange lots, particularly clustered in the center of the study area. During the afternoon period (2-5 PM), fewer lots were found to be yellow, with noticeably more light green lots along Main and Rosemary Streets. The evening period (6-9 PM) is polarized between dark green (low occupancy) lots that were effectively empty and many red or orange lots, particularly in the center of town, that were effectively full (Figure 4).



Figure 4: Comparison of Peak Period Occupancy by Lot (April 2016)



## Saturday Occupancy – April 30, 2016

VHB also performed parking occupancy counts on Saturday, April 30<sup>th</sup>, 2016 to compare the pattern to a typical weekday. The total number of parked cars is lowest on Saturday for the morning, lunchtime and afternoon periods (Table 5). Total parking occupancy on Saturday was between 37-39%, meaning that more parking spaces were empty than occupied. Businesses that are either (a) not open on weekends, such as offices or banks, or (b) open later in the afternoon or evening, such as bars/clubs or dinner-only restaurants, could be one significant explanation for this pattern.

**Table 5: Observed Parked Vehicles by Time of Day**

Count Periods	Thursday January	Thursday April	Saturday April
9 AM to 11 AM	1,858	1,942	1,493
11 AM to 1 PM	2,029	2,122	1,475
2 PM to 5 PM	1,699	1,879	1,487
6 PM to 9 PM	1,426	1,758	1,561

Note: Parking counts include public and private lots (4,003 spaces in total)

The shaded cell represents the maximum number of parked cars, for each period, between all three data collections

### Public Parking Occupancy (Saturday)

Saturday parking occupancy for public lots only is different than the total parking occupancy trend. If all private lots are excluded from the analysis, then the number of vehicles parking in public lots peaks during the evening 6-9 PM period, similar to the typical weekday trend in April. Table 6 below indicates that the Saturday trend is relatively high in the morning during the Farmers' Market, drops during the lunch and afternoon period, and then increases during the evening period nearly to the level of a typical weekday (457 cars for 655 spaces is 70% occupancy).

Empty parking spaces after 6 PM on a Saturday may be found on level 3 of the parking deck (43 empty spaces; 46% occupied), Town Hall (85 empty spaces; 13% occupied), or the W Weaver Street lot (29 empty spaces; 15% occupied). The remaining public lots contained a total of 30 empty spaces, some of which may have been reserved (signed) for ADA, or inaccessible due to diagonal parking.





**Table 6: Observed Parked Vehicles within Public Lots by Time of Day**

Count Periods	January	April	Saturday
9 AM to 11 AM	304	354	361
11 AM to 1 PM	356	368	285
2 PM to 5 PM	339	312	240
6 PM to 9 PM	331	466	457

Note: Parking counts include only public lots (655 spaces in total)

The shaded cell represents the peak period (evening period for April and Saturday)

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## Length of Stay Analysis

The length of time that a typical vehicle is parked within a public parking space is an important topic for this parking study to assess. The Town has a 2-hour time limit for most public parking lots between the hours of 7 AM and 5:30 PM Monday through Friday. The parking deck is an exception, which has a 3-hour time limit for public parking on levels 1-3. Town Hall is the other exception, which does not allow overnight parking (3-5 AM).

VHB performed a separate field data collection effort on Thursday January 14<sup>th</sup>, 2016 to observe and document the vehicle license plates for all nine (9) public parking lots, every hour between the hours of 8 AM and 6 PM. The result is a database containing 813 unique license plates collected over a 10-hour period.

A majority of vehicles (557 cars, representing 69%) were observed on three (3) or fewer occasions, suggesting that they remained parked for 3-hours or less. A minority of vehicles (151 cars, representing 19%) were observed on seven (7) or more occasions, suggesting that they remained parked in the same spot for most of the day and were likely downtown employees. (Table 7). It is assumed, based on their locations that approximately 50-60 of these vehicles were Town of Carrboro employees, and the remaining 90-95 vehicles were owned by other downtown employees, and seven (7) may have been UNC students parking in the Rosemary Street lot.

**Table 7: Number of Unique License Plates Observed within Public Parking Lots by Frequency**

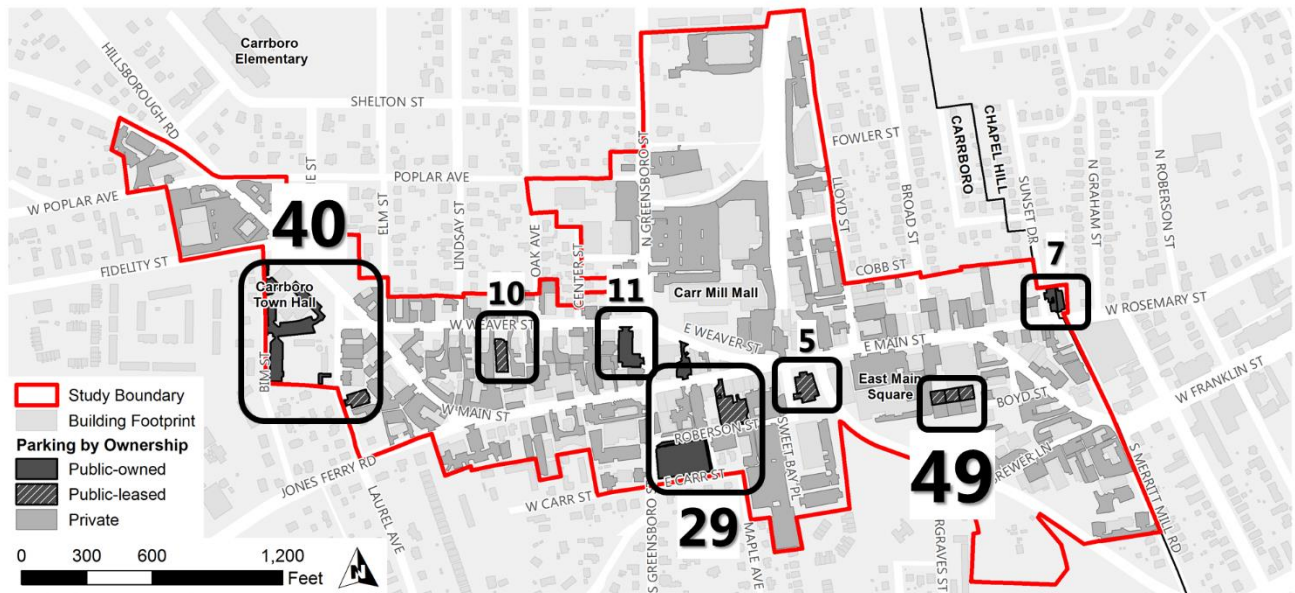
Frequency Observed	Unique Plates	%	%
10	32	4%	19%
9	41	5%	
8	42	5%	
7	36	4%	
6	30	4%	13%
5	27	3%	
4	48	6%	
3	81	10%	69%
2	143	18%	
1	333	41%	
<b>Total</b>	<b>813</b>		

Note: License plates were observed every hour for 10 hours within public parking lots only.

The shaded cell represents 151 vehicles that were observed on seven (7) or more occasions.

Meeting attendees and local business owners suggested that the percentage of vehicles observed parking more than seven (7) hours should be much larger than 19%. This is a widely shared perspective that has been conveyed on multiple occasions. Their suspicion is correct if you consider the effect of total occupied time during the day. The 32 vehicles observed on 10 occasions accounted for 320 occupied hours of time. The 41 vehicles observed on 9 occasions accounted for 369 occupied hours of time, and so on. If we consider that more than 2,646 occupied hours of time were observed during the 10-hour period, then the minority of cars observed on seven (7) or more occasions actually accounted for 48% of the total occupied time throughout the day. For comparison the 69% of vehicles observed on three (3) or fewer occasions accounted for one-third of the total occupied time (Table 8). This analysis validates the perspective that a small number of vehicles (151) are effectively rendering these public parking spaces unavailable to visitors or customers. Figure 5 below displays the location of these 151 vehicles that were observed parking on more than seven (7) occasions. The parking deck and Town Hall area account for 89 of these 151 cars that were observed parking on more than seven (7) occasions. It is interesting to note that the Rosemary St lot contained seven (7) of these long-term parked vehicles. Public feedback suggested that this highly-visible lot was filled by UNC student vehicles for the entire day.

**Figure 5: Number of Long-Term Parked Vehicles by Lot**



Note: Long-term Parked Vehicle include those observed on more than seven (7) occasions.

**Table 8: Comparison of Occupied Time within Public Parking Lots**

Frequency Observed	Unique Plates	%	%	Occupied Time	%	%
10	32	4%	19%	320	12%	48%
9	41	5%		369	14%	
8	42	5%		336	13%	
7	36	4%		252	10%	
6	30	4%	13%	180	7%	19%
5	27	3%		135	5%	
4	48	6%		192	7%	
3	81	10%	69%	243	9%	33%
2	143	18%		286	11%	
1	333	41%		333	13%	
<b>Total</b>	<b>813</b>			<b>2,646</b>		

Note: License plates were observed every hour for 10 hours within public parking lots only.

The shaded cell represents the same 151 vehicles, occupying 48% of the total occupied time.

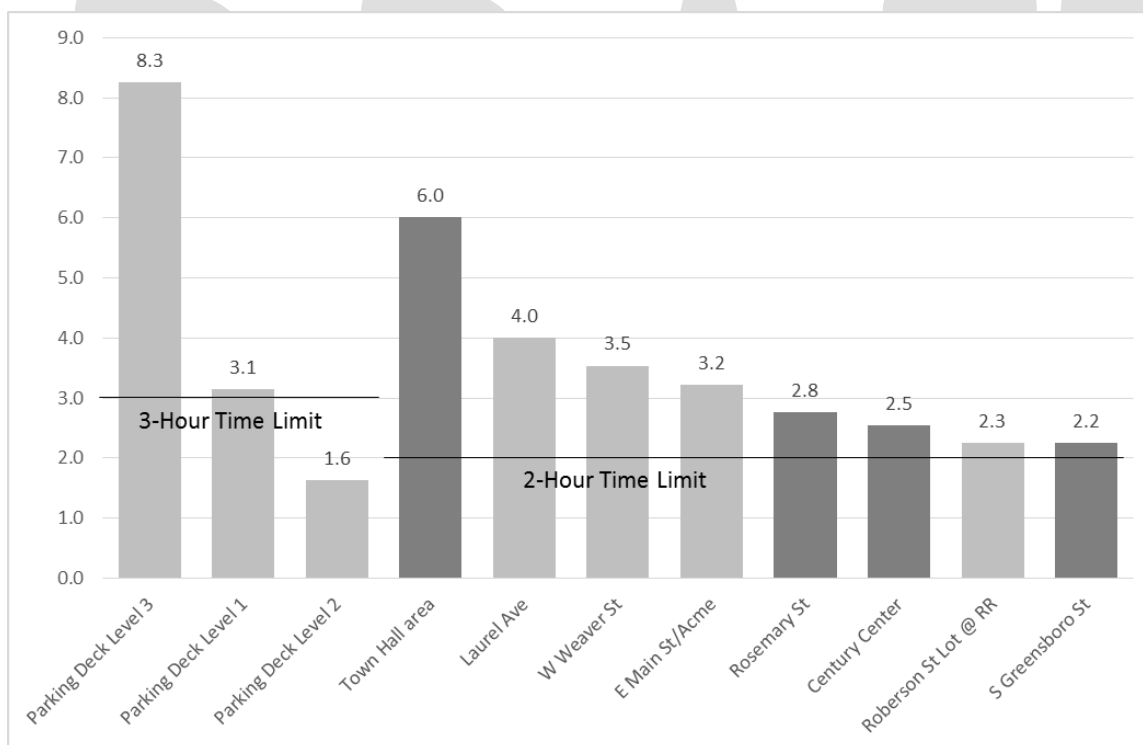
Identifying the public parking lots where these long-term parking vehicles are observed is the next question to address. Figure 6 below displays the average length of stay for each lot. Note that the parking deck allows for 3-hour parking, and only vehicles observed on level 3 were found to stay longer than this threshold of time. These vehicles were identified as employees of the East Main

Square property, who have been instructed to park on level 3, leaving the first two levels for customers.

The remaining lots are 2-hour parking during the day, with the exception of Town Hall. Laurel Ave, and W. Weaver Street lots are both located on the west side of downtown, and these lots averaged the longest length of stay for public lots (4.0, and 3.5 respectively).

The Rosemary lot is perceived by stakeholders as filled by UNC students for a large portion of the day. This analysis reveals that the average length of stay was found to be only 2.8 hours during the day (8 AM to 5 PM). The significance of this issue with UNC students appears to be exaggerated, based on these data.

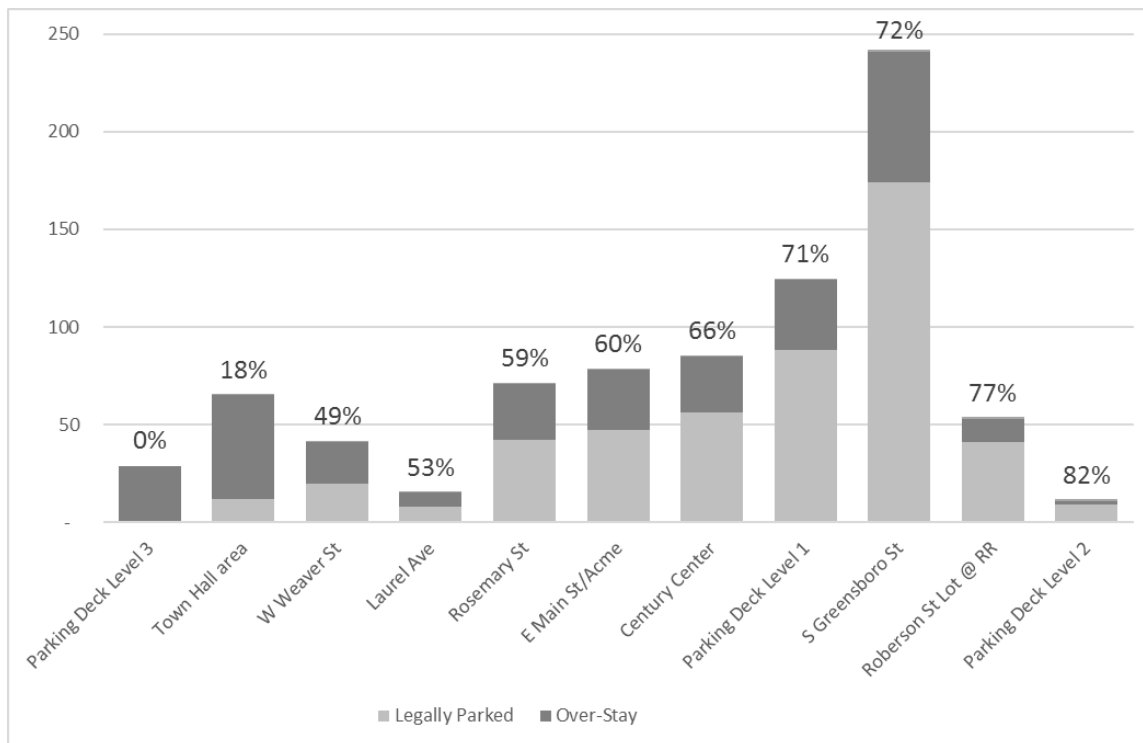
**Figure 6: Average Length of Stay (Hours) for Public Parking Lots**



Note: Dark shaded bars represent Town-owned parking lots; Light shaded bars represent leased parking lots.

To examine parking compliance with the 2-hour or 3-hour time period, the license plate dataset was queried and the data was summarized by lot from lowest percent compliance to highest. The four (4) parking areas with the lowest percentage of compliance (Parking deck level 3, Town Hall, W Weaver St and Laurel Ave lots) as shown in Figure 7 below, also have the highest average length of stay from Figure 6 above.

**Figure 7: Parking Time Limit Compliance for Public Parking Lots**



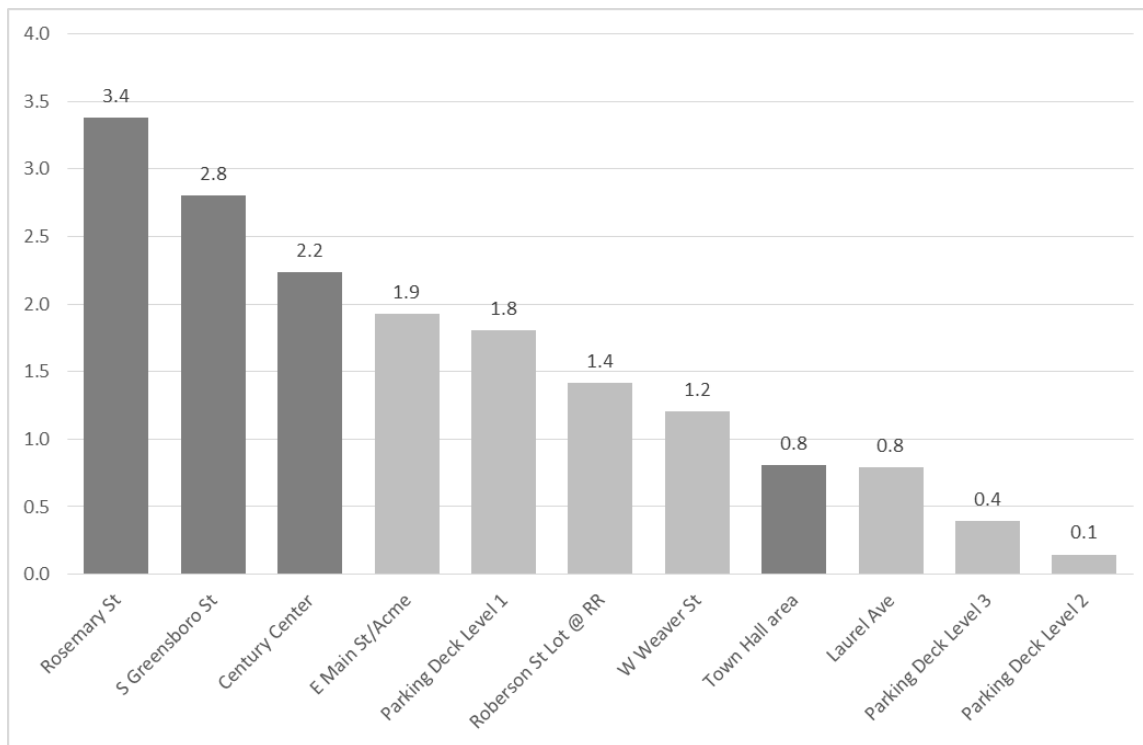
## Turnover Rate

A parking turnover analysis is similar to the length of stay analysis, however, turnover represents the total number of different vehicles that utilize a parking lot during the day. Turnover is calculated as the total number of unique license plates found within a lot divided by its number of spaces. A low turnover rate ( $\leq 1.5$ ) is expected for employee parking areas such as Town Hall. A high turnover rate ( $\geq 1.75$ ) is expected for customer parking areas such as on-street spaces or centrally-located lots that are enforced regularly. Using the same license plate data, turnover rates were calculated for each public lot and sorted lots from high to low turnover (Figure 8).

The results suggest that the three (3) lots with the highest turnover are all public-owned parking lots. The Rosemary Street lot supported 71 unique license plates for its 21 parking spaces for a turnover rate of 3.4. The S Greensboro Street lot is much larger, and supported 255 unique plates for 91 parking spaces (2.8 vehicles per space). The Century Center lot supported 85 vehicles within its 38 parking spaces (2.2 vehicles per space).

The parking lots with the lowest turnover rate included levels 2 and 3 of the parking deck (0.1 and 0.4 respectively), the Laurel Ave lot (0.8), Town Hall area (0.8), and W Weaver St (1.2).

**Figure 8: Turnover Rate for Public Parking Lots**



Note: Dark shaded bars represent Town-owned parking lots; Light shaded bars represent leased parking lots.

Turnover rates < 1.0 suggest that fewer cars parked in this lot than the total number of spaces (e.g. 80 cars for 100 spaces).

## Public Parking Management and Enforcement

Public parking lots are signed as 2-hour parking between the hours of 7 AM and 5:30 PM. The exceptions are Town Hall (no overnight parking), and the East Main Square parking garage, which is signed as 3-hour parking for levels 1-3. The purpose of the 2-hour limit is to discourage long-term parking and encourage turnover in public-owned lots. Based on the parking occupancy counts in January and April, the S Greensboro St lot (57-64%), E Main St/Acme lot (57-88%), and Roberson St lot (61-83%) are all approaching or near the ideal 85% maximum occupancy. These data suggest that the 2-hour time limit is effective at preventing full parking lots (> 85% occupied) during the lunchtime peak.

## Parking Enforcement

Parking Enforcement is handled by the Carrboro Police Department. This is common for many small to mid-sized cities in North Carolina. The challenge with this methodology, however, is that Police



Department staff is often occupied attending to other, more urgent duties. As a result, parking enforcement is not consistent throughout the weekday, and over-stay parking occurs (confirmed by length of stay analysis, Figure 6).

The Town has used new signage at parking lot entrances to encourage voluntary compliance with the 2-hour parking limit, stating that parking citations may be issued. The average length of stay for the S Greensboro St lot was observed to be 2.2 hours, the shortest of all public lots, and the turnover rate was 2.8 (second highest). These data suggest that this lot is used for short-term parking and turns over frequently. It is unclear whether the new signage at the entrances is influencing these conditions because data were not collected before the signs were placed.

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### **Private Parking Signage**

Private parking lots are also signed to prevent unauthorized parking. These private signs represent a wide variety of styles and formats, which may contribute to confusion as drivers are attempting to read each unique sign, including the fine print. Private signs often do not include the time of day that parking is reserved, such as: "Reserved Parking, Towing Enforced."

Because they are privately owned, these parking lots are not a viable option for drivers 24-hours per day, 7 days per week, unless they are specifically shopping or patronizing the store. As a result, these parking lots may remain empty for a large portion of the day, night or weekend. Parking occupancy counts seem to confirm that most private lots are less than half-full for a majority of the day and essentially empty after 6 PM (Figure 4).

# Future Conditions

## Future Parking Demand

VHB constructed a parking demand model to estimate the number of parking spaces needed to meet the expected demand for future development projects. The model may be adjusted or updated as additional information is obtained, or assumptions are revised.

The Town generated a list of current and anticipated development projects within the next five (5) years and the estimated parking associated with each. VHB identified the project locations and assigned each with a respective parking analysis block ID (refer to Figure 1). The estimated number of additional parking spaces created at the conclusion of each individual project can be found in Table 9 below. The list of projects includes hotel, residential, retail, civic, and mixed use developments.

**Table 9: Future Development Projects List**

#	Project Name	SqFt	Land Use	Parking Removed <sup>1</sup>	Parking Added	Net Balance
1	Hilton Garden Inn	149 beds	Hotel	-	+337	+264
2	East Main Square Buildout	205,000	Mixed Use	-88	+15	
3	Shelton Station A	23,000	Office	-	+40	+170
4	Shelton Station B	130 beds	Residential	-	+130	
5	PTA Thrift Shop	5,000	Retail	-	+30	+30
6	Club Nova	9,000	Office	-20	+26	+6
7	CVS Relocation	11,000	Retail	-26	+50	+24
8	Orange County Library	15,000	Library	-91	+100	+9
9	Museum/Arts	46,000	Civic	-36	+156	+120
<b>SUBTOTAL</b>				<b>-261</b>	<b>+884</b>	<b>+623</b>

Note: <sup>1</sup> Parking to be Removed represents existing surface parking lots/areas that are expected to be future building sites. These values are estimated by VHB based on site plans, project descriptions, and professional judgement.

Parking added column was generated with input from the Town of Carrboro.



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## Model Assumptions

Below are the assumptions that influence the future demand modeling process. Adjustments to each input will have iterative effects on other calculations and modify the outputs. Assumptions listed below were made based on input from Town of Carrboro staff and professional judgement.

- The peak period is assumed to be the time of day when the greatest number of parked cars was observed, including public and private parking areas.
- Lunchtime (11 AM to 1 PM) was observed to be the overall peak period, based on parking occupancy counts collected on Thursday April 21, 2016.
- Effective Capacity is assumed to be 85% of total parking spaces within a parking lot.
- Existing building square footages were supplied by the Town of Carrboro, as of July 2016.
- Existing land uses were inferred from permissible use codes and descriptions, which were reviewed by the Town of Carrboro.
- Total future parking demand was calculated from ITE Parking Generation Manual, 85<sup>th</sup>-percentile values for each land use category. These values represent the future parking demand-high values.
- Time of day reduction factors were applied based on ITE Parking Generation Manual. These values represent the future parking demand-low values.
- List of future development projects were generated by the Town of Carrboro, as of July 2016.
- Estimated parking removed per project is the existing parking spaces removed to accommodate the new development. This was assumed based on project descriptions, site constraints, and professional judgement.
- Town of Carrboro estimated the number of proposed parking spaces gained for each project based on the best available project information and descriptions.
- CVS project assumes relocation from its current location with backfill of a similar business into the existing space.

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## ITE Manual – Parking Generation

VHB referred to the Institute of Transportation Engineers (ITE) Parking Generation Manual, 4th Edition to estimate the future parking demand generated by each of the nine (9) current and future development projects. The ITE manual contains research from transportation engineering and planning professionals, and is regularly updated with actual parking occupancy counts from urban and suburban locations across the country. This resource is universally accepted as the standard resource for parking generation and guidance.



The ITE Manual provides two points of reference for parking studies. The first is the total parking demand that represents the maximum number of parked vehicles regardless of the time of day (i.e. the worst-case condition). This is essentially the Black Friday shopping condition in late November. The total parking demand influences the maximum number of parking spaces to be built, however it is not the only estimate. This study will refer to this as the future “Demand-High” value.

The second point of reference includes time of day factors (percentage of total) that reduces the total future parking demand down to the expected typical demand over a typical weekday or weekend day. These values influence the expected number of parked vehicles during the AM, lunchtime, PM, or evening periods. This study will refer to this as the future “Demand-Low” value.

These two estimates allow a planning study to compare the worst-case condition (“Black Friday” shopping) with the typical peak period condition, providing a low and high range of future demand and preventing over-supply of parking that will sit empty for the majority of the year. Public outreach comments and survey feedback voiced support of this goal of preventing over-supply of unnecessary parking. Many viewed empty parking spaces as an inefficient use of space that could more desirably be used for development or open space, and preferred the encouragement of alternative modes of travel rather than supply additional parking.

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## Existing Demand and Balance

To calibrate the parking demand model to the current conditions, VHB calculated parking demand for all buildings within the study area using values from the ITE Manual, and compared these with the actual parking occupancy counts collected in April 2016. Because the Town of Carrboro has applied consistent parking requirements to development projects, we anticipated that the actual parking demand would be very similar to the calculated parking demand.

VHB observed a total of 2,122 cars parked during the lunchtime peak period. This value represents actual parking demand. Using ITE manual for guidance, VHB calculated a current parking demand of 2,096 cars for this same period of the day, which is 98.8% of the observed demand. This comparison validates the model inputs (Table 10).

**Table 10: Existing Parking Demand Comparison**

Scenario	Spaces	Actual Demand (Cars)	Calculated Demand (ITE)
Existing	4,003	2,122	2,096

Note: Calculated Demand is 98.8% of the Actual Demand. Both estimates represent the 11-1 PM lunchtime period.

## Targeted Parking Occupancy

The number of empty parking spaces was observed to be 1,880 during the lunchtime peak period (11 AM to 1 PM). In practice it is undesirable for a parking lot to be 100% full. Rather the targeted parking occupancy for each lot should be between 85% and 90%, or roughly one (1) empty space for every seven (7) to ten parking spaces. This targeted occupancy will ensure that vehicles are not unnecessarily “circling the block” or congesting parking lot aisles in search of that last empty parking space.

## Existing Surplus

Applying a desired maximum parking lot occupancy of 85%, the current combined public and private parking available in downtown Carrboro can effectively support 3,403 parked cars. This is also called the Effective Capacity. VHB observed a maximum of 2,122 parked cars, which represents the actual demand. Therefore, **the calculated parking surplus for downtown Carrboro on a typical weekday is 1,281 empty spaces for the existing conditions.** The split between public and private surplus parking spaces is displayed in Table 11.

**Table 11: Existing Parking Surplus**

Scenario	Spaces	Targeted Occupancy	Effective Capacity	Actual Demand (Cars)	Existing Surplus
Public	655	85%	557	368	189
Private	3,348	85%	2,846	1,754	1,092
<b>Total</b>	<b>4,003</b>	<b>85%</b>	<b>3,403</b>	<b>2,122</b>	<b>1,281</b>

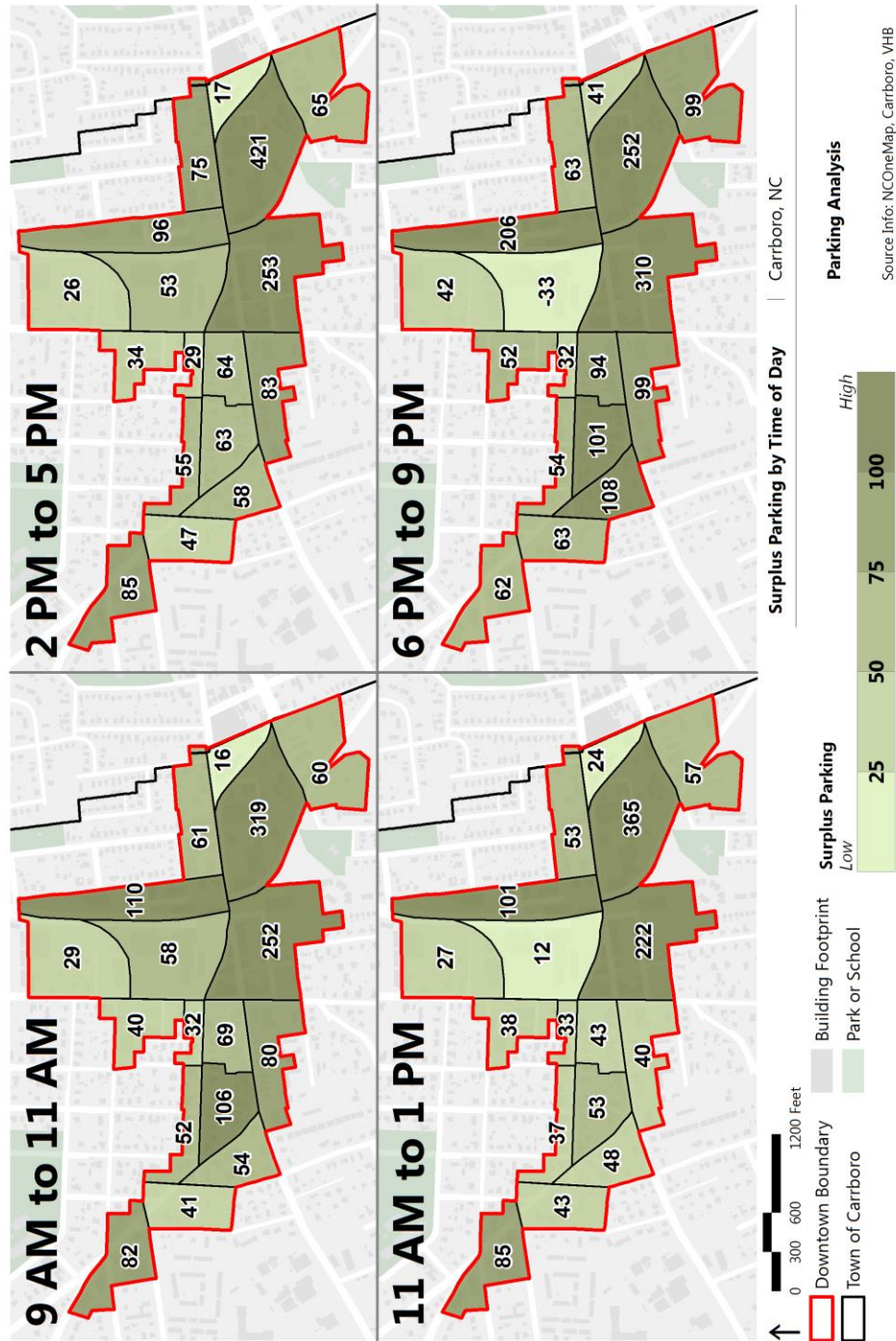
Note: Actual Demand (cars) from the 11-1 PM peak period, collected on Thursday April 21, 2016

Effective Capacity is the total Supply x Targeted Occupancy (4,003 x 0.85)

Existing Surplus is the Effective Capacity – Actual Demand (3,403 – 2,122)

Figure 9 displays how surplus parking spaces are not evenly distributed across all parking analysis blocks within the study area. Some parking analysis blocks have an existing surplus of 10-20 spaces, while others have a surplus of more than 300 spaces, depending upon the time of the day. Note the parking analysis block that includes the Carr Mill Mall has a surplus parking value of -33 during the evening 6-9 PM period. Even though there are 400 spaces available, this negative value is due to the 373 cars observed exceeding the Effective Capacity (340 spaces) of the analysis block.

**Figure 9: Comparison of Surplus Parking by Block and Time of Day** (Thursday, April 21, 2016)



Note: Refer back to Figure 1 Study Area for a map of the parking analysis blocks, represented above.

## Future Demand and Balance

Quantifying the future parking supply-demand balance is valuable information for the Town. This information serves as the justification for potential management strategies and programs that may be aimed at modifying, mitigating or reducing future parking demand (following report section).

VHB applied parking demand rates to each development project with guidance from the ITE Manual and input from the Town (Table 9). Parking demand was compared between the existing and future conditions to quantify the magnitude of new parking demand that is expected as new development or redevelopment projects are approved. The estimated future parking demand is expected to increase within the range of +761 to +1,044 cars during the future peak period. These values represent the two sample points provided by the ITE Manual Parking Generation section, described above (peak time of day adjustment and maximum).

Each project will provide new parking spaces based on the current Town land use ordinance. Some of these projects are anticipated to remove existing surface parking as part of the development process, this is reflected by the Parking to be Removed category. This estimate is conservative for the purposes of this plan, and based on preliminary information. It is likely that projects will be designed to avoid as much parking removal as practical. The net result of parking removed and added is estimated to be +623 parking spaces (Table 12).

**Table 12: Future Development Parking Modifications**

Parking Modification	Spaces	New Demand-Low	New Demand-High
Parking to be Removed <sup>1</sup>	-261	-	-
Parking to be Added	+884	-	-
<b>Net Balance</b>	<b>+623</b>	<b>+761</b>	<b>+1,044</b>

Note: <sup>1</sup> Parking to be Removed represents existing surface parking lots/areas that are expected to be future building sites.

VHB will use the average of new demand-low and new demand high  $((761 + 1,044) \div 2 = 903)$ .

## Future Surplus

The future Effective Capacity is calculated by applying the same desired maximum parking lot occupancy of 85% to the future parking supply. Future parking supply is expected to increase by +623 spaces due to the anticipated future projects. By 2021 downtown Carrboro will support 3,942 parked cars (Effective Capacity). VHB estimates the future parking demand to be +903 new spaces, which is the average of the low and high demand values from Table 12. Adding the actual demand from 2016 counts to the new demand yields a total future parking demand of 3,024 cars. This leaves

an **estimated future surplus of 908 empty spaces**, within a range of +/- 140 throughout the day. The pattern of future parking surplus is displayed in Figure 10.

Public parking lots will account for a small surplus of parking spaces, while private lots are expected to have nearly five-times as many surplus spaces in the future (Table 13). A mechanism to allow for public use of private lots during the evenings or weekends, when the business is no longer open, is not currently in place. As a result, these private parking spaces remain empty. Suggestions for better utilization of these spaces are addressed in the Management Strategies section to follow.

**Table 13: Future Parking Surplus**

Scenario	Future Spaces	Targeted Occupancy	Effective Capacity	Future Demand	Future Surplus
Public	784	85%	666	524	142
Private	3,842	85%	3,266	2,500	766
<b>Total</b>	<b>4,626</b>	<b>85%</b>	<b>3,932</b>	<b>3,024</b>	<b>908</b>

Note: Future Spaces estimated from future development projects.

Effective Capacity is the total Supply x Targeted Occupancy (4,626 x 0.85).

Future Demand is calculated as the average between the Low and High Demand estimates, added to the existing demand.

Future Surplus is the Effective Capacity – Future Demand (3,932 – 3,024)

#### Future Surplus of Public Spaces

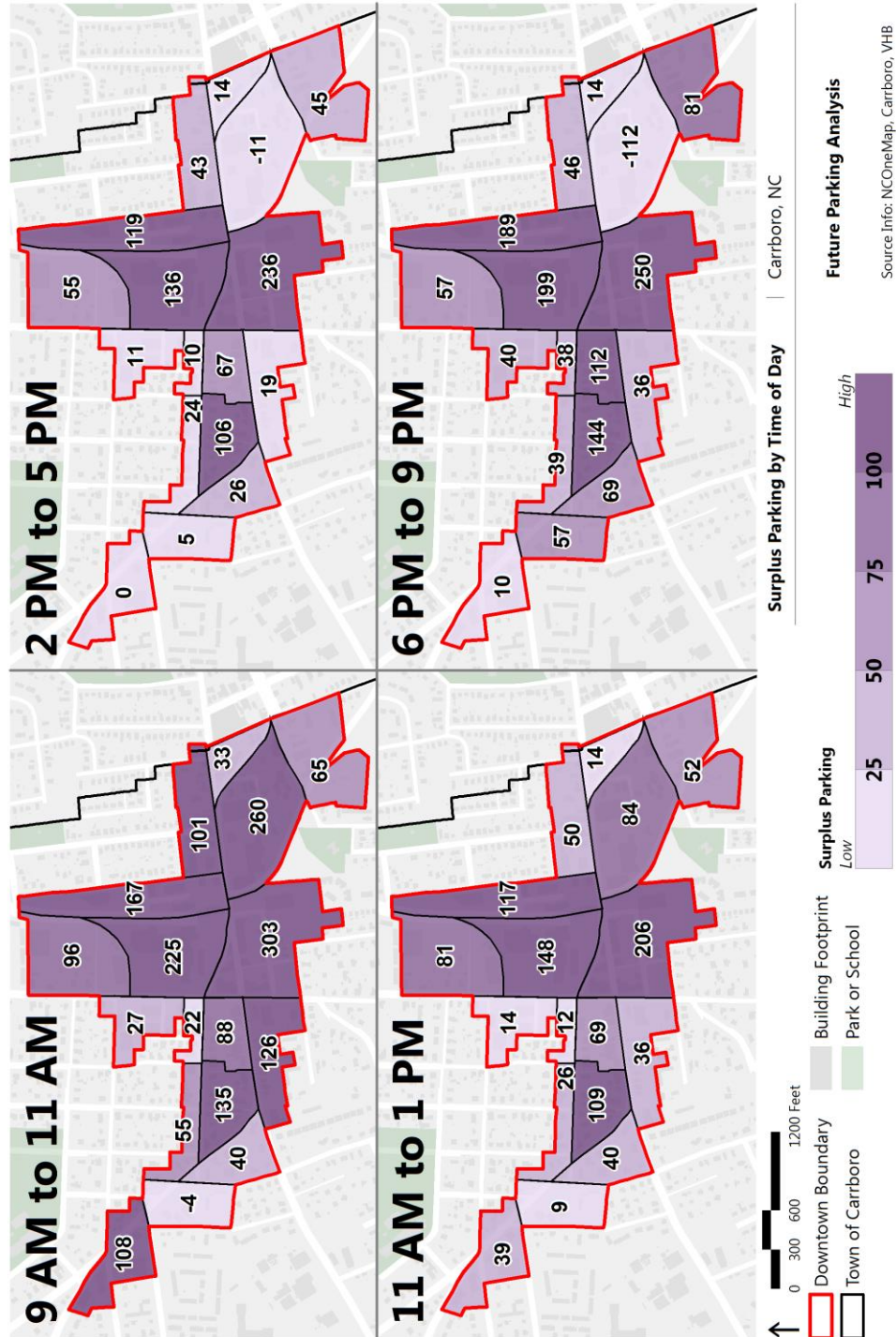
Private parking is included within this future demand model because eight (8) of the 10 future development projects are private, and private parking accounts for 82% of total parking. The two (2) future development projects involving public parking (though still considered private developments) are both within the same block (#12), south of Main Street between S Greensboro Street and the railroad tracks. For the purposes of this section, all other public parking lots are assumed to be unchanged from current supply and demand.

Block #12 has 196 public parking spaces within three (3) public lots. Utilization counts observed a maximum of 158 parked vehicles parked during the busiest period, which happened to be the evening 6-9 PM period.

The future parking demand model anticipates a net gain of +129 parking spaces for this block from the two development projects (Library and Museum/Arts), yielding 325 parking spaces for public use. Assuming the same targeted occupancy of 85%, these lots will support 276 parked vehicles. The estimated new demand generated by these two projects is +232 cars with a range of +/- 15, leaving a surplus of 44 empty spaces in the future.



**Figure 10: Estimated Future Parking Surplus by Block and Time of Day**





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### What does this mean for the Town of Carrboro

The Town controls a small percentage (18%) of total parking. There is a surplus of parking during the busiest time of the busiest day of a typical weekday for both public and private parking lots. The data collected does not support the need for the Town to provide additional parking spaces today.

Over the course of the next five years parking demand is expected to increase by 900 new parking spaces due to new development, and these projects should provide a sufficient number of additional new spaces to mitigate this demand. The balance of spaces needed will reduce the existing surplus of more than 1,200 spaces to approximately 900 surplus spaces, which factors in an artificial maximum occupancy of 85% (leaving 15% of spaces empty). This quantitative analysis does not support the need for the Town to construct additional parking spaces in the next five years.

Rather than construct new parking lots or structured parking, **the Town may wish to more effectively manage its existing supply of 655 parking spaces.** These qualitative improvements to parking supply would include, in the immediate-term, reviewing all 63 reserved parking spaces (non-ADA signs) to identify whether they are needed, or if they may be removed. This would also include ensuring that all public parking lots are consistently signed, striped, maintained and easily accessible so that visitors are aware and willing to park in any of these lots.

The following section outlines additional potential strategies that would allow the Town to more effectively manage and encourage people to use the existing parking resources.



# Management Strategies

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## Management Strategies of Parking Systems

Future parking demand is not evenly distributed across the entire study area, just as the existing parking demand and surplus is not evenly distributed. Some downtown locations will experience a parking shortfall during peak periods while other locations in downtown will have excess parking. There are many strategies for actively managing parking to achieve better balance of supply and demand, described below. Strategies have been organized into five (5) categories, Education, Encouragement, Enforcement, Evaluation and Engineering.

The first four (4) categories offer a variety of cost-effective management strategies with the goal of reducing or balancing demand throughout the existing parking supply. The final category (Engineering) involves physically constructing new parking lots/garages. Public opinions received during the online survey process, public meetings, outreach events and business owner discussions, suggest that citizens of Carrboro prefer a variety of parking management approaches rather than a build-more-parking solution.

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### Education

Education strategies seek to inform citizens of the principles, vision and goals of the parking system management strategy in the hopes of modifying parking behavior. Initiatives should reinforce the Town's message relating to parking:

1. Carrboro supports a dynamic, mixed-use and multi-modal downtown
2. Carrboro desires convenient parking for its short-term visitors
3. Carrboro acknowledges that reducing unnecessary vehicular circling will benefit everyone
4. Carrboro encourages a park once and walk strategy
5. Carrboro encourages long-term parking in low-demand lots
6. Carrboro will use strict enforcement (citations) as a last-resort option
7. Carrboro will continually evaluate parking demand and manage parking accordingly

The following subsections provide more detailed education considerations for the Town, including signage, employee parking, walk-time perceptions, alternative transportation, costs and land uses.

## Wayfinding and regulatory signage standards

Signage was routinely discussed by stakeholders throughout the planning process. Standard signage provides a level of familiarity and peace of mind for drivers, especially if they are first-time visitors to Carrboro. Public parking lots currently have similar signage at the parking lot entrances, though improvements can be made to improve consistency. The 2-hour parking time limit between 7 AM and 5:30 PM is clearly marked, however the language is slightly different. Examples include:

- "2 HR Parking Enforced All Spaces"
- "2 HR Parking Enforced"
- "2 HR Parking"
- "2 HR Limit"

More important than the language is the actual sign size, shape, color and placement. These four (4) messages are displayed on three different sign types (Figure 11). These example signs range in size from 4" to 18" in height, 12" to 24" in width, and mounted from 1' to 7' above the ground. One sign has a brown background with white lettering, another is white with black lettering, and the other two are white with green lettering. These inconsistencies can lead to driver indecision, especially unfamiliar visitors, when attempting to find available public parking.

Loading zone parking spaces along E. Weaver Street are reserved between 7:30 AM and 5:30 PM. To promote consistency with public parking lots, the restriction should be adjusted to begin at 7 AM.

**Figure 11: Existing Public Parking Signage**



Public parking signs specify when the 2-hour time limit is enforced. It is assumed that after 5:30 PM these parking lots are unrestricted and open to the public.

Private parking signs display similar restrictions for customer parking (Figure 12). The time of day that towing is enforced is inconsistently displayed. Some private signs specify "24/7", while others provide the specific hours, and some simply state "Permit Required" or "Towing Enforced." Private parking signs have a variety of sizes, shapes, colors and placement, which inadvertently promotes confusion or even fear of parking incorrectly.

Private parking signs that do not specify the hours of towing enforcement are assumed to be unavailable for the entire 24-hour day. Even if the hours are displayed (e.g. 7:30 AM to 5:30 PM), drivers will choose not to park after the restriction ends in fear of being towed. This behavior may explain the 6-9 PM parking utilization pattern (Figure 4), where most private parking lots were nearly empty (green) while public lots were nearly full (orange/red).

**Figure 12: Existing Private Parking Signage**



The Town of Carrboro does not have authority to regulate private parking signs that are beyond the roadway right-of-way. This should not preclude the Town from working with the Chapel Hill-Carrboro Chamber of Commerce and Carrboro Business Alliance to discuss how these inconsistencies may contribute to unsatisfied customers, initiate standardization of signage and seek methods to incentivize businesses to replace their existing signs.

The Town of Carrboro should adopt a set of parking signage guidelines that are compliant with the Manual on Uniform Traffic Control Devices (MUTCD), and begin to incrementally replace existing public parking signs over time. The new signs must include standard language and consistent hours of enforcement, as well as stipulate that public parking is unrestricted after 5:30 PM. Preferably, the latter will be in the form of a separate sign plaque, that may be attached below any existing signs (public or private). The overall cost of improving public parking signage could be in the range of \$1,000 to \$5,000.

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### **Long-term employee parking**

Many business owners encourage their employees to park furthest from the front door, or within an adjacent public parking lot in order to leave parking spaces for customers. This practice benefits businesses that may have a limited number of convenient spaces, or a large number of staff (e.g. restaurants). The potential down-side to this practice is that the limited number of public spaces are virtually unavailable for large portions of the day (see length of stay report section). If the Town began to strictly enforce the 2-hour time limits, then these employees would potentially face a parking citation.

One approach would be to designate a limited number of spaces as long-term employee parking, preferable in low-demand lots, located in the furthest corners of the lot. A second option would involve coordination between adjacent business owners to allow a limited number of employees to share parking between two or more businesses. The total number and time of day would have to be agreed upon in advance and evaluated after additional parking utilization data is collected.

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### **Walk-times Map**

Overcoming perception is a challenge for parking system management. Customers often remark that a certain parking lot is “too far to walk” unless they have a direct line of sight to their destination. One strategy to overcoming perception of walking distances is to develop a walk-times map that displays the approximate number of minutes between certain locations.

Rather than create a new product from scratch, the approximate walking time (in minutes) could be added to existing publications:

- Walk Carrboro Attractions Map <http://www.walkcarrboro.com/map.html>
- Public Parking Map <http://gis.ci.carrboro.nc.us/GIS/downloads/printmap/BWParking.pdf>
- Downtown Parking Map <http://gis.ci.carrboro.nc.us/iCarrboro/cParking.html>

The average person walks at a rate of 3 miles per hour (+/- 0.75), which equates to one mile in 20 minutes. This reasonably concludes that a quarter-mile distance (1,320 feet) can be covered by a 5-minute walk. The distance between Town Hall and the Hampton Inn hotel is approximately 2,800 feet, or a 10-minute walk-time.

Only 7% of survey respondents indicated that the last time they chose to drive to downtown the walk to their destination was more than 5-minutes, and only 3% found their walking time to be “Long.” This finding suggests that respondents are willing to park and walk a reasonable distance from free public parking lots, and this distance is likely greater than one-quarter mile (5-minutes).

The overall cost of preparing a walk-times, published to the Town's website, could be in the range of \$1,000 to \$10,000 depending upon whether a graphic designer is involved.

### Guerrilla Wayfinding

Guerrilla Wayfinding (also known as Tactical Urbanism) is a recent movement to promote walking and bicycling through the grassroots installation of temporary signage by citizens (as well as the Town/City government). This idea was mentioned by attendees at the first Carrboro public meeting, referencing Matt Tomasulo, the originator of the Walk [Your City] movement in 2012.

The signs are approximately 1'x1' in size, made of water-resistant material, and attached to existing poles or posts with plastic zip ties (displayed below). Each sign displays an encouraging message, such as "It is a 5-minute walk to a grocery store" or similar destinations. Signs are \$20 each regardless of the number of signs ordered, and this does not include shipping. The project website contains information on the movement and its success in three short years <https://walkyourcity.org/>



Photo source: Blue Cross and Blue Shield of NC

For the purposes of this study, [the Town should consider a pilot program to encourage walking from distant public parking lots](#) by installing signs at those lots (such as the Rosemary Street lot, or Town Hall) with messages such as "If you park here it is a 5-minute walk to the Weaver Street Market" or even "delicious coffee" if additional encouragement is needed. For the opposite direction, signs along Weaver Street could reference the short distance to "free public parking" in both directions. The goal of this initiative is to modify a person's perception of walking distances. The overall cost of planning and installing Walk Carrboro signs could be in the range of \$500 to \$2,000.

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### **Alternative transportation mode shift**

The Town of Carrboro encourages the use of alternative modes of transportation very effectively. The amenities (programs) and facilities (infrastructure) to promote bicycling, walking and transit are





apparent all over town as well as during conversations with the public. Parking demand is directly linked to the number of individuals who choose alternative modes of transportation.

Rather than invest in the acquisition of land and construction of surface parking or structured parking garages, the Town chose to invest in infrastructure such as sidewalks, bicycle lanes, shared use paths, and bicycle parking as well as non-physical amenities, like public transit, to encourage non-automotive travel. For additional parking flexibility the Town chose to begin leasing properties from private land owners for use as public parking lots for those who may not be able to choose an alternative mode. The overall program cost of improving sidewalks and installing bicycle facilities and amenities could be in the range of \$50,000 to \$500,000 per year, with some grant funding potential if there is a dedicated local match.

Limiting the potential barriers that prevent citizens from choosing alternative modes is the primary objective of this management strategy initiative. Based on the public survey the following items may serve as potential barriers to be addressed by the Town:

- 65% of respondents would like more bicycle racks, and 24% believe there are too few.
- 19% of respondents do not own a bicycle, and 41% were unlikely to ride a bicycle.
- 6% of respondents indicated that possible barrier to visiting downtown more frequently were related to alternative modes of transportation. Specific references were made to:
  - Improved bus frequency, particularly later into the evenings and on weekends
  - Sidewalks and bicycle lanes extending further from downtown
  - Clearing debris/ice/snow from bicycle lanes more frequently
  - Unsafe bicycling due to frequency of driveways

### Additional Tradeoffs

If reducing future parking demand through alternative transportation options seems like a challenge for some citizens, then perhaps linking this initiative to individual cost-savings will tip the scales. Commuter calculator tools are commonly used estimating weekly, monthly, or annual expenses relating to driving to work. Some of these online tools may be found by performing a Google search of "commute calculator". A couple of notable results include:

1. [www.transportationchoices.org/reasons/commute-calculator](http://www.transportationchoices.org/reasons/commute-calculator)
  - Includes estimate of monthly greenhouse gas reduction
2. [www.commutesolutions.com/commute-cost-calculator/](http://www.commutesolutions.com/commute-cost-calculator/)
  - Includes widget to embed into your own website
3. [www.commuterpage.com/pages/tools-resources/calculators/cost-of-commuting-calculator/](http://www.commuterpage.com/pages/tools-resources/calculators/cost-of-commuting-calculator/)
  - Includes links to TDM programs in Northern Virginia/Washington, DC

4. [www.commutesmart.info/commute-cost-calculator.asp](http://www.commutesmart.info/commute-cost-calculator.asp)
5. [www.bestworkplaces.org/calculat/calc508.html](http://www.bestworkplaces.org/calculat/calc508.html)

These tools can also be used to estimate the round-trip cost of driving to downtown Carrboro from a person's home or place of employment. Reduction of greenhouse gases are included on some online commuter calculator tools (item #1 in the above list) to link this parking management strategy to environmental quality benefits.

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## Encouragement

Encouragement strategies seek to incentivize citizens and downtown employees to utilize all parking lots, especially low-demand parking lots that are furthest from the center of downtown. The goal is to seek voluntary compliance without the use of parking enforcement, through incentives for individuals and/or free publicity for businesses that encourage parking behavior that benefits downtown. This type of "Support Local Businesses" campaign is already prevalent in Carrboro, and simply needs to be reinforced to promote parking and walking.

Incentives for individuals may include coupons for a free cup of coffee, half-price lunch, discounted tickets to an upcoming event, or branded merchandise (t-shirt, coffee tumbler) from participating downtown merchants. Business recognition may include free or discounted advertisement in a local paper, website, social media page, or radio broadcast. [The Town Government should serve as the administrator of these initiatives](#) through the Carrboro Business Alliance and regular meetings with merchants, boards and various committees, or even the weekly Farmer's Market events.



Image source: Carrboro Business Alliance

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## Lighting and sidewalk improvements

Local business stakeholders discussed qualitative improvements, such as lighting and sidewalks when talking about customers visiting multiple shops without the need to re-park each time. These types of amenities reinforce the unique sense of place where visitors feel safe and decide to spend

additional leisure time. Carrboro businesses are reliant upon customer “walk-by” traffic, choosing to enter their store even if they didn’t come to downtown for that specific reason. Encouraging this behavior may involve reinvestment in sidewalk infrastructure, pedestrian crossing at intersections, landscape lighting improvements or even the addition of outdoor music. For instance, lighting and music improvements may be most valuable at West Weaver Street near the public parking lot, but should also include other portions of downtown, such as along Roberson Street where sidewalks and crosswalks were observed to be lacking during the walkability micro-audit.

The concept is to encourage more exploration on foot by making the streetscape more inviting to visitors, who may then choose to spend additional time (and dollars) in downtown. The costs of improving sidewalk lighting or adding music would be tied to a general streetscape enhancement plan. These types of projects would also include access management (limiting driveways), accessibility and intersection safety improvements, and the addition of street trees. This type of capital improvement project would require various sources of public and private funding.

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### **Improved perception of security**

Related to lighting improvements is the perception of safety. This encouragement program involves crime prevention through environmental design (CPTED), which believes that proper design of buildings and public spaces can lead to a reduction in crime and the perception of fear. Training programs for CPTED concepts are available through the National Crime Prevention Association (NCPA) [www.ncpc.org](http://www.ncpc.org). Elements from CPTED include:

- Controlling the number of entrance/exit points to a parking lot or building
- Incorporating natural surveillance (for maximum visibility)
- Territoriality (such as fencing or landscaping treatments to define a space), and
- Maintenance of public areas

This project’s public survey found that 4% of survey respondents felt “Sometimes unsafe” within public parking lots. This represents a small portion of respondents, however, perception of safety is a critical element to the success of a parking management system. The perception of security relates back to the importance of walk-by customers discussed by business stakeholders. Downtown businesses will benefit from more customers spending additional time walking (and not driving) in the downtown.





Photo source: VHB. Broken glass observed within parking deck.

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### **Bicycle Friendly Businesses**

Carrboro has 30 registered Bicycle Friendly Businesses through the Carrboro Bicycle Coalition (<http://bikecarrboro.com/what-we-do/bike-friendly-business-program>). Benefits of such a designation may include: free promotion and recognition of your business, a plaque to display in the store/shop, enhanced health and wellness of employees, reduced absenteeism, and connection with the local community. The Carrboro Bicycling Coalition (CBC) assists businesses with the application process, and the physical installation of bicycle racks.

Encouraging and promoting bicycle friendly businesses will indirectly contribute to the goal of balancing future parking demand by reducing the need for long-term employee parking. Bicycle friendly businesses are indirectly contributing to this project's vision and goals by limiting the potential barriers to bicycling, such as limited bike parking locations. This initiative may not have a significant impact on future parking demand as compared with others, however, one or two additional empty parking spaces may have an important effect within a small parking lot. The overall program cost of encouraging and promoting the Bicycle Friendly Business initiative could be in the range of \$1,000 to \$5,000 per year.



Photo source: Carrboro Bicycle Coalition

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### Healthy Lifestyles Initiative

Parking and walking from a distant parking lot may be rolled into a healthy lifestyles campaign to promote 10,000 steps per day. Pedometers are low-cost branded merchandise that can be used as an incentive. This campaign may also consider a monthly step challenge among organizations to see which group can tally the greatest number of steps, and win prizes (donations). Healthcare benefit providers (BCBS, Humana, etc.) offer similar wellness programs to incentivize employees to live more active lifestyles. The concept is to unite groups based on their common business interest of maximizing convenient parking for customers, while providing incentives for employees to participate. The program costs for this type of healthy lifestyles initiative would be negligible, as they are likely tied to private company insurance providers.

All of these encouragement initiatives, collectively, may only shift parking behaviors temporarily, or on a small scale. For more widespread behavior shifts, the Town may consider enforcement initiatives, discussed in the next section.

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### Enforcement

This section outlines parking enforcement strategies that promote vehicle turnover. Strict enforcement through the issuance of citations (fees) should be a last-resort strategy; however, it may be necessary for high-demand areas between the N. Greensboro and Lloyd Streets.

Parking enforcement is currently performed by the Carrboro Police Department on an as-needed basis. If a parking citation is issued, the current fee is \$35 for the first offense, \$50 for the second



offense, and \$100 for each subsequent offense within a 365-day period. The parking citation for violation of an ADA/accessibility parking space is a \$50 fee.

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### **Downtown Ambassador Initiative**

Parking Enforcement does not need to be a punitive initiative. Town of Carrboro enforcement officers should be visibly present within areas of high parking demand; however, their role should be adjusted towards an “Ambassador of Downtown.” This parking study has identified the locations of greatest parking demand, and the busiest time of the day (lunchtime) for a typical weekday. [Parking Ambassadors should perform more frequent “tours” of the high-demand parking areas, be visible and friendly, and offer direction to nearby parking areas for long-term parking.](#) This goal of this initiative is not to write a parking citation, but rather to encourage visitors to voluntarily comply with the 2-hour time limit for public parking lots and to educate them about parking options.

[Parking Ambassadors should interact directly with downtown merchants, ask what their customer’s parking needs are and report back to the Town or Downtown Business Alliance.](#) This strategy does not require money for new equipment to purchase, or a new funding source from the Town, but will involve staff time for coordination and communication.

Results from the length of stay analysis should inform the priority lots for targeted enforcement. [The Town should collect future parking utilization counts on an annual or semi-annual basis and the results should be used to identify targeted enforcement areas.](#)

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### **Time Limited Parking**

Parking enforcement seeks a balance between the needs of many different users. Some users may only need a 30-minute parking space, while others are seeking 1-hour, 2-hour, or longer-term parking. This places parking enforcement in a difficult, occasionally hostile situation of enforcing the variety of parking options equally and consistently.

The Town has 30-minute parking within the Century Center parking lot along N Greensboro Street. Parking utilization counts found that this lot was mostly full during the daytime, and 100% occupied on Saturday evening after 6 PM. [The Town should consider adding a limited number of individually-signed 30-minute parking spaces in strategic locations within other high-demand parking locations.](#) These locations could be identified by business owners and supported by actual parking count data. One such location would be the E Main St/Acme lot, as this is highly visible and centrally located. Coordination with the Police Department is essential prior to installing new parking signs. The overall cost of adding time limited parking signage in certain locations could be in the range of \$500 to



\$5,000 depending upon the sign fabrication costs of the Carrboro Public Works Department, which has the ability to produce signs in-house.

A limited number of long-term parking spaces may also be beneficial, perhaps as few as 4-5 spaces as a pilot program. The average length of stay analysis identified several potential candidates for long-term parking, such as the parking deck level 3, Laurel Ave, and W Weaver St lots (all averaging more than 3.5 hours).

Employees of the East Main Square development are directed to park on level 3 of the parking deck. It may be beneficial in the future to relocate these vehicles to the roof level, which may involve issuing a permit to park here, in order to free up public parking on level 3. A second option would be to issue hangtag permits that allow for long-term parking beyond the 3-hour limit. In the near-term these suggestions are unnecessary since the deck does not reach capacity during the typical weekday period.

The Laurel Ave and W Weaver St lots appear to include private business employee parking, and this was confirmed by discussions with business stakeholders. One potential approach would be to sign a limited number of spaces at the rear of these lots for 4-hour or 6-hour parking. A second option would be to issue hangtag permits that would prevent a parking citation for overstay parking. Neither of these options is an ideal approach, as they do not reduce future parking demand. However, they are options to discuss with business owners.

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### **Citation and Appeals procedures**

If the Town desires to actively enforce the 2-hour time limits and issue parking citations, then a full enforcement and appeals process would need to be initiated, including lengthy public involvement. Some important considerations for such a program would include:

- Institute a grace-period of several days or weeks at the beginning of the initiative
- Institute a no-charge warning citation for first-time citations. Include information on where long-term parking is available as well as alternative transportation options.
- Offer a streamlined citation appeals process; be fair and consistent to avoid the appearance of favoritism at all costs.
- Offer a discounted citation amount if it is paid within 96 hours (or another specified time); escalate the fee if it is paid after a specified time (four weeks).
- Investigate an electronic parking management and enforcement software solution that integrates with DMV license plate database. Examples include T2 Systems, TickeTrak, or AIMS, as well as others.



- Contact nearby municipalities and inquire about their enforcement software solution capabilities and limitations.
- Contact vendors of enforcement software to request a demonstration.
- Select a software vendor that offers compatibility with tablet/mobile phone hardware of your choosing (Android most likely).
- Coordinate with Town and County IT Departments to establish a database of repeat parking offenders (scofflaw list), and include a policy for escalating fees for these individuals.

The overall parking enforcement program cost could be in the range of \$50,000 to \$250,000 per year depending upon the desired number of staff, equipment and vehicles, hardware and software, and/or training. The first year startup costs to purchase equipment and integrate software would be additional.

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## **Evaluation**

This section outlines administrative strategies to collect additional data, utilization trends over time and evaluate parking demand as it changes.

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### **Annual data collection program**

This project prepared materials for a field data collection of parking lot occupancy for four (4) periods throughout a typical weekday. Occupancy counts are best performed semi-annually as needed, or as requested to establish a baseline trend throughout the year. These data points are important for separating fact from opinion, and may be used to justify future parking management changes to businesses and the public. Without a record of parking occupancy counts collected across multiple days and months, there may not be a consensus on how to adequately manage public parking. The overall cost of a data collection program could be in the range of \$500 to \$15,000 per year depending upon whether the field crew consists of Town staff, interns, or outsourced, and whether any equipment is leased for data collection or analysis.

### **Online Survey**

Online survey instruments, such as the one that was completed by this study, are an effective measure of public opinions relating to parking, especially as they change over time. The field counts described above represent actual parking utilization, whereas a public survey will measure the perception of parking and whether any previous management adjustments are having a desired



impact. The design of such parking behavior surveys should focus on being brief and repeatable so that many data points may be collected over time (no more than twice a year). The overall cost of an online survey could be in the range of \$500 to \$5,000 per year depending upon marketing and promotion of the survey, format (digital or hard copies), and analysis of data.

Minor changes to the parking management system must be supported by data, not opinion. Data may include the online survey or parking utilization counts. The purpose of these data are to establish a baseline and track the shift of parking demand as a result of parking management changes. The Town should post results of the survey [to a Town website for education of the public and evaluation of the parking program](#).

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### **Formation of Downtown Parking Board**

Parking has been managed on an ad-hoc basis, however, it could be more formalized with stakeholder representation. The Town may benefit from discussing public parking issues during an existing board/committee meeting, such as the Carrboro Business Alliance meetings. Stakeholder involvement is essential, and therefore this existing board or committee must have representation from the Town, County, Police, downtown merchants and property owners. Perhaps in time, this group will grow into a more formalized Downtown Parking Board as needed. This is not essential however. In the meantime, this group could simply discuss parking challenges related to high-demand parking areas. The initial costs for a Downtown Parking Board would be negligible, as this would arise from an existing board or committee meeting.

Parking occupancy collected on different weekdays throughout the year will identify areas that are consistently under-utilized. With this information the Town or Parking Board can work with property owners on shared parking arrangements (subsection to follow) to allow shared use of parking lots during low-demand periods of the day. For example, banks and churches have relatively low parking demand during the busiest part of a typical weekday (lunchtime), and offices have very few parked cars during the evening dinnertime period. These are both opportunities for formal or informal arrangements between adjacent businesses. These arrangements must be data-driven.

Special events are considered atypical from weekday trends, and therefore traffic and parking accommodations for special events may best be handled separately by the Police Department or another agency with staffing capabilities. [Town-sponsored events should have a default parking management plan with overflow parking available](#) at the Town Hall, Carrboro Elementary School or similar locations, should the need arise.

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## Shared Parking Arrangements

Working through the Downtown Parking Board, arrangements to share parking lots should be encouraged. These arrangements would be particularly relevant to adjacent property owners and apply during specified times of the day. This message should be consistently marketed from multiple public and private agencies as a constant reminder to employees and employers: high-demand parking is for customers; low-demand parking is for employees.

The Town of Carrboro should take an active role in facilitating shared parking arrangements between business owners. Shared parking is especially important to Carrboro since private parking constitutes such a large percentage (82%) of total parking. The official Land Use Ordinance has required an appropriate number of parking spaces for each business on an individual basis. Adjacent properties are busy at different times of the day (or months of the year), and therefore surplus parking is available for shared use during the day or evening. **The significance of this initiative cannot be understated.** Parking utilization counts identified the greatest number of parked vehicles during lunchtime (11-1 PM). However, parking demand within public lots was greatest during the 6-9 PM period when very few private spaces were occupied.

To communicate parking arrangements to the public, the Town should recommend, and create, a standard sign or plaque added to an existing sign that specifies "Public Parking after \_\_\_ PM" or another similar message at the entrance to the private lot. The overall cost of generating a standard sign plaque could be in the range of \$500 to \$5,000 depending upon sign shop for fabrication. This is intended to be a voluntary agreement to support downtown merchants. The Town would play a limited role in facilitating the discussion and fabricating the sign plaque.

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## Engineering

Engineering solutions involve the planning, design and construction of new parking facilities. This category is presented last because the low-cost and quick-return Education, Encouragement, Enforcement and Evaluation strategies should be programmed for the short-term, while Engineering considerations are being considered for the long-term. If the initial strategies have a desired reduction of parking demand, then perhaps the need for engineering solutions is delayed or reduced significantly.

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## Lot Design and Restriping

Many of the existing public parking lots are unpaved (gravel) with concrete wheel stops to mark individual parking spaces. Because there are no parking stall lines, people will naturally leave



additional space between their vehicle and the adjacent vehicle to avoid door dings. It is also possible for vehicles to inadvertently park askew or diagonal without the painted stall lines for guidance. This behavior reduces the total number of vehicles than can park within the lot, and therefore impacts utilization counts.



Public Parking Lot



Private Parking Lot

To maximize the capacity of the existing parking lots, the Town could either (a) pave and stripe these lots, or (b) stripe the gravel with paint rather than traditional thermoplastic markings. Paving each lot would also require civil engineering design plans for stormwater management. This approach is more expensive, and conflicts with the overall vision for the Town as an environmentally-sensitive community. The negative aspects of gravel parking lots include higher maintenance costs and poor aesthetic-quality for the visitor in addition to inefficient parking habits.

Striping the gravel parking lots will require frequent maintenance to ensure that the painted lines are visible. This may be a low-cost approach to indirectly gain additional parking spaces without new construction. Individual parking lot layout and design plans could be developed using AutoCAD software to identify the most efficient parking lot layout that would fit within the constraints of the property. The overall cost of an engineering parking lot striping plan could be in the range of \$1,500 to \$5,000 per lot depending upon the availability of planimetric data, aerial imagery, stormwater control infrastructure, lighting, and engineering seal requirements.

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### **Paid Parking Options**

Management strategies presented above reference different methods for actively managing a parking system. The term “actively” is deliberately chosen because a parking system that is left unmanaged will quickly be ignored, abused, and become ineffective or problematic. Incorporating





hourly paid parking lots is one particularly effective strategy for promoting turnover in high-demand areas, though it is not the only strategy.

Utilization data collected by this project does not support the need for paid parking options in Carrboro. There are empty parking spaces available in close proximity to high-demand areas during all weekday and weekend periods. Installation of a paid parking system within one or few public parking lots will simply encourage drivers to illegally park in the empty private parking lots or park further away and walk. The likely result is empty parking in high-demand areas and further parking frustration elsewhere.

There is no “trigger” to identify the moment or conditions that a paid parking system is needed. Support for the installation of parking meters will come from the business owners, downtown employees, residents, visitors, and Town government. This support will likely arise from a commonly observed parking problem or recurring challenge that is shared by all user groups and verified by data collected over time. Support for paid parking may also build following a pilot study where a single Carrboro lot is converted to hourly parking. The Rosemary Street lot would be an excellent candidate for this, given its single entry, relatively small size and highly visible location. The public response from this pilot study lot may determine whether additional public lots are feasible for paid parking options.

As downtown Carrboro further develops, and parking demand intensifies to a point where paid parking options could be considered, it is important that parking enforcement initiatives discussed above have been set in motion. In particular, it is vital that the parking citation and appeals procedures have been streamlined and integrated within an electronic parking enforcement software solution. Enforcement of paid parking areas is critical to its success. A paid parking lot provides premium parking to those who are willing to pay for this convenience. Consequently, there is an expectation that this premium parking will be available (less than 85% occupied) when needed.

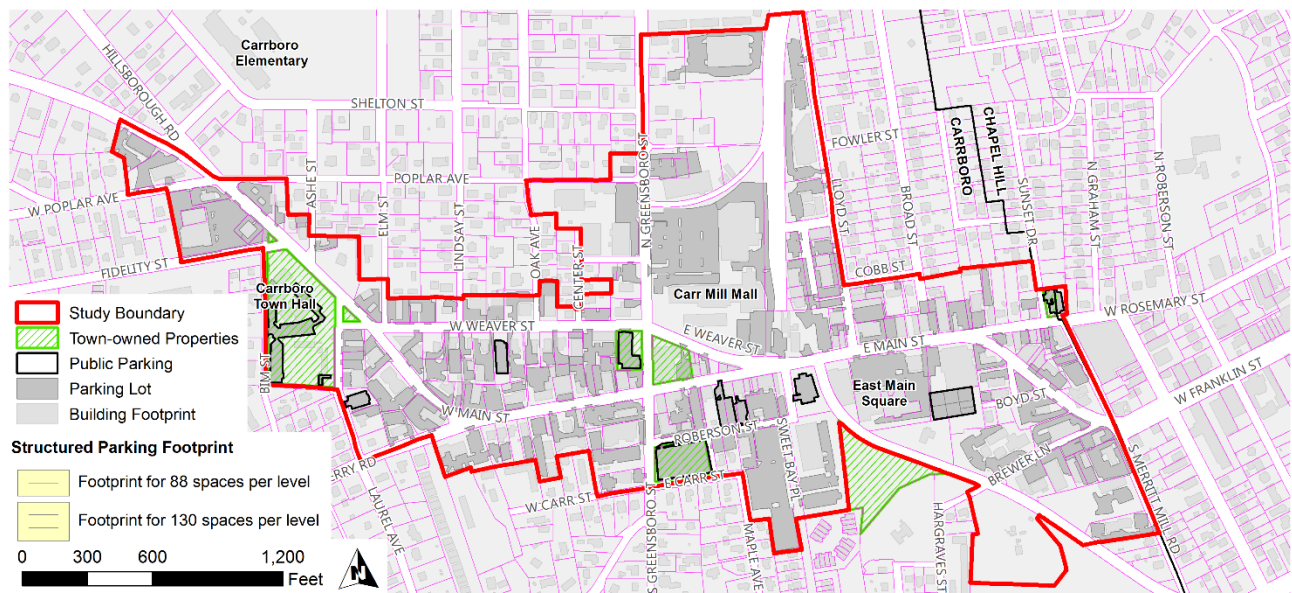
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### **Structured Parking Options**

The Town should plan for longer-term structured parking options, while simultaneously working to delay or avoid the need for such construction through other parking management strategies presented above. The first step is to identify potential sites for a structured parking garage or surface parking lots, and perform a feasibility level analysis (Preliminary Engineering Report). The Town of Carrboro is constrained by available land of reasonable size to support a structured parking deck. Unless private property is to be purchased, the Town of Carrboro has very limited locations where a parking deck could be constructed.

The minimum width for a standard 2-bay parking deck is 120' wide, and a standard 3-bay parking deck is 180' wide. Exceptions can be made to narrow the drive isle and convert to one-way traffic flow, however these exceptions often result in fewer parking spaces per level and a less-efficient overall design. Figure 13 displays two minimum footprints needed to support a structured parking garage in Downtown Carrboro. One footprint will support 88 spaces per level and has two bays of parking. The second footprint will support 130 spaces per level and has three bays of parking. As you may observe, there are very few properties that are large enough to fit such a footprint, and even fewer properties are owned by the Town of Carrboro.

**Figure 13: Approximate Footprint Required for Structured Parking**



Nearly all buildings in downtown are 1-2 stories tall. Each level of a parking garage would be 10-12' high. Assuming a minimal height of 10' and a minimum of three (3) levels, a potential structured parking deck would be taller than any surrounding building other than the East Main Square development.

### Cost of construction, maintenance, and operation

Typical construction costs for surface parking range between \$4,000 and \$10,000 per space, while parking deck construction cost range between \$15,000 and \$24,000 per space (Carl Walker, 2016).

Parking planning studies use \$5,000 per space for surface parking, and \$20,000 per space for structured parking. The actual construction costs will vary depending on the site constraints such as topography, underground utilities and stormwater control devices, as well as labor and material



considerations (fluctuating price of steel or concrete). The existing 275 public parking spaces that are owned by the Town would cost \$1.4 million if they were to be constructed today. Likewise, the 380 leased parking spaces (most of which are structured parking) would cost \$5.6 million if they were to be constructed today. The total value of all public parking assets is estimated to be worth \$7.0 million.

Annual operation and maintenance costs are above and beyond the cost to construct. Operations and maintenance (O&M) include parking management staff, inspecting the structure, making repairs, pressure washing, supplying electricity for lighting, and removing waste costs are also highly variable depending upon the total number of facilities. Annual maintenance costs can average between \$50 for surface parking lots only, to \$200-\$800 per space for structured parking facilities (VTPI, 2016).

Parking and maintenance cost estimate sources:

Carl Walker (2016), Mean Construction Costs, Carl Walker Consulting ([www.carlwalker.com](http://www.carlwalker.com)); at <http://www.carlwalker.com/wp-content/uploads/2016/05/2016-Carl-Walker-Cost-Article.pdf>

Todd Litman (2016), "Transportation Cost and Benefit Analysis II – Parking Costs, VTPI (<http://www.vtpi.org>); at <http://www.vtpi.org/tca/tca0504.pdf>

## Land tradeoffs

Parking accounts for a large portion of any downtown, specifically if surface parking lots are more prevalent than structured parking garages. Utilizing available GIS data resources, VHB performed a summary of the study area to determine the approximate percentage of area that is devoted to parking. This analysis is summarized in Table 14 and Figure 14 below, finding that parking lots and driveways account for 43 acres, which is 30% of the total 141 acres of land.

**Table 14: GIS-Summary of Land Categories within Downtown Carrboro**

Land Categories	SqFt	Acres	% Total
Buildings	1,247,374	28.6	20%
Landscape/Open Space	2,026,271	46.5	33%
Parking/Driveway	1,873,650	43.0	30%
Sidewalks, Roadway Right-of-Way	810,195	18.6	13%
Railroad Right-of-Way	212,834	4.9	4%
<b>Total</b>	<b>6,170,324</b>	<b>141.7</b>	

Note: Area calculated from available GIS datasets.

Square Footage (SqFt) represents 2-dimensional area (building footprint).

Right-of-Way represents area beyond individual property boundaries (parcels).

**Figure 14: Land Categories within Downtown Carrboro**



Constructing new public parking would be a significant investment in land, in addition to the cost of construction discussed in the previous section. A 100-space surface parking lot, for example, would require approximately 33,000 square feet (0.76 acres) of land. There are very few parcels of land within the study area where such a lot could be constructed.

Structured parking (also referred to as a deck or garage) is a viable option for many downtowns that are constrained by land or topography. The same acreage of land is able to support three to five times as many spaces, depending upon the number of levels in the garage. Because structured parking is roughly four times the cost of surface parking, most decks are at least four levels tall. There are two important considerations for structured parking, net gain of spaces and scale of economies. Converting an existing surface parking lot into a structured parking deck involves removing existing parking spaces during construction and yielding a smaller net gain of parking when complete. The overall benefit of a 450 space parking garage should factor in the number of spaces removed (e.g. 75 spaces) for a net gain of +375 spaces by the project. The other consideration is scale of economies, which suggests that smaller parking decks will be less cost-effective than larger parking decks. The rule-of-thumb is to maximize the available site rather than build a certain number of desired spaces. Constructing a stand-alone, four-level, 160-space deck would not be a cost-effective solution, whereas these same 160 spaces incorporated into a mixed-use development that wraps around structured parking would likely be a more-effective use of the available site.

# Implementation

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## Implementation Plan

The purpose of this section is to organize a general plan of action for the Town of Carrboro that is based on stakeholder feedback and professional judgement. Parking initiatives identified below constitute a change to the “Business as Usual” role that the Town has been operating within. [The Town should become a facilitator of shared parking arrangements between adjacent properties](#), relying upon regular parking occupancy data as the basis for any agreements. This approach will have the greatest return on investment, maximizing existing surface parking without the need to construct new spaces.

Public outreach was a significant portion of this planning process, as described earlier. During the June 2016 mid-point public meeting, attendees were presented with several potential parking management strategies and asked to vote for the categories that had the greatest potential benefit on parking. Education, Engineering and Enforcement strategies received the highest number of votes from participants. Engineering scenarios, as they pertained to this meeting, included connecting sidewalks, leasing additional parking from private landowners, as well as constructing new parking.

Action items for the Town to consider have been identified and grouped as near-term and long-term initiatives. Near-term initiatives are looking 1-5 years ahead, while initiatives for the Long-term should begin now and plan for 5-10 years ahead.

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## Near-term

Near-term initiatives are programming for the short-term and seek low-cost, quick implementation improvements that will reduce future parking demand. The goals of these initiatives are to:

- Promote shared parking arrangements between businesses.
- Collect regular parking occupancy data during the peak period.
- Deploy more consistent parking regulatory signs.
- Encourage vehicle turnover in high-demand parking areas.
- Encourage use of low-demand parking areas.
- Encourage the use of alternative transportation modes to reduce future parking demand.

## Long-term

Long-term goals will require some time to develop, or are dependent upon data collection following the near-term programs. The goals of these initiatives are to:

- Coordinate and leverage redevelopment opportunities and identified stakeholders.
- Identify potential sites for a parking deck.
- Discuss Public-Private Partnership options, and potential land swap arrangements.
- Seek a compromise that will benefit parking and businesses.
- Perform a Preliminary Engineering Report (PER) for structured parking.

To support these goals, the parking management strategies identified in the previous report section were organized into a phased 10-year implementation plan (Table 15). It is not necessary for the Town to follow the sequence in a prescriptive manner, but rather use the table below as a suggestion for the types of initiatives to consider within stages of a 10-year process to improve parking. This recommended sequence should be revisited each year based on a continual evaluation of parking demand and utilization patterns.

**Table 15: Recommended Implementation by Year**

Category	Management Strategy	Year									
		1	2	3	4	5	6	7	8	9	10
Education	Wayfinding and regulatory signage										
	Long-term employee parking										
	Walk-times map										
	Alternative transportation mode shift										
Encouragement	Lighting and sidewalk improvements										
	Improved perception of security										
	Bicycle friendly businesses										
	Healthy lifestyles initiative										
Enforcement	Downtown Ambassador Initiative										
	Time Limited Parking										
	Citation and Appeals procedures										
Evaluation	Annual data collection program										
	Online survey										
	Formation of Downtown Parking Board										
	Shared Parking Arrangements										
Engineering	Lot Design and Restriping										
	Structured Parking Options										
	Cost of construction, O&M										
	Land tradeoffs										

Near-term Initiative

Long-term Initiative





# Town of Carrboro

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

## Agenda Item Abstract

**File Number:** 17-039

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**Agenda Date:** 2/21/2017

**File Type:** Agendas

**In Control:** Board of Aldermen

**Version:** 1

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### **TITLE:**

Discuss Options for Shared Rosemary Parking Lot

**PURPOSE:** The purpose of this item is to discuss options for management and maintenance of the shared parking lot at Rosemary and Sunset.

**DEPARTMENT:** Economic and Community Development

**CONTACT INFORMATION:** Annette D. Lafferty, AICP Economic and Community Development Director

**INFORMATION:** The Town of Chapel Hill has requested that Town of Carrboro allow them to take over management and maintenance of a public parking lot that is currently owned jointly by Carrboro and Chapel Hill. The lot is located at the corner of Rosemary and Sunset; it is currently managed and maintained by Carrboro. Chapel Hill has acquired the right to lease a parcel immediately adjacent (east) to this lot and would like to expand and develop the new lot and redevelop the existing shared Rosemary lot, consistent with other parking lots that are metered in downtown Chapel Hill.

The new lot being created by Chapel Hill (see attachment 1) contains 23 spaces, 12 of which are being reserved as private parking and leased back to the owner of the lot, 7 spaces are being created for monthly permit only parking (\$95/mo) and 5 new, including 1 handicap, paid public parking spaces. Chapel plans to meter the 13 existing public spaces that are located on the Chapel Hill side of the Rosemary lot and have offered to meter the entire lot.

Town staff has identified four possible options for this lot.

- 1) Do nothing and leave the spaces as they are, unmarked.
- 2) Install signs on the Carrboro spaces stating that the spaces are reserved for Carrboro businesses and their customers only with no leases.
- 3) Install signs and lease the spaces to Carrboro businesses and their employees for \$350 annual fee for their private use.
- 4) Allow Chapel Hill to number and add the spaces to their parking management system, but keep them free and enforce time limits; 4a) or don't enforce time limits.

**FISCAL & STAFF IMPACT:** Fiscal & staff impact will depend on policy direction taken by the Board.

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**Agenda Date:** 2/21/2017

**File Type:**Agendas

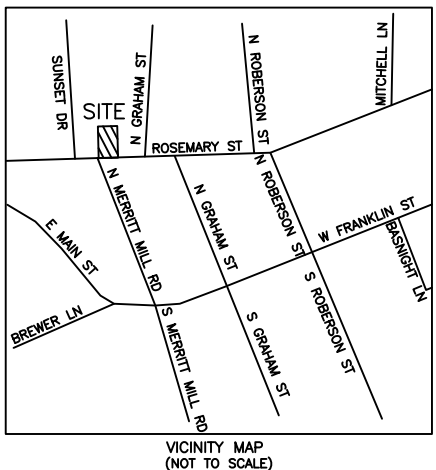
**In Control:** Board of Aldermen

**Version:** 1

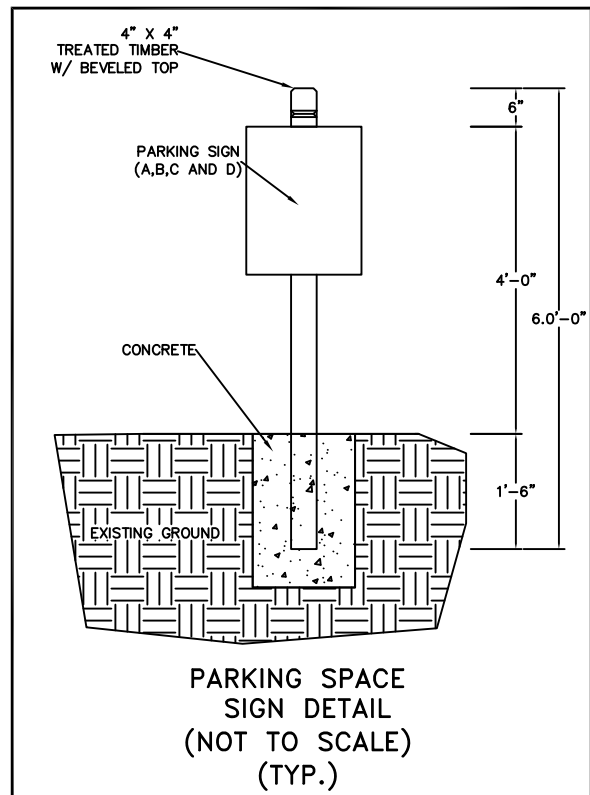
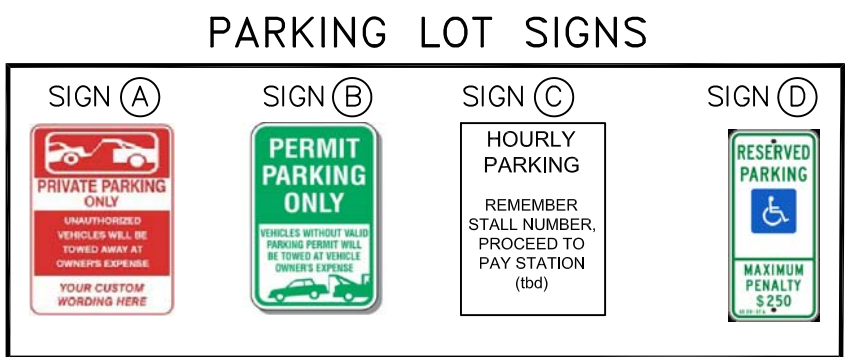
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**RECOMMENDATION:** Staff recommends the Board discuss options.



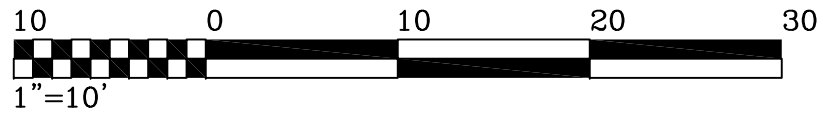


PRELIMINARY PLAT  
NOT FOR RECORDING, SALES  
OR CONVEYANCE.  
THIS DOCUMENT WAS PREPARED FOR  
ILLUSTRATION PURPOSES ONLY.  
FOR FURTHER INFORMATION:  
CONTACT THE ENGINEER/SURVEYOR  
AS NOTED.

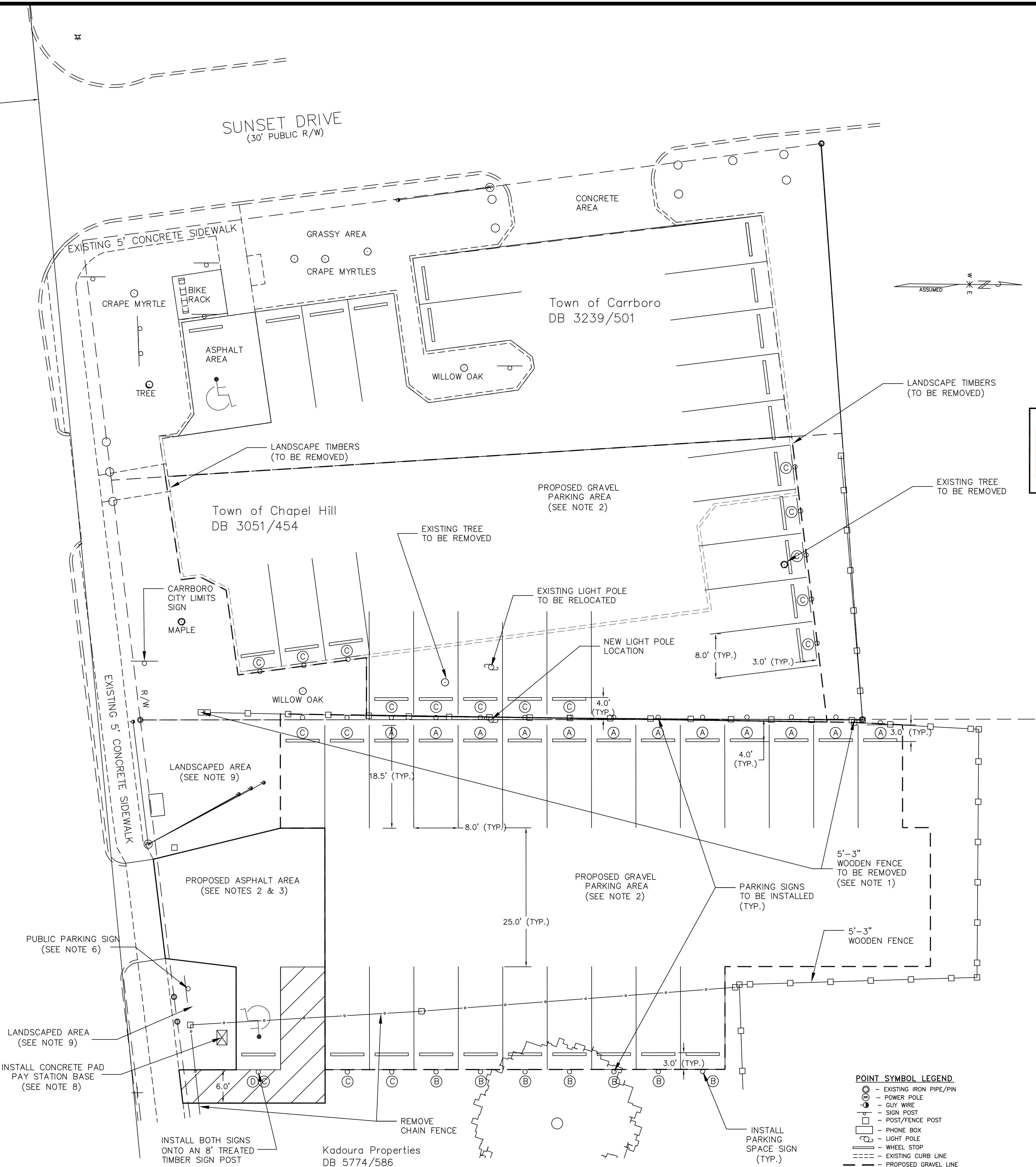


- NOTES:
1. REMOVE APPROXIMATELY 118 LF OF EXISTING 5' WOODEN FENCE. CONTRACTOR SHALL ENSURE THE NEW FENCE END IS SUPPORTED AND TIES INTO THE REMAINING EXISTING FENCE.
  2. INSTALL ABC STONE TO A MINIMUM DEPTH OF 4" OVER THE ENTIRE PARKING AREA (INCLUDING PROPOSED ASPHALT AREA) AS SHOWN AND AS DIRECTED BY THE ENGINEER. PRIOR TO ABC STONE INSTALLATION, CONTRACTOR SHALL SPRAY CONSTRUCTION AREA WITH ROUNDUP OR APPROVED HERBICIDE.
  3. INSTALL 3" OF ASPHALT SURFACE COURSE AT ENTRANCE AREA, ACCESSABILITY PARKING SPACES AND WALKWAY AS SHOWN. CONTRACTOR IS RESPONSIBLE FOR ENSURING ACCESSABILITY PARKING AND WALKWAY MEET CURRENT ADA REQUIREMENTS.
  4. INSTALL WHEEL STOPS AT PARKING SPACES AS DIRECTED BY THE ENGINEER.
  5. INSTALL PAVEMENT MARKINGS ON ASPHALT AREA TO DESIGNATE ACCESSIBLE PARKING AND WALKWAY AS DIRECTED BY THE ENGINEER.
  6. INSTALL PUBLIC PARKING LOT SIGN AS DIRECTED BY THE ENGINEER. SIGN WILL BE SUPPLIED BY TOCH PARKING SERVICES.
  7. INSTALL PARKING SIGNS AT EACH PARKING SPACE AS SHOWN AND DIRECTED BY THE ENGINEER.
  8. INSTALL CONCRETE PAD FOR PLACEMENT OF PAY STATION METER BASE AS DIRECTED BY THE ENGINEER. CONTACT BRENDA JONES, PARKING SUPERINTENDENT, PARKING SERVICES (919)968-2835 FOR CONCRETE PAD THICKNESS AND DIMENSIONS.
  9. REMOVE APPROXIMATELY 6" OF EXISTING SOIL FROM THE LANDSCAPED AREAS AND REPLACE WITH 6" OF TOPSOIL AS DIRECTED BY THE ENGINEER.
  10. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE DEPTH OF ALL EXISTING UTILITIES WHICH MAY BE ENCOUNTERED DURING CONSTRUCTION. THE CONTRACTOR SHALL HAVE NO CLAIMS FOR DELAY OR EXTRA COMPENSATION AS A RESULT OF CONFLICTS WITH SAID UTILITIES.

- POINT SYMBOL LEGEND
- EXISTING IRON PIPE/PIN
  - POWER POLE
  - GUY WIRE
  - SIGN POST
  - POST/FENCE POST
  - PHONE BOX
  - LIGHT POLE
  - WHEEL STOP
  - EXISTING CURB LINE
  - PROPOSED GRAVEL LINE
  - PROPOSED ASPHALT LINE
  - EXISTING SIDEWALK LINE
  - PARKING LOT SIGN DESIGNATION
  - BOLLARD
  - FIRE HYDRANT



WEST ROSEMARY STREET  
(60' PUBLIC R/W)



Town of  
*Chapel Hill*  
ENGINEERING AND DESIGN SERVICES



No.	Revision/Issue	Date

TOWN OF CHAPEL HILL  
PUBLIC WORKS DEPARTMENT  
ENGINEERING AND DESIGN SERVICES DIVISION  
6850 MILLHOUSE RD  
CHAPEL HILL, NC 27516

Project Name and Address  
PROPOSED PARKING IMPROVEMENTS  
CARRBORO-CHAPEL HILL PARKING LOT  
ROSEMARY ST  
Chapel Hill, NC

Project Corrhilladditionfinal.dwg	Sheet 1
Date 09/12/16	
Scale 1" = 20'	





# Town of Carrboro

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

## Agenda Item Abstract

**File Number:** 17-041

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**Agenda Date:** 2/21/2017

**File Type:** Agendas

**In Control:** Board of Aldermen

**Version:** 1

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### **TITLE:**

Capital Improvements Plan, FY 2017-18 through FY 2021-22

**PURPOSE:** To present to the Board of Aldermen a proposed 5-year Capital Improvements Plan (CIP),

**CONTACT INFORMATION:** Arche McAdoo, 918-7439

**INFORMATION:** Attachment B is the proposed Capital Improvements Plan (CIP) for FY 2017-18 through FY 2021-22. This is a planning tool used to identify the Town's immediate and long-term capital needs. It identifies needed capital investments for property, plant or equipment acquisitions and renovations to implement the Board of Aldermen's vision and strategic priorities for the Town. The CIP does not make any appropriation of funds for a particular project. Capital projects are funded by the Board of Aldermen in the annual general fund budget or through adoption of a Capital Project Ordinance.

Town staff develops and maintains a projection of capital projects for the next five years based on previous capital plans, community needs assessments, and projects approved by the Board of Aldermen.

Projects in the CIP fall into one of the following classifications:

- Infrastructure projects (e.g., purchase, construction or renovation of buildings, purchase of land, construction of parks and greenways, sidewalk construction, etc.) that cost \$100,000 or more and require several years for completion.
- Vehicles and Equipment replacements that cost \$30,000 or more per unit. As a general rule, vehicles with less than 100,000 miles will not be replaced unless it is determined to be a "lemon" and annual repairs in a two year period exceed the cost of a new vehicle. Beginning in 2016 all vehicles for purchase must reflect fuel efficiencies as identified in the Town's Strategic Energy and Climate Protection Plan.
- Information Technology (IT) projects which cost \$50,000 or more that are designed to increase or provide new technology capacity. IT projects related to software replacements, upgrades or

maintenance costs are provided for in the annual operating budget.

- Storm Water Management projects to address mandated federal and state storm water compliance requirements, as well as flooding mitigation throughout the Town due to the frequency and severity of rain storms.

The total cost of the proposed CIP for FY 2017-18 through FY 2021-22 is estimated at \$51.8 million. Currently funded projects total \$9.7 million or 19% of the total. New project requests or current projects requiring additional funds for completion total \$42.1 million or 81%.

Several projects are expected to be completed in FY 2016-17 and no additional funding above the current appropriation is anticipated:

- Century Center HVAC
- Homestead-Chapel Hill High School Multi-Use Path
- Rogers Road Remediation
- Rogers Road Sidewalk
- Town Commons

Four of the current projects are in the conceptual or design stage and will require an additional estimated \$7.1 million over the next five years for project completion.

- Jones Creek Greenway
- Martin Luther King Jr. Park
- Morgan Creek Multi-Use Path
- South Greensboro Sidewalk

There are five major new projects, resulting from the initial draft of the Facilities Assessment and Space Needs Study. The estimated cost of these projects total \$31.2 million and include: 1) 203 S. Greensboro Street Development, 2) Town Hall renovations, 3) Century Center renovations, 4) Public Works Facility renovations, and 5) Fire Station #1 renovations.

In terms of anticipated revenues for CIP projects, the mix of funding remains essentially unchanged. Additional intergovernmental revenues have been acquired or identified that will require additional Town revenues as a match for the additional revenues. See Attachment B for summary of total costs by category and identified funding sources.

## **CURRENT PROJECTS**

Attachment C shows the status of each current project (i.e. funds have been appropriated by the Board in whole

or part for the project).

## **STOMWATER MANAGEMENT**

In addition to the mandated retrofits under current projects, the Town is exploring options to address a number of flood prone areas in Town. One option under review is the possible creation of a storm water utility.

## **VEHICLES/EQUIPMENT**

The schedule of vehicles and equipment replacement is shown in Attachment E. As in the past, all vehicles and/or equipment for replacement will be re-prioritized during development of the FY 2017-18 operating budget. The Town does not intend to add to the current fleet of vehicles and equipment.

**FISCAL AND STAFF IMPACT:** The Town's current debt portfolio consist of general obligation bonds for construction of sidewalks and greenways; installment financing for fire station #2, and vehicle and equipment lease purchases. The Town's debt service through FY 2021-22 totals \$3.3 million. Five capital projects totaling \$31.4 million have been proposed that will require debt financing over the next five years. These are:

1. 203 S. Greensboro Development (new space)	\$14,325,000
2. Town Hall Renovations	\$ 6,282,000
3. Century Center Renovations	\$ 5,550,000
4. Public Works Facility Renovations	\$ 3,750,000
5. Fire Station #1 Renovations	\$ 1,250,000

If the Town were to undertake the proposed debt financing for the projects noted above, total debt service for FY 2017-18 through FY 2021-22 would increase to \$13.2 million.

The Town's current debt service as a percentage of the FY 2016-17 operating budget is estimated to be 4.9%. Without additional debt, this ratio will decrease to 2.4% by FY 2021-22. Again, if all of the proposed projects needing financing were undertaken by the Town, debt service as a percent of the operating budget would increase to 13.9% in FY 2021-22, and exceed the Town's established goal of 12%. To meet the Town's established goal of 12% will require that the scheduling of projects be reevaluated and possibly pushed out further in the future or implemented in stages if possible.

**RECOMMENDATION:** That Board of Aldermen is requested to review the attached Capital Improvements Plan and make suggestions or changes, and adopt the attached resolution.

**RESOLUTION TO ADOPT THE RECOMMENDED CAPITAL IMPROVEMENTS PROGRAM FOR FY  
2017-18 THROUGH 2021-22**

WHEREAS, the Town of Carrboro recognizes that a Capital Improvements Program enables staff and the Board of Aldermen to plan for future capital needs and investments necessary to provide quality services to residents; and,

WHEREAS, the Capital Improvements Program is a five year planning tool designed to address the Town's immediate and long-term capital needs with regards to: 1) maintaining the existing infrastructure in order to protect the Town's investments; 2) expanding the Town's tax base in a way that will benefit both future and current citizens; 3) complying with state and federal mandates; 4) incorporating energy and climate protection strategies; 5) providing Town services in the most efficient and safe manner; and, 6) managing and encouraging orderly implementation of Town adopted needs assessments, strategic and program master plans (e.g., Vision 2020, Downtown Visioning Plan, Downtown Traffic Circulation Study, Recreation and Parks Master Plan, etc.)

WHEREAS, the recommended FY 2017-18 through FY 2021-22 Capital Improvements Program has been updated from last year's; and,

WHEREAS, funds for capital projects may be appropriated in the annual operating budget or through project ordinances adopted by the Board;

THEREFORE BE IT RESOLVED that the Town of Carrboro Board of Aldermen has received the recommended Capital Improvements Program for FY 2017-18 through FY 2021-22 and adopts it with the following changes:

- 1.
- 2.
- 3.
- 4.





# **TOWN OF CARRBORO, NORTH CAROLINA**

## **CAPITAL IMPROVEMENTS PLAN**

**FY 2017-18 THROUGH FY 2021-22**

**TOWN OF CARRBORO, NORTH CAROLINA  
CAPITAL IMPROVEMENTS PLAN  
FY 2017-18 THROUGH FY 2021-22**

**BOARD OF ALDERMEN**

Lydia Lavelle, Mayor  
Michelle Johnson, Mayor Pro-Tempore  
Bethany Chaney  
Jacquelyn Gist  
Randee Haven-O'Donnell  
Damon Seils  
Sammy Slade

**TOWN MANAGER**

David L. Andrews, ICMA-CM

**DEPARTMENT HEADS**

Cathy Dorando, Town Clerk  
Carol Dorsey, Human Resources  
James Freeman, Public Works Director  
Walter Horton, Police Chief  
Anita Jones-McNair, Recreation and Parks Director  
Annette Lafferty, Economic & Community Development Director  
Arche L. McAdoo, Finance Director  
Patricia McGuire, Planning Director  
Andy Vogel, Information Technology  
Susanna Williams, Fire Chief



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## **Message from the Manager Capital Improvements Plan FY 2017-18 through FY 2021-22**

February 17, 2017

Dear Mayor and Board of Aldermen,

This is the most ambitious Capital Improvements Plan (CIP) presented to you during my tenure. It includes a major development at 203 S. Greensboro Street with an estimated cost of \$14.3 million. Based on the draft Facilities Assessment and Space Needs Study, the CIP also includes \$17 million to address long overdue renovations at Town Hall, Century Center, Public Works Facility, and Fire Station #1.

Our goal with the CIP is to clearly identify and describe the capital project priorities for the Town over the next five years. Capital projects are required to address one of the Board's six strategic goals:

1. Maintaining the existing infrastructure in order to protect the Town's investments
2. Expanding the Town's tax base in a way that will benefit both current and future citizens
3. Complying with state and federal mandates
4. Incorporating energy and climate protection strategies
5. Providing Town services in the most efficient, safe and quality manner
6. Managing and encouraging orderly implementation of Town adopted needs assessments, strategic and program master plans (e.g., Vision 2020, Downtown Visioning Plan, Downtown Traffic Circulation Study, Recreation and Parks Master Plan, etc.)

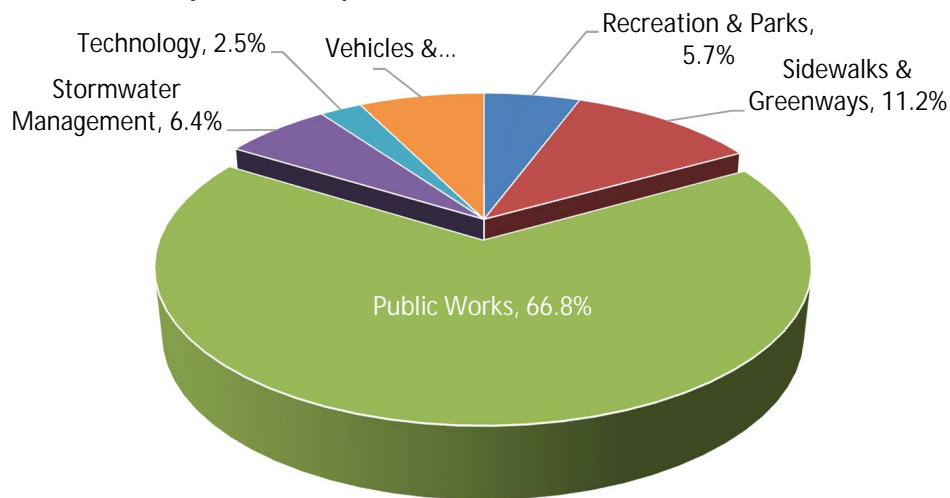
The Board's ultimate goal for the Town is to create and maintain Carrboro as a sustainable community that is a highly desirable place to live, with emphasis on quality of life policies such as walkability, environmental protection, recreation and local economic development.

As noted previously, the CIP is a plan, not an appropriation, to address the Town's capital priorities. No budget appropriations are made in the CIP. Capital projects are funded by the Board in the annual general fund budget or through adoption of a Capital Project Ordinance. The CIP is prepared bi-annually and updated annually or as necessary.

### **Overall Cost**

The total cost of the CIP for FY 2017-18 through FY 2021-22 is estimated at \$51.8 million. Current projects total \$9.7 million or 19% of the total. New project requests or current projects requiring additional funds for completion total \$42.1 million or 81%. The graphic below shows the mix of capital projects by functional area.

## Total Capital Improvements Plan \$51.8 Million



In the past we have used “Storm Water Management” to show retrofits required of the Town to address the Jordan Lake Rules and other regulatory requirements. Due to the frequency and intensity of recent storms that have added to flooding of properties throughout the Town, we have included flooding mitigation projects with storm water projects in anticipation of the formation of a Storm Water Utility Enterprise Fund beginning in FY 2017-18. The utility will provide a stable and consistent source of funding to adequately address storm water and flooding issues.

The cost for replacement of Vehicles and Equipment over the next five years total \$3.2 million compared to \$6.4 million in last year’s CIP. Part of the reason for this decrease is that we modified the replacement criteria to include other operating factors in addition to the age and mileage of vehicles (see Appendix C). The actual vehicles and equipment to be acquired in any given year will continue to be dependent upon the Town’s financial condition and debt tolerance.

### **Funding**

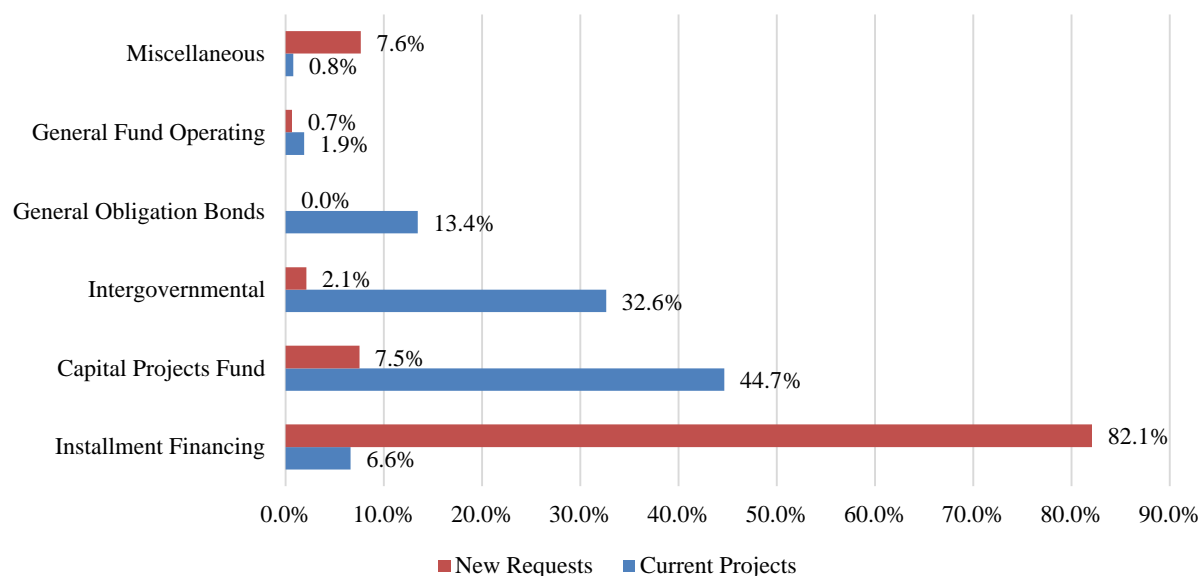
Below are the proposed sources of funding for the \$51.8 million CIP through 2021-22.

Installment Financing	\$	35,255,257
Capital Projects Fund		7,503,774
Intergovernmental		4,052,035
General Obligation Bonds		1,303,635
General Fund Operating		457,150
Miscellaneous (Storm Water Utility)		<u>3,299,642</u>
<b>TOTAL</b>	<b>\$</b>	<b>51,871,493</b>

For many of the current capital projects, the Town has been able to assign fund balance from the general fund to the Capital Reserve Fund and eventually appropriate them for specific capital projects. As long as the fund balance in the general fund exceeds 35%, the Town Manager may assign funds for future capital project needs.

Historically, the Town has limited the use of debt financing for specific capital projects. For example, general obligation bonds were issued for sidewalks and greenways, bank financing for fire station #2, and lease-purchases for vehicle and equipment replacements annually. Clearly, increased debt levels will impact the Town's overall financial condition and annual operating budget. Installment debt financing for current projects comprise 6.6% of all capital funds. Through FY 2021-22 installment financing is projected to be 82.1% of capital funding. General obligation bonds issued in 2013 currently comprise 13.4% of funding sources. Going forward, there are no plans for a general obligation referendum. Intergovernmental revenues are expected to shift from 32.6% to 2.1% of all financing sources through FY 2021-22. The challenge for the Town will be to provide matching funds for such revenues. General Fund operating funds will comprise 29.7% for capital reserves, operating and miscellaneous.

**Funding Sources - Current Projects vs New Projects  
FY 2017-18 to FY 2021-22**



Undertaking the proposed capital projects through FY 2021-22 will present many challenges and decision points. Along with proper and appropriate design of capital projects, the Town will need to balance funding capital projects with the continuation of current level services to residents. With a heavy reliance on residential property tax revenues, the Town will need to continue to explore additional revenue sources (e.g. increased property tax rate, prepared meals tax, increase fees, impact fees, etc.).

The Town has established high levels of service delivery for the citizens. Implementation of the proposed capital projects through FY 2021-22 will provide the necessary infrastructure and create an environment for continuation of high performance levels in delivering services to residents.

Sincerely,

David L. Andrews, ICMA-CM  
Town Manager

## INTRODUCTION

The Capital Improvement Plan (CIP) is a planning tool that seeks to develop a plan for meeting the Town's immediate and long-term capital needs. It identifies needed capital investments for property, plant or equipment acquisitions and renovations to implement the Board of Aldermen's vision and strategic priorities for the Town. The Board's ultimate goal is to create and maintain Carrboro as a sustainable community that is a highly desirable place to live, with emphasis on quality of life policies such as walkability, environmental protection, recreation and local economic development.

No budget appropriations are made in the CIP. Capital projects are funded by the Board in the annual general fund budget or through adoption of a Capital Project Ordinance. Adjustments for project costs may be made each year during development of the annual operating budget. The CIP is prepared bi-annually and updated annually or as necessary.

Projects in the CIP fall into one of the following categories:

- Infrastructure projects (e.g., purchase, construction or renovation of buildings, purchase of land, construction of parks and greenways, sidewalk construction, etc.) that cost \$100,000 or more and require several years for completion.
- Vehicles and Equipment replacements that cost \$30,000 or more per unit. As a general rule, vehicles with less than 100,000 miles will not be replaced unless it is determined to be a "lemon" and annual repairs in a two year period exceed the cost of a new vehicle. Beginning in 2016 all vehicles for purchase must reflect fuel efficiencies as identified in the Town's Strategic Energy and Climate Protection Plan.
- Information Technology (IT) projects which cost \$50,000 or more that are designed to increase or provide new technology capacity. IT projects related to software replacements, upgrades or maintenance costs are provided for in the annual operating budget.
- Storm Water Management projects to address mandated federal and state storm water compliance requirements, as well as flooding mitigation throughout the Town due to the frequency and severity of rain storms.

Project costs are updated periodically depending on the type of project. For example: street resurfacing costs are adjusted each year due to the fluctuation of petroleum costs; sidewalk costs are updated based on a cost per foot; new construction and renovations are calculated on a square foot basis.

Funds appropriated in the annual operating budget for study or evaluation of facilities and infrastructure that are less than \$50,000 are not included as part of the CIP project cost.

Capital projects are organized under one of the following functional categories:

1. Recreation and Parks

2. Sidewalks and Greenways
3. Public Works
4. Storm Water Utility
5. Technology
6. Vehicles and Equipment

The table below is a summary of capital projects, current and new requests by functional area and estimated revenues.

**Summary of Capital Improvements Plan  
FY 2018 through FY 2022**

PROJECT COSTS	FUNDING	PROJECT REQUESTS					TOTAL	TOTAL
	TO DATE	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	REQUEST	COST
Recreation & Parks	1,557,870	1,391,146	-	-	-	-	1,391,146	2,949,016
Sidewalks & Greenways	4,671,169	38,413	1,123,006	-	-	-	1,161,419	5,832,588
Public Works	1,734,007	7,940,000	6,985,000	6,582,000	5,850,000	5,550,000	32,907,000	34,641,007
Stormwater Management	80,000	89,443	973,036	893,290	834,049	433,807	3,223,625	3,303,625
Technology	1,022,000	195,000	-	80,000	-	-	275,000	1,297,000
Vehicles & Equipment	642,180	726,872	744,114	680,253	354,646	700,192	3,206,077	3,848,257
<b>TOTAL PROJECT COSTS</b>	<b>9,707,226</b>	<b>10,380,874</b>	<b>9,825,156</b>	<b>8,235,543</b>	<b>7,038,695</b>	<b>6,683,999</b>	<b>42,164,267</b>	<b>51,871,493</b>
							38,958,190	
<b>PROJECT REVENUES</b>								
Capital Project Fund	4,336,550	1,601,149	666,075	300,000	300,000	300,000	3,167,224	7,503,774
Capital Reserves - Matching Fund	-						-	-
General Fund Operating Funds	182,150	195,000	-	80,000	-	-	275,000	457,150
GO Bonds	1,303,635						-	1,303,635
Installment Financing	642,180	8,366,872	7,429,114	6,962,253	5,904,646	5,950,192	34,613,077	35,255,257
Intergovernmental	3,166,694	128,410	756,931			-	885,341	4,052,035
Other (e.g., PIL, Donations, etc.)	76,017	89,443	973,036	893,290	834,049	433,807	3,223,625	3,299,642
<b>TOTAL REVENUES</b>	<b>9,707,226</b>	<b>10,380,874</b>	<b>9,825,156</b>	<b>8,235,543</b>	<b>7,038,695</b>	<b>6,683,999</b>	<b>42,164,267</b>	<b>51,871,493</b>
				<i>Without Vehicles and Equipment</i>			38,958,190	

## CURRENT PROJECTS

The Board of Aldermen has appropriated \$7.7 million for twenty-one (21) capital projects that are currently in progress. Below is a list of these projects. For a status report of each project, see Appendix A.

### RECREATION AND PARKS

Century Center HVAC	\$ 180,000
Martin Luther King Park	150,000
Anderson Park Pavilion & Fence	156,880
Town Commons	1,070,990
Total Recreations & Parks	<u>\$ 1,557,870</u>

### PUBLIC WORKS

Street Resurfacing	\$ 551,000
Rogers Road Remediation	1,020,445
Smith Level Road	62,562
LED Street Lights	100,000
Total Public Works	<u>\$ 1,734,007</u>

### SIDEWALKS AND GREENWAYS

Homestead-CHHS MUP	\$ 1,253,130
Jones Creek Greenway	420,000
Morgan Creek MU Path	1,521,471
Rogers Road Sidewalk	1,371,568
South Greensboro Sidewalk	105,000
Total Sidewalks & Greenways	<u>\$ 4,671,169</u>

### STORMWATER MANAGEMENT

Anderson Park Retrofit	\$ 25,000
MLK Retrofit	15,000
Morgan Creek Retrofit	40,000
Storm Water Management	<u>\$ 80,000</u>

### VEHICLES AND EQUIPMENT

<u>\$ 642,180</u>
-------------------

### TECHNOLOGY PROJECTS

Permitting Software	\$ 230,000
Police Body Worn Cameras	91,000
Rogers Road Conduit	155,000
Public Safety Radio Upgrades	546,000
Total Technology Projects	<u>\$ 1,022,000</u>

Several projects are expected to be completed in FY 2016-17 and no additional funding above the current appropriation is anticipated:

- Century Center HVAC
- Homestead-Chapel Hill High School Multi-Use Path
- Rogers Road Remediation
- Rogers Road Sidewalk
- Town Commons

Four of the current projects are in the conceptual or design stage and will require an additional estimated \$7.1 million over the next five years for project completion.

- Jones Creek Greenway
- Martin Luther King Jr. Park
- Morgan Creek Multi-Use Path
- South Greensboro Sidewalk

The Town continues to maintain its road infrastructure with a planned 15-year cycle street resurfacing program. The Town sets aside funds in Capital Project Reserve each year for street re-surfacing and issues a paving contract every two years. Currently there is \$551,000 appropriated for street re-surfacing.

Town staff continues to work on energy and climate protection to identify, evaluate and plan for implementation of energy efficiency strategies in Town facilities and infrastructure. The project to replace street lights with LED lights is on hold pending decisions by Duke Power and North Carolina Utility Commission.

Evaluation of Century Center HVAC system has been completed and installation work should be completed in FY 2016-17. Energy efficiency measures have been included in the new installation work. Project is scheduled for completion in FY 2017-18.

The study of Town Hall infrastructure for more effective use of finished and unfinished space was postponed from its original anticipated start date in FY 2015-16. Consultant was hired in FY 2016-17 to undertake this study which was expanded to cover all Town facilities (i.e. Town Hall, Century Center, Public Works Facility, and Fire Stations). Recommendations from this study have been included in the CIP under New Capital Project Requests.

### **NEW CAPITAL IMPROVEMENT PROJECT REQUESTS**

Twenty new projects, excluding vehicles and equipment, with a total of \$42.1 million have been added to the CIP through FY 2021-22. Three of these involve projects that have previously been funded for design, and will now require additional appropriation for project completion.

Martin Luther King, Jr. Park will need \$1.2 million for construction; S. Greensboro Street Sidewalk will need \$1.0 million for construction; and Storm Water Utility will need \$3.2 million over the next five years to construct retrofits and address flood remediation.

New projects resulting from recommendations of the Facilities Assessment and Needs Study total \$31.2 million and includes:

- 203 S, Greensboro Development      \$14.3 million
- Town Hall Renovations      \$6,.2 million
- Century Center Renovations``      \$5.5 million
- Public Works Facility Renovations      \$3.7 million
- Fire Station #1 Renovations      \$1.5 million

See Appendix B for a description of new CIP projects and financing needs through FY 21-22.

### **Storm Water Utilities**

Over the next five years we estimate the Town will need \$3.2 million to address storm water and flooding issues. In order to establish a permanent funding source, the Town is considering the formation of a Storm Water Utility Enterprise Fund beginning in FY 2017-18. This Fund could be funded via establishment of a storm water fee or dedication of a certain percentage of the



property tax rate.

### **Vehicles and Equipment**

The cost for replacement of Vehicles and Equipment over the next five years total \$3.2 million compared to \$6.4 million in last year's CIP. Part of the reason for this decrease is that we modified the replacement criteria to include other operating factors in addition to the age and mileage of vehicles (see Appendix C). See Appendix D for a schedule of vehicles and equipment to be replaced over the next five years. The actual vehicles and equipment to be acquired in any given year will continue to be dependent upon the Town's financial condition and debt tolerance.

### **Transportation Projects**

The Town has received a number of federal and state highway transportation grants to help fund greenways, multi-use paths, sidewalks and other roadway infrastructure. These grants require a local match. For informational purposes, below is a list of Transportation Projects where funding has been approved or earmarked for certain Town projects by the MPO or state DOT that will require a local match.

	<b><u>Fiscal Year</u></b>	<b><u>Program</u></b>	<b><u>Federal/State Amount</u></b>	<b><u>Local Match Amount</u></b>	<b><u>Total Cost</u></b>
S. Greensboro Street Sidewalk					
Design	FY 2017	STPDA	\$ 84,000	\$ 21,000	\$ 105,000
Construction	FY 2017	TBD	\$ 437,240	\$ 87,448	\$ 524,688
Construction	FY 2019	CMAQ	\$ 440,000	\$ 110,000	\$ 550,000
<b>Total Project Cost</b>			<b>\$ 961,240</b>	<b>\$ 218,448</b>	<b>\$ 1,179,688</b>
Jones Ferry Road Sidewalk	FY 2021	STPBG	\$ 448,869	\$ 112,217	\$ 561,086
Estes Drive Sidewalks & Bike Lanes	FY 2021	STPBG	\$ 1,063,803	\$ 212,761	\$ 1,276,564
Barnes Street Sidewalk	FY 2022	STPBG	\$ 232,907	\$ 58,227	\$ 291,134
<b>TOTAL</b>			<b>\$ 2,706,819</b>	<b>\$ 601,653</b>	<b>\$ 3,308,472</b>

As the design for these projects are completed and Municipal Agreements are executed, the CIP will be revised to reflect the addition of these projects.

## **FINANCIAL HEALTH OF THE TOWN**

Overall, the Town's financial health is good with General Fund unassigned fund balance of 53.4% of annual expenditures at June 30, 2016. Total fund balance for all funds in 2016 was \$15.7 million or 78.8% of total General Fund expenditures. Property taxes and local sales taxes comprise 75% of the Town's revenue sources. The remainder comes from intergovernmental revenue, fees and permits, and various other revenue sources. Revenues over the past seven years have grown roughly 2.9% compound annual growth rate. Assets and deferred outflows of resources exceeded liabilities and deferred inflows of resources (net position) by \$38.0 million. The Town maintained its AAA bond rating with Standard and Poor's; and Aa1 by Moody's.

All expenditures were less than the final budget at June 30, 2016, and were 1.7% less than the prior year. Salaries, wages, health insurance, and other employee benefits represent more than half (57%) of Town expenses. Transportation expenses have increased at a compound actual growth rate of 6.9%.

The Board of Aldermen has adopted a Fund Balance policy to maintain a General Fund unassigned fund balance within a range of 22.5% to 35% of budgeted appropriations. When the General Fund unassigned fund balance exceeds 35%, the Town Manager may set aside an amount in assigned fund balance for transfer to Capital Reserves Fund for specific future capital projects. Should the unassigned fund balance in the General Fund fall below 20%, the Town Manager must develop and implement a plan to re-build the balance to 22.5% within one year.

### **IMPACT ON OPERATING BUDGET**

The CIP planning process also seeks to assess the potential impact of the proposed capital projects on the Town's overall financial condition and annual operating budget. Of particular concern is debt financing and the Town's ability to meet future debt obligations.

The types of debt instruments available for the Town include: general obligation bonds, limited obligation bonds, anticipation notes, revenue bonds, and lease-installment financings, or any other financing instrument allowed under North Carolina statutes. The Town evaluates each type of debt and strives to use the least costly and most appropriate form of financing for capital projects.

The Town's current debt portfolio consist of general obligation bonds for construction of sidewalks and greenways; installment financing for fire station #2, and vehicle and equipment lease purchases. The Town's debt service through FY 2021-22 totals \$3.3 million. Five capital projects totaling \$31.4 million have been proposed that will require debt financing over the next five years. These are:

1. 203 S. Greensboro Development (new space)	\$14,325,000
2. Town Hall Renovations	\$ 6,282,000
3. Century Center Renovations	\$ 5,550,000
4. Public Works Facility Renovations	\$ 3,750,000
5. Fire Station #1 Renovations	\$ 1,250,000

To get a longer term, (i.e. 20 years, fixed-principal), the 203 S. Greensboro Development may be financed by issuing limited obligation bonds with assumed interest rate of 3.0%. It is anticipated that this debt would need to be issued in the spring of FY 2017-18 with first principal and interest due in FY 2018-19.

All other debt would be in the form of installment financing for term of 15 years with fixed-principal at 3.5% interest with issuance schedule as follows:

Town Hall Renovations	FY 2019-20
Century Center Renovations	FY 2020-21

Public Works Renovations FY 2021-22  
Fire Station #1 Renovations FY 2021-22

For vehicles and equipment, installment lease purchases total \$1.8 million through FY 2021-22 with terms from five to seven years at an assumed annual rate at 3% or less. The actual financing rate for the past three years has been less than 2%.

If the Town were to undertake the proposed debt financing as noted above, total debt service for FY 2017-18 through FY 2021-22 would increase from \$4.9 million to \$13.2 million.

As we plan to undertake debt financing, we need to be cognizant of the fact that the Local Government Commission (LGC) and credit rating agencies monitor debt capacity or burden of local municipalities. The LGC measures debt capacity against outstanding principal to assessed valuation, debt per capita, and debt as percentage of operating expenses. These outcome measures are based on population size.

The LGC calculates the debt to assessed valuation and per capita ratio for each jurisdiction and determines whether the ratio as being low, average, or high. Below is the LGC's outstanding principal debt to assessed valuation and per capita ratios for municipalities at June 30, 2015 with population 10,000 – 24,999.

	<u>Low</u>	<u>Average</u>	<u>High</u>
Assessed Valuation (%)	0.013	.0318	1.656
Per Capita (\$)	-	313	2707

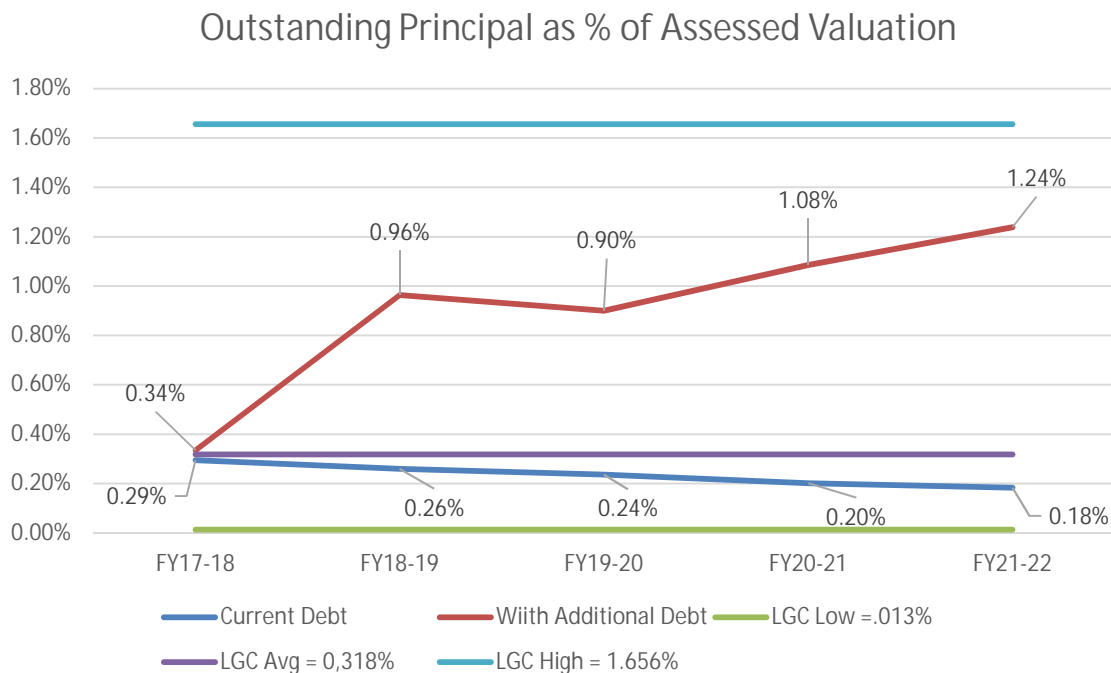
### Current Debt Service and Future Debt Service

CURRENT DEBT SERVICE	\$ ISSUE	FY16-17 Budget	FY17-18	FY18-19	FY19-20	FY20-21	FY21-22	TOTAL
SIDEWALK AND GREENWAYS GO BONDS	\$ 4,600,000	\$ 340,000	\$ 332,500	\$ 327,500	\$ 322,500	\$ 317,500	\$ 312,500	\$ 1,952,500
FIRE SUBSTATION	\$ 2,992,703	289,418	280,600	271,781	262,963	254,145	245,326	1,604,232
VEHICLE/EQUIPMENT	N/A	459,160	479,522	274,949	127,714	-	-	1,341,345
<b>TOTAL CURRENT DEBT SERVICE</b>		<b>\$ 1,088,578</b>	<b>\$ 1,092,621</b>	<b>\$ 874,231</b>	<b>\$ 713,177</b>	<b>\$ 571,645</b>	<b>\$ 557,826</b>	<b>\$ 4,898,078</b>
<b>FUTURE DEBT SERVICE- PROJECTS NOT YET FUNDED</b>								
203 S. GREENSBORO DEVELOPMENT	\$ 14,325,000	\$ -		\$ 1,140,628	\$ 1,119,141	\$ 1,097,653	\$ 1,076,166	\$ 4,433,588
CENTURY CENTER RENOVATIONS	\$ 5,550,000				-		561,013	561,013
TOWN HALL IMPROVEMENTS	\$ 6,282,000	-	-	-		604,119	591,555	1,195,674
PUBLIC WORKS FACILITY	\$ 3,750,000	-	-	-	-	-	-	-
FIRE STATION #1	\$ 1,500,000							-
<b>TOTAL FINANCING DEBT SERVICE - FUTURE</b>	<b>\$ 31,407,000</b>	<b>-</b>	<b>-</b>	<b>1,140,628</b>	<b>1,119,141</b>	<b>1,701,772</b>	<b>2,228,734</b>	<b>6,190,275</b>
<b>FUTURE VEHICLE/EQUIPMENT DEBT</b>	<b>N/A</b>		\$ 236,793	\$ 310,794	\$ 455,402	\$ 531,537	\$ 597,831	\$ 2,132,357
<b>ALL DEBT SERVICE - CURRENT AND FUTURE</b>		<b>\$ 1,088,578</b>	<b>\$ 1,329,414</b>	<b>\$ 2,325,653</b>	<b>\$ 2,287,720</b>	<b>\$ 2,804,954</b>	<b>\$ 3,384,391</b>	<b>\$ 13,220,710</b>
REVENUE PER PENNY OF TAX *		\$ 213,483	\$ 217,753	\$ 222,108	\$ 226,550	\$ 231,081	\$ 235,702	
TAX RATE EQUIVALENT (CENTS)			6.11	10.47	10.10	12.14	14.36	

### **Debt to Assessed Valuation**

The Town's debt to assessed valuation ratio as of June 20, 2015, as calculated by the LGC, was .293% which is below the average for municipalities of similar size. Without additional debt, this ratio is projected to gradually decrease to .20% by FY 2021-22.

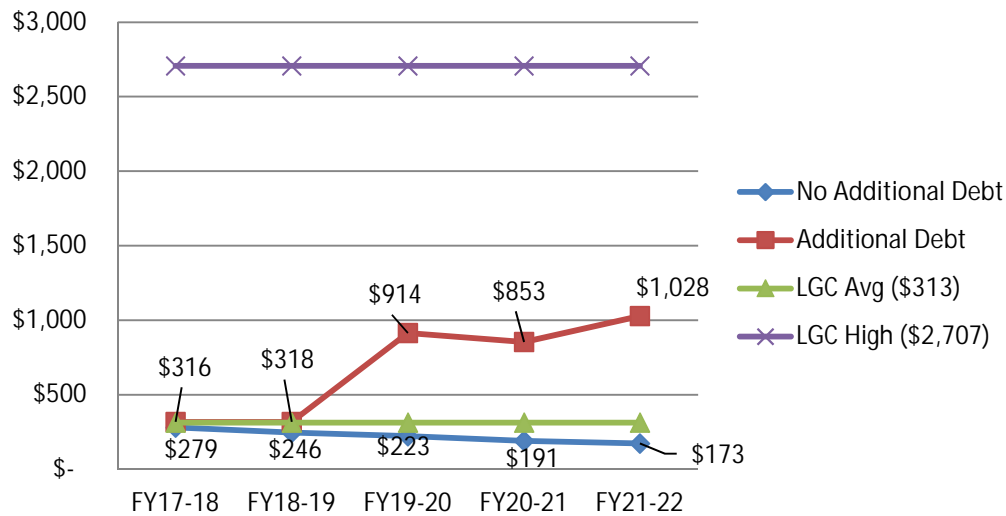
If the Town were to undertake all of the debt proposed in the CIP, outstanding principal as a percentage of assessed valuation over the next five years would increase to 1.24%, which is above the average, but less than the high level, for municipalities of similar size.



### **Debt Service Per Capita**

The Town's debt per capita as calculated by the LGC at June 30, 2015 was \$300. This is less than the average of \$313 for similar size municipalities. Without additional debt, this ratio would decrease to \$173 by FY 2021-22. If all of the proposed projects needing financing were undertaken by the Town, debt service per capital would increase from the current \$279 to \$1,028 by FY 2021-22.

## Debt Per Capita

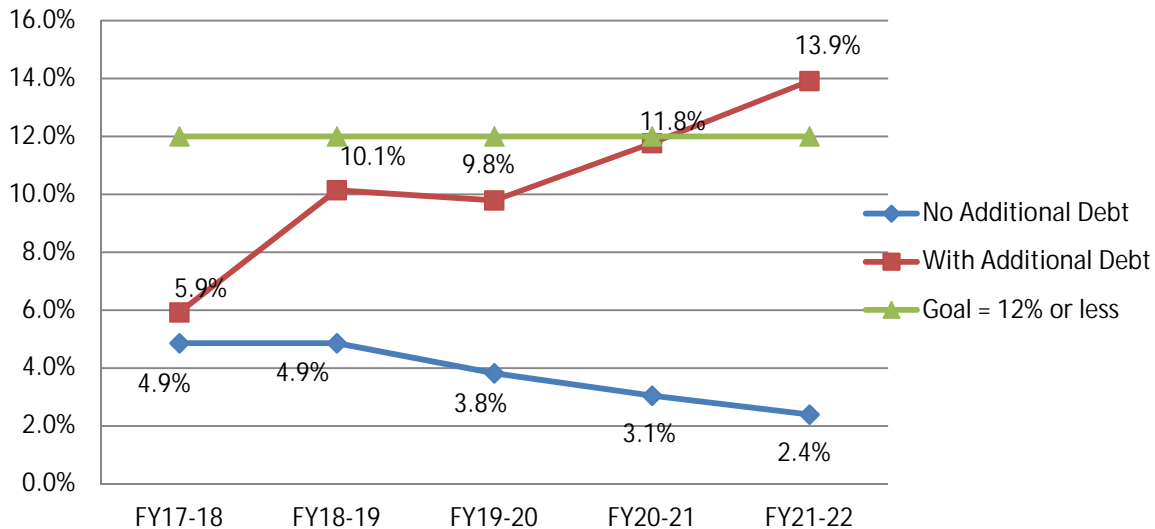


### **Debt Service and Operating Budget**

Debt service can be a major part of a local government's operating budget fixed costs for the term of the financing. Then LGC has not established a measure for debt service as a percentage of operating expenses, but advises local governments to have a reasonable debt burden. The credit rating agencies, on the other hand, generally consider debt exceeding 20% of operating revenues as a potential problem and considers 10% to be an acceptable debt burden. A heavy debt burden may be evidenced by a ratio of debt service to operating expenditures exceeding 15%, or a debt per capita or debt to appraised property value exceeding that of similar units. The Town has established a goal of 12% debt to operating expenses as a moderate level of debt.

The Town's current debt service as a percentage of the FY 2016-17 operating budget is estimated to be 4.9%. Without additional debt, this ratio will decrease to 2.4% by FY 2021-22. Again, if all of the proposed projects needing financing were undertaken by the Town, debt service as a percent of the operating budget would increase to 13.9% in FY 2021-22, and exceed the Town's established goal of 12%. To meet the Town's established goal of 12% will require that the scheduling of projects be reevaluated and possibly pushed out further in the future or implemented in stages if possible.

## Debt Service % of Operating Budget FY 2017-18 through 2021-22



### **Pay-As-You-Go**

There are other projects in the CIP that can be funded with fund balance that exceed 35% of budgeted appropriation. Each year upon completion of the annual audit, if the general fund unassigned fund balance is greater than 35%, the Town Manager can assign funds above the 35% level for future capital project needs. These assigned funds are either transferred to the Capital Reserve Fund or appropriated in a project ordinance for a specific capital project by the Board of Aldermen. - Assigning these funds annually for future capital projects lessens the Town's debt burden.

Over the next five years, the Town plans to fund the following projects using fund balance above the 35% level.

PAY-AS-YOU-GO (CASH - GENERAL FUND)	FY16-17	FY17-18	FY18-19	FY19-20	FY20-21	FY21-22	TOTAL
STORM WATER UTILITY	80,000	89,443	973,036	893,290	834,049	433,807	\$ 3,303,625
MARTIN LUTHER KING JR. PARK	150,000	1,291,146	-	-	-	-	\$ 1,441,146
STREET RESURFACING	551,000	300,000	300,000	300,000	300,000	300,000	\$ 2,051,000
GREENSBORO-LLOYD BIKEWAY	\$ -	\$ 38,413	\$ 176,841				\$ 215,254
GREENWAYS & MULTI-USE PATHS	-						\$ -
INFORMATION TECHNOLOGY	-	195,000		80,000			\$ 275,000
PARK MAINTENANCE AND REPAIR	-	100,000					\$ 100,000
<b>TOTAL CAPITAL RESERVE CASH ALLOCATION</b>	<b>\$ 781,000</b>	<b>\$ 2,014,002</b>	<b>\$ 1,449,877</b>	<b>\$ 1,273,290</b>	<b>\$ 1,134,049</b>	<b>\$ 733,807</b>	<b>\$ 7,386,025</b>
LESS ASSIGNED FUND BALANCE	\$ 2,000,000	\$ 2,000,000	\$ 2,000,000	\$ 2,000,000	\$ 2,000,000	\$ 2,000,000	\$ 12,000,000
CASH SURPLUS (DEFICIT)	\$ 1,219,000	\$ (14,002)	\$ 550,123	\$ 726,710	\$ 865,951	\$ 1,266,193	\$ 4,613,975

As the above chart shows, the Town will need \$7.3 million through FY 2021-22 for these projects. If the fund balance trend over the past 4 years continues, the Town will be able to continue to assign \$2.0 million annually which would total \$12.0 million by FY 2021-22. This means there would be a surplus of funds \$4.6 million in FY 2021-22 that could be used for other capital projects.

To carry out a \$51.8 million capital improvement plan will require balancing current operating needs with needed capital investments. With a tax base consisting mainly of residential property owners and a limited commercial base, the challenge is how to minimize increases in the property tax rate for citizens, yet make the needed investments for capital infrastructure. To maintain the Town's debt burden within the standards established by the LGC and credit rating agencies, it will require critical evaluation of the design of capital projects as well as the timing for implementation those projects.

## Attachment C

<b>PROJECT TITLE: Rogers Road Sidewalk</b>	<b>DEPARTMENT: Public Works</b>
<b>AUTHORIZED BUDGET: \$1,371,658</b>	<b>CONTACT: JD Freeman</b>

<b>START DATE: February 2013</b>	<b>EXPECTED COMPLETION DATE: Late summer/early fall 2017</b>
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### DESCRIPTION

Construction of a sidewalk on the Carrboro side of Rogers Road.

### MAJOR ACTIVITIES

Easement acquisition and design is now complete. The design was submitted to NCDOT December 12, 2016. The next step is to go out to bid once design is approved by NCDOT, which could take up to 4 months for review.

<b>PROJECT TITLE: Street Resurfacing</b>	<b>DEPARTMENT: Public Works</b>
<b>AUTHORIZED BUDGET: \$551,000</b>	<b>CONTACT: JD Freeman</b>

<b>START DATE: April 2017</b>	<b>EXPECTED COMPLETION DATE: April 2017</b>
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### DESCRIPTION

The Town currently maintains approximately 44.16 miles of paved roads and a bi-annual repaving schedule has been implemented to maintain the condition and aesthetics of Town streets. Resurfacing each street every 15 years prevents critical surface deterioration and avoids expensive roadway replacement or reconstruction. To maintain the 15 year cycle, approximately 5 to 5 1/2 miles of streets need to be resurfaced every 2 years.

### STATUS

Public Works will use the previously performed condition survey to decide which streets to repair. Once this is complete, an RFP will be processed to select a contractor to perform work in the spring.



## Attachment C

<b>PROJECT TITLE: Century Center HVAC</b>	<b>DEPARTMENT: Public Works</b>
<b>AUTHORIZED BUDGET: \$180,000</b>	<b>CONTACT: JD Freeman</b>

<b>START DATE: May 2016</b>	<b>EXPECTED COMPLETION DATE: February 1, 2017</b>
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### DESCRIPTION

This project is providing general upgrades to the century center HVAC system to provide a more energy efficient facility. Upgrades include a new boiler, controls and rebalancing of the entire system to better operate together. New controls are also internet based and will provide a schedule for minimal HVAC service during unmanned hours.

### STATUS

We have replaced the controls and the boiler with new energy efficient models. The next step is to install modern Variable Frequency Drives for each of the three HVAC units which will further increase energy efficiency. These upgrades and new technology also allowed the team to install a smaller energy efficient boiler.

<b>PROJECT TITLE: Town Commons Improvements</b>	<b>DEPARTMENT: Public Works</b>
<b>AUTHORIZED BUDGET: \$1,070,990</b>	<b>CONTACT: JD Freeman</b>

<b>START DATE: June 2015</b>	<b>EXPECTED COMPLETION DATE: April 2017</b>
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### DESCRIPTION

This project will provide a complete overhaul of Town Commons. Improvements include structurally supported sod, irrigation, new restroom, pervious pavement and new landscaping. The wooden vertical structures will receive a cleaning and a fresh coat of stain.

### STATUS

Design is 100% complete and ready for construction. The projects first bid opening on October 31 did not receive any bidders. Second opening scheduled for November 22 also received no bids. It has been decided that the project be split up and rebid. The site work part of the project has gone out to bid with a bid opening date of January 12<sup>th</sup>. Major goal of the project is to complete major work over the winter so that Farmers' Market can resume in early spring. BOA elected to include a restroom with the improvements.

## Attachment C

<b>PROJECT TITLE: Homestead-CHHS Multi-use Path</b>	<b>DEPARTMENT: Public Works/ Planning</b>
<b>AUTHORIZED BUDGET: \$1,253,129</b>	<b>CONTACT: JD Freeman/Tina Moon</b>

<b>START DATE: FY 2012</b>	<b>EXPECTED COMPLETION DATE: December 2017</b>
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### DESCRIPTION

Construction of a paved 10-foot wide trail connecting the Claremont neighborhood, under Homestead Road, to Chapel Hill High School.

### STATUS

Construction is underway, including surveying, sedimentation and erosion control installation, clearing, grading, gravel installation and compaction, and bridge design.

<b>PROJECT TITLE: Jones Creek Greenway</b>	<b>DEPARTMENT: Planning</b>
<b>AUTHORIZED BUDGET: \$420,000</b>	<b>CONTACT: Bergen Watterson</b>

<b>START DATE: July 11, 2016</b>	<b>EXPECTED COMPLETION DATE: TBD</b>
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### DESCRIPTION

Construct a greenway that will complete an off-road network between Morris Grove Elementary, Lake Hogan Farms neighborhood, and Twin Creeks Park.

### STATUS

A municipal agreement was initiated with NCDOT in July 2016. Staff is currently working on RFQ for design and engineering. A supplemental agreement with NCDOT will need to be executed for an additional \$80,000 of CMAQ funding and the schedule delay.

## Attachment C

<b>PROJECT TITLE: LED Streetlights</b>	<b>DEPARTMENT: Public Works</b>
<b>AUTHORIZED BUDGET: \$100,000</b>	<b>CONTACT: JD Freeman</b>

<b>START DATE: Unknown</b>	<b>EXPECTED COMPLETION DATE: Unknown</b>
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### DESCRIPTION

Installation of LED streetlights on light poles leased from Duke Energy. This project has yet to start.

### STATUS

Awaiting Duke Energy to change funding and rental rules for LED lights.

<b>PROJECT TITLE: Smith Level Road Sidewalk</b>	<b>DEPARTMENT: Public Works</b>
<b>AUTHORIZED BUDGET: \$62,562</b>	<b>CONTACT: JD Freeman</b>

<b>START DATE: Unknown</b>	<b>EXPECTED COMPLETION DATE: Unknown</b>
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### DESCRIPTION

Cost share for the construction of a sidewalk and installation of bike loop detectors on Smith Level Road in conjunction with the NCDOT road improvements.

### STATUS

Project is complete.

## Attachment C

<b>PROJECT TITLE: Martin Luther King Jr Park Construction Design</b>	<b>DEPARTMENT: Recreation and Parks</b>
<b>AUTHORIZED BUDGET: \$150,000</b>	<b>CONTACT: Wendell Rodgers</b>

<b>START DATE: FY 15-16</b>	<b>EXPECTED COMPLETION DATE: May 2017</b>
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### DESCRIPTION

The Recreation and Parks Department has hired a consultant to prepare construction drawings, documents and cost estimates for the development of Martin Luther King Jr. Park based on the Board of Aldermen approved Modified Option design concept. The design will be attentive to environmental features, address best practices in water resources and provide accessible facilities to users of all abilities. The facility will be designed with, at a minimum, the consideration of the following elements: parking, expansion of the existing community garden and storage area, picnic areas and shelters, restrooms, an amphitheater, natural playground, adult fitness equipment, youth cycling area, 10' wide ADA accessible trail, pollination gardens, bee hives, and a wetland.

### STATUS

In June the Recreation and Parks Department interviewed three firms for the design of the park. The department was unable to come to an agreement with their first selected firm and has negotiated a contract with the second firm.

<b>PROJECT TITLE: Hank Anderson Park Pavilion and Fence Replacement</b>	<b>DEPARTMENT: Recreation and Parks</b>
<b>AUTHORIZED BUDGET: \$156,880</b>	<b>CONTACT: Wendell Rodgers</b>

<b>START DATE: July 2015</b>	<b>EXPECTED COMPLETION DATE: June 2016</b>
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### DESCRIPTION

The Pavilion floor at Anderson Community Park frequently flooded with sand during heavy rains and was not ADA accessible. It is regularly used for large outings by all facets of the community. The chain link fencing at Anderson had surpassed the average lifespan of chain link fencing (20-30 years). Sections of the fencing had begun to develop large patches of rust and required routine patching and repairs as metal sections broke down over time. New fencing improved the facility aesthetically, provided improved safety for citizens by replacing broken fencing sections, and requires less upkeep by staff.

### STATUS

The installation of the fences was completed in March, 2016 and the pavilion was replaced in June, 2016.

## Attachment C

<b>PROJECT TITLE: Police Body Worn Cameras</b>	<b>DEPARTMENT: IT</b>
<b>AUTHORIZED BUDGET: \$91,000</b>	<b>CONTACT: Andy Vogel</b>

<b>START DATE: FY 2015</b>	<b>EXPECTED COMPLETION DATE: FY 2017-18</b>
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### DESCRIPTION

Purchase and implement new Police Officer body worn camera system with additional SAN storage for video retention.

### STATUS

The Police Department is completing an administrative policy for body worn cameras (BWC) prior to purchase of BWC's. A hardware update to the BWC system has been released to market that offers functionality enhancements and additions. The updated BWC system is now capable of automatic wireless activation among all officers and in-car video on the scene with audio and video synchronized across all cameras for a more complete view of the scene. Wireless uploading of video has also been added. This is more efficient than having to physically dock units for video transfer. The original CIP cost for BWC's (not including SAN storage) was \$36,000. The updated cost for the newly released BWC hardware is \$66,000 for 32 BWC's (for Patrol and Community Service Officers). Additional SAN storage for video retention has been purchased and is being installed.

<b>PROJECT TITLE: Public Safety Radio Upgrade</b>	<b>DEPARTMENT: Police &amp; Fire</b>
<b>AUTHORIZED BUDGET: \$546,000</b>	<b>CONTACT: Walter Horton</b>

<b>START DATE: FY 2015-16</b>	<b>EXPECTED COMPLETION DATE: F Y 2017-18</b>
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### DESCRIPTION

Update all public safety radios for compliance with Orange County radio system. Orange County will no longer support the existing radios.

### STATUS

In FY 2014-15 through FY 2016-17, \$273,000 was transferred from the General Fund to the Capital Project Fund for the purchase of new radios based on system to be implemented by Orange County Communications. An additional \$273,000 will be transferred in FY 2017-18.

## Attachment C

<b>PROJECT TITLE: Rogers Road Conduit</b>	<b>DEPARTMENT: IT</b>
<b>AUTHORIZED BUDGET: \$155,000</b>	<b>CONTACT: Andy Vogel</b>

<b>START DATE: October 2014</b>	<b>EXPECTED COMPLETION DATE: February 2018</b>
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### DESCRIPTION

Installation of conduit along Rogers Road for fiber optic infrastructure by directional boring. Will be done in conjunction with Rogers Road NCDOT improvements.

### STATUS

Conduit path along Rogers Road has been fully engineered and designed. NC DOT encroachment permit for placing conduit in NCDOT ROW has been approved by the NCDOT. Installation of conduit will be synchronized with NCDOT road improvements work.

<b>PROJECT TITLE: Permitting Software</b>	<b>DEPARTMENT: IT</b>
<b>AUTHORIZED BUDGET: \$230,000</b>	<b>CONTACT: Andy Vogel</b>

<b>START DATE: June 2015</b>	<b>EXPECTED COMPLETION DATE: February 2018</b>
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### DESCRIPTION

Purchase and implement new Permitting & Land Management (PLM) Software for Planning, Zoning and Inspections Department.

### STATUS

Orange County has recently conducted their own PLM software selection process, procured and are currently implementing the new system. Orange County invited Carrboro Planning staff to participate throughout their selection process. Carrboro Planning staff have followed the Orange County selection process, created their own selection process and have identified the same software vendor and application as suitable for their needs. Using the same software platform in both organizations offers functional advantages in terms of work flow integration between organizations. Carrboro Planning and IT staff have met with Orange County staff to review what has been learned through their process to date and develop insight into how Carrboro should plan for the implementation. Carrboro staff currently sits in on weekly Orange County implementation meetings. A Carrboro project team has been formed from Planning and IT staff and workflow and processes are currently being documented for Inspections. The Carrboro project team will next move to Zoning and then to Planning. IT and Finance is in the process of finalizing the software agreement and purchasing the software.

## Attachment C

<b>PROJECT TITLE: Rogers Road Remediation</b>	<b>DEPARTMENT: Planning</b>
<b>AUTHORIZED BUDGET: \$1,020,445</b>	<b>CONTACT: Trish McGuire</b>

<b>START DATE: FY 2014</b>	<b>EXPECTED COMPLETION DATE: June 2019</b>
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### DESCRIPTION

Cost share of design and installation of public sanitary sewer system to serve 86 properties in the area, as well as, design and construction of a community center. This project is in partnership with the Town of Chapel Hill and Orange County.

### MAJOR ACTIVITIES

The sewer system has been designed, easement acquisition has been underway, permit applications are pending and OWASA is prepared to begin a prequalification process for prospective bidders. Construction is set to begin June 2018. The Towns and Orange County developed an Interlocal Agreement, establishing terms and conditions, breakdown of project costs, and specifying responsibilities for the Towns and County. This Interlocal Agreement has been approved by the Orange County Board of County Commissioners, The Town of Chapel Hill Town Council and the Town of Carrboro Board of Aldermen.

<b>PROJECT TITLE: Morgan Creek Greenway Phases 1 and 2</b>	<b>DEPARTMENT: Planning</b>
<b>AUTHORIZED BUDGET: \$1,513,500</b>	<b>CONTACT: Tina Moon</b>

<b>START DATE: FY 2012</b>	<b>EXPECTED COMPLETION DATE: December 2017</b>
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### DESCRIPTION

Design and construct a greenway along Morgan Creek from Smith Level Road to University Lake, with connections, via a bridge, to BPW Club Rd. and, via an underpass, to Frank Porter Graham Elementary.

### MAJOR ACTIVITIES

Design which included several crossings over Morgan Creek is complete. Due to flood studies that are necessary when crossings are included, the design of these crossings is proving problematic. Engineers are working on alternatives to accommodate the crossings.

## Attachment C

The following sites have been determined by Planning staff and Sungate Engineers as best sites available in the municipal limits to pursue the construction of storm water retrofits to satisfy the requirements of the Jordan Lake Rules for nutrient reduction from existing development. All sites are in the planning stage.

<b>PROJECT TITLE: Anderson Park Storm water Retrofit</b>	<b>DEPARTMENT: Planning</b>
<b>AUTHORIZED BUDGET: \$28,000</b>	<b>CONTACT: Randy Dodd</b>

<b>START DATE: FY 2018</b>	<b>EXPECTED COMPLETION DATE: FY 2018</b>
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### DESCRIPTION

The construction of storm water treatment is expected to reduce nitrogen loading from 3.22 lbs/acre/year to 1.33 lbs/ac/yr. The cost estimate provided is based on calculations by Sungate. The project phasing would be to first complete an engineering/design study, and then proceed to construction. Engineering design dollars will be requested beginning in FY 2018 and construction dollars beginning in FY 2018.

<b>PROJECT TITLE: MLK Park Storm Water Retrofit</b>	<b>DEPARTMENT: Planning</b>
<b>AUTHORIZED BUDGET: \$15,000</b>	<b>CONTACT: Randy Dodd</b>

<b>START DATE: FY 2018</b>	<b>EXPECTED COMPLETION DATE: FY 2018</b>
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### DESCRIPTION

Sungate completed a study in 2012 that identified a swale and wetland retrofit on the site. The project phasing would be to first complete a detailed engineering/design study that would address hydrology and development of construction drawings, and then proceed to construction. The water depth of the wetland would be limited to 3 feet with 1-2 feet for temporary storage following rain events. Engineering design dollars will be requested beginning in FY 2018 and construction dollars beginning in FY 2018.

<b>PROJECT TITLE: Morgan Creek Storm Water Retrofit</b>	<b>DEPARTMENT: Planning</b>
<b>AUTHORIZED BUDGET: \$40,000</b>	<b>CONTACT: Randy Dodd</b>

<b>START DATE: FY 2018</b>	<b>EXPECTED COMPLETION DATE: FY 2018</b>
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### DESCRIPTION

The construction of (a) storm water retrofit(s) is expected to reduce nitrogen loading from 7.82 (lbs/acre/year) to a minimum of 3.11 lbs/ac/yr. The project site is currently cleared for utility easements and Public Works access, and includes a planned greenway trail. The project phasing would be to first complete an engineering/design study, and then proceed to construction. Preliminary engineering will have to consider the greenway, Town operations, utilities, stream buffer requirements, location in the floodplain, and archaeological interests. Engineering design dollars will be requested beginning in FY2018 and construction dollars beginning in FY2018.



**DEPARTMENT:** Information Technology  
**PROJECT TITLE:** Board Room A/V Equipment

	<b>FUNDING TO DATE</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FIVE YEAR TOTAL</b>	<b>TOTAL PROJECT COSTS</b>
<b>Expenses</b>								
Equipment/Furnishings		\$ 95,000					\$ 95,000	\$ 95,000
<b>TOTAL</b>		\$ 95,000					\$ 95,000	\$ 95,000
<b>Appropriations</b>								
General Fund		\$ 95,000					\$ 95,000	\$ 95,000
<b>TOTAL</b>		\$ 95,000					\$ 95,000	\$ 95,000
<b>Operating Budget Impact</b>								
Operating		\$ 15,000	\$ 15,000	\$ 15,000	\$ 15,000	\$ 15,000	\$ 75,000	\$ 75,000
<b>Estimated Total</b>		\$ 15,000	\$ 15,000	\$ 15,000	\$ 15,000	\$ 15,000	\$ 75,000	\$ 75,000

#### Description and Benefits

Replaces existing BoA Audio and Video recording equipment used for BoA meeting (and other) broadcasts, streaming and recording. The existing equipment is and has been failing and current service level will be lost if not replaced. Compliance with state mandated closed captioning for PEG programming is not being met. Compliance will require additional hardware and hiring a vendor to do closed captioning.

#### Energy Sustainable Measures

N/A

#### Funding Source Notes ( if grants, ID source and matching requirements)

General Fund

**DEPARTMENT:** Information Technology  
**PROJECT TITLE:** Telephone System Replacement

	<b>FUNDING TO DATE</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FIVE YEAR TOTAL</b>	<b>TOTAL PROJECT COSTS</b>
<b>Expenses</b>								
Equipment/Furnishings		\$ 85,000					\$ 85,000	\$ 85,000
<b>TOTAL</b>		\$ 85,000					\$ 85,000	\$ 85,000
<b>Appropriations</b>								
General Fund		\$ 85,000					\$ 85,000	\$ 85,000
<b>TOTAL</b>		\$ 85,000					\$ 85,000	\$ 85,000

#### Description and Benefits

Replace existing phone system (includes voicemail system) that serves all Town facilities and departments. Current phone system has been at end-of-life for over five years. Replacement parts are becoming hard to obtain. Current system cannot be upgraded or added to in any way. No new replacement parts are being made for the current system.

#### Energy Sustainable Measures

N/A

#### Funding Source Notes ( if grants, ID source and matching requirements)

General Fund

**DEPARTMENT:** Information Technology  
**PROJECT TITLE:** Conduit Installation Along S. Greensboro Street

	<b>FUNDING TO DATE</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FIVE YEAR TOTAL</b>	<b>TOTAL PROJECT COSTS</b>
<b>Expenses</b>								
Equipment/Furnishings				\$ 80,000			\$ 80,000	\$ 80,000
<b>TOTAL</b>				\$ 80,000			\$ 80,000	\$ 80,000
<b>Appropriations</b>								
General Fund				\$ 80,000			\$ 80,000	\$ 80,000
<b>TOTAL</b>				\$ 80,000			\$ 80,000	\$ 80,000

**Description and Benefits**

Install conduit along South Greensboro St. during NCDOT and the Town of Carrboro South Greensboro Sidewalk Project. The proposed conduit installation will link Town owned conduit located on Smith Level Rd to the Century Center and connect the planned Carrboro-Orange County Library to the Town of Carrboro conduit infrastructure system.

**Energy Sustainable Measures**

N/A

**Funding Source Notes ( if grants, ID source and matching requirements)**

General Fund

**DEPARTMENT:** Planning  
**PROJECT TITLE:** Greensboro- Lloyd Bike Crossing

	<b>FUNDING TO DATE</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FIVE YEAR TOTAL</b>	<b>TOTAL PROJECT COSTS</b>
<b>Expenses</b>								
Planning/Design		\$ 28,604					\$ 28,604	\$ 28,604
Construction			\$ 176,841				\$ 176,841	\$ 176,841
Land/ROW		\$ 9,809					\$ 9,809	\$ 9,809
<b>TOTAL</b>		\$ 38,413	\$ 176,841				\$ 215,254	\$ 215,254
<b>Appropriations</b>								
Intergovernmental Funds		\$ 22,916	\$ 105,494				\$ 128,410	\$ 128,410
Bond Fund		\$ 15,497	\$ 71,347				\$ 86,844	\$ 86,844
<b>TOTAL</b>		\$ 38,413	\$ 176,841				\$ 215,254	\$ 215,254

**Description and Benefits**

Construct a multi-use path connecting Greensboro and Lloyd Streets, including a railroad crossing. At this time the crossing is envisioned to be at-grade, since it is a low-volume track. The path will provide east-west access for bicyclists and pedestrians as an alternative to travel on E. Main, Weaver and N. Greensboro Streets, which experience heavy motor vehicle traffic.

**Energy Sustainable Measures**

The Town's 2014 Energy and Climate Protection Plan calls for the Town to support the community sector and commit matching funds for greenways and to plan for increased transit connections, car and bike sharing, walkability, and carpooling strategies. This improvement would provide additional access for bicyclists and walkers moving east to west across the railroad tracks.

**Funding Source Notes ( if grants, ID source and matching requirements)**

Congestion Mitigation Air Quality(CMAQ) funds made available through DCHC MPO. Requires 20% local match.

**DEPARTMENT:** Recreation & Parks  
**PROJECT TITLE:** Martin Luther King Jr Park

	<b>FUNDING TO DATE</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FIVE YEAR TOTAL</b>	<b>TOTAL PROJECT COSTS</b>
<b>Expenses</b>								
Planning/Design	\$ 150,000						\$ 150,000	\$ 150,000
Construction		\$ 1,291,146					\$ 1,291,146	\$ 1,291,146
<b>TOTAL</b>	\$ 150,000	\$ 1,291,146						\$ 1,441,146
<b>Appropriations</b>								
Capital Project Fund	\$ 150,000	\$ 1,291,146						\$ 1,441,146
<b>TOTAL</b>	\$ 150,000	\$ 1,291,146						\$ 1,441,146

**Description and Benefits**

The development of Martin Luther King, Jr. Park will serve neighborhoods in the northern area and accommodate the ultimate growth north of Hillsborough Road from the Old Fayetteville to Calvander intersection. Currently, there is not a neighborhood park available for the northern area of Town.

**Energy Sustainable Measures**

Rain barrels will be placed at all structures so rain can be used in the community garden and by Public Works as needed.

**Funding Source Notes ( if grants, ID source and matching requirements)**

Capital Project Fund

**DEPARTMENT:** Recreation & Parks  
**PROJECT TITLE:** Multi Purpose Field Fence and Bleachers

	<b>FUNDING TO DATE</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FIVE YEAR TOTAL</b>	<b>TOTAL PROJECT COSTS</b>
<b>Expenses</b>								
Construction		\$ 95,000					\$ 95,000	\$ 95,000
<b>TOTAL</b>		\$ 95,000					\$ 95,000	\$ 95,000
<b>Appropriations</b>								
General Fund		\$ 95,000					\$ 95,000	\$ 95,000
<b>TOTAL</b>		\$ 95,000					\$ 95,000	\$ 95,000

**Description and Benefits**

This initiative involves fencing in the newly renovated multipurpose field at Anderson Community Park with the purpose of deterring deer from going onto the field, controlling the play on the field from interfering with simultaneous softball activities on field #4 and from balls going onto the adjacent property owners land. Also, the fence will help to regulate free play on the field as well. Adding bleachers will enhance the functionality of the multi purpose field and give park patrons a place to sit while they are there for games and other activities.

**Energy Sustainable Measures**

None

**Funding Source Notes ( if grants, ID source and matching requirements)**

General Fund

**DEPARTMENT: Stormwater Management Utility Enterprise Fund**

The following retrofits have been determined by Planning staff and Sungate Engineers as best sites available in the municipal limits to pursue the construction of stormwater retrofits to satisfy the requirements of the Jordan Lake Rules for nutrient reduction from existing development.

**PROJECT TITLE: Carrboro Plaza Stormwater Retrofit**

	<b>FUNDING TO DATE</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FIVE YEAR TOTAL</b>	<b>TOTAL PROJECT COSTS</b>
<b>Expenses</b>								
Planning/Design			\$ 16,291				\$ 16,291	\$ 16,291
Construction				\$ 92,316			\$ 92,316	\$ 92,316
<b>TOTAL</b>			\$ 16,291	\$ 92,316			\$ 108,607	\$ 108,607
<b>Appropriations</b>								
Stormwater Utility			\$ 16,291	\$ 92,316			\$ 108,607	\$ 108,607
<b>TOTAL</b>			\$ 16,291	\$ 92,316			\$ 108,607	\$ 108,607
<b>Operating Budget Impact</b>								
Personnel					\$ 1,000	\$ 500	\$ 1,500	\$ 1,500
<b>Estimated Total</b>					\$ 1,000	\$ 500	\$ 1,500	\$ 1,500

**Description and Benefits**

Land at the entrance to Carrboro Plaza can accommodate a retention pond treating runoff from about 25 acres of commercial land and adjacent roads. The construction of stormwater treatment is expected to reduce nitrogen loading from 10.74 lbs/acre/year to 7.45 lbs/ac/yr. The cost estimate provided is based on calculations by Sungate. The project phasing would be to first complete an engineering/design study, and then proceed to construction. Anticipate two (2) FTE for management of the project.

**Energy Sustainable Measures**

The Draft 2016 Community Climate Action Plan includes establishment of a stormwater utility to manage stormwater quality and quantity impacts and increase res through adaptive strategies in response to /preparation for changing climate conditions.

**PROJECT TITLE: McDougle School Stormwater Retrofit**

	<b>FUNDING TO DATE</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FIVE YEAR TOTAL</b>	<b>TOTAL PROJECT COSTS</b>
<b>Expenses</b>								
Planning/Design				\$ 82,974			\$ 82,974	\$ 82,974
Construction					\$ 523,249	\$ 389,463	\$ 912,712	\$ 912,712
<b>TOTAL</b>				\$ 82,974	\$ 523,249	\$ 389,463	\$ 995,686	\$ 995,686
<b>Appropriations</b>								
Stormwater Utility				\$ 82,974	\$ 523,249	\$ 389,463	\$ 995,686	\$ 995,686
<b>TOTAL</b>				\$ 82,974	\$ 523,249	\$ 389,463	\$ 995,686	\$ 995,686
<b>Operating Budget Impact</b>								
Personnel						\$ 1,000	\$ 1,000	\$ 1,000
<b>Estimated Total</b>						\$ 1,000	\$ 1,000	\$ 1,000

**Description and Benefits**

The land adjacent to McDougle School drains 33 acres . The project phasing would be to first complete a detailed engineering/design study that would address hydrology, geotechnical considerations, utilities, and development of construction drawings, and then proceed to construction. The water depth of the wetland would be limited to 3 feet with 1-2 feet for temporary storage following rain events.

**PROJECT TITLE: Carrboro High Retrofit**

	<b>FUNDING TO DATE</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FIVE YEAR TOTAL</b>	<b>TOTAL PROJECT COSTS</b>
<b>Expenses</b>								
Planning/Design						\$ 44,344	\$ 44,344	\$ 44,344
<b>TOTAL</b>						\$ 44,344	\$ 44,344	\$ 44,344

**Appropriations**

Stormwater Utility	\$	44,344	\$	44,344	\$	44,344
<b>TOTAL</b>	\$	44,344	\$	44,344	\$	44,344

**Description and Benefits**

The land adjacent to Carrboro High School drains about 20 acres. Sungate has completed a study in 2014 that has identified bioretention and pond retrofits on the site. The project phasing would be to first complete a detailed engineering/design study that would address hydrology, geotechnical considerations, utilities, and development of construction drawings, and then proceed to construction.

**Energy Sustainable Measures**

The Draft 2016 Community Climate Action Plan includes establishment of a stormwater utility to manage stomwater quality and quantity impacts and increase resilience through adaptive strategies in response to /preparation for changing climate conditions.

# Attachment E

2018 Vehicle CIP Vehicle Requests							
Division	Vehicle	Pts	%	Age	Make	Model	Replacement Price
Police	217	13	130%		Chevrolet	Impala	\$50,312
Police	218	13	140%		Chevrolet	Impala	\$50,312
Police	221	12	150%		Chevrolet	Impala	\$50,312
Police	203	11	50%		Jeep	Liberty	\$50,312
Police	226	11	130%		Chevrolet	Impala	\$50,312
Police	004	11	100%		Ford	Taurus	\$50,312
Rec & Park	015	12	70%		Ford	Ranger	\$24,000
PW	801	8	50%	X	Freightliner	Condor	\$316,000
PW	017	9	70%	X	Ford	F-450	\$85,000
Total							\$726,872
2019 Vehicle CIP Vehicle Requests							
Division	Vehicle	Pts	%	Age	Make	Model	Replacement Price
Police	231	11	172%		Chevrolet	Impala	\$52,828
Police	229	11	160%		Chevrolet	Impala	\$52,828
Police	222	12	144%		Chevrolet	Impala	\$52,828
Police	230	11	135%		Chevrolet	Impala	\$52,828
Police	224	12	132%		Chevrolet	Impala	\$52,828
Police	236	11	116%		Chevrolet	Impala	\$52,828
Solid Waste	802	9	50%	X	Freightliner	Condor	\$331,800
IT	12	8	59%	X	Dodge	Caravan	\$24,200
PW	220	7	47%	X	Honda	Civic	\$35,574
Planning	702	6	36%	X	Honda	Civic	\$35,574
Total							\$744,114
2020 Vehicle CIP Vehicle Requests							
Division	Vehicle	Pts	%	Age	Make	Model	Replacement Price
Police	252	9	107%		Chevrolet	Impala	\$55,469
Police	223	12	104%		Chevrolet	Impala	\$55,469
Police	238	9	101%		Chevrolet	Impala	\$55,469
Police	233	14	120%		Dodge	Avenger	\$55,469
Police	225	12	117%		Chevrolet	Impala	\$55,469
Planning	134	9	100%		Ford	F-150	\$27,185
PW	503	10	128%		Ford	F-450	\$70,350
PW	041	12	114%		Ford	F-350 4x4	\$44,100
PW	030	11	62%	X	Ford	F-250 4x2 HD	\$41,273
PW	031	9	47%	X	Chevrolet	Dump Truck	\$110,000
PW	033	7	50%	X	International	Dump Truck	\$110,000
Total							\$680,253

## 2021 Vehicle CIP Vehicle Requests

[illegible]

## 2022 Vehicle CIP Vehicle Requests

[illegible]

## 2023 Vehicle CIP Vehicle Requests

[illegible]

## 2024 Vehicle CIP Vehicle Requests

[illegible]





# Town of Carrboro

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

## Agenda Item Abstract

**File Number:** 17-042

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**Agenda Date:** 2/21/2017

**File Type:** Agendas

**In Control:** Board of Aldermen

**Version:** 1

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### **TITLE:**

Consideration of Colorful Crosswalk Designs and Locations

**PURPOSE:** The purpose of this agenda item is for the Board of Aldermen to consider various options for colorful crosswalks at two locations in Town.

**DEPARTMENT:** Planning

**CONTACT INFORMATION:** Bergen Watterson, 919-918-7329, [bwatterson@townofcarrboro.org](mailto:bwatterson@townofcarrboro.org)  
<<mailto:bwatterson@townofcarrboro.org>>; JD Freeman, 919-918-7427, [jfreeman@townofcarrboro.org](mailto:jfreeman@townofcarrboro.org)  
<<mailto:jfreeman@townofcarrboro.org>>; Trish McGuire, 919-918-7327, [pmcguire@townofcarrboro.org](mailto:pmcguire@townofcarrboro.org)  
<<mailto:pmcguire@townofcarrboro.org>>

**INFORMATION:** In July 2015, elected officials and Town planning staff attended a meeting to discuss the Franklin St./Main St./Merritt Mill/Brewer Lane intersection that straddles the Carrboro and Chapel Hill boundary. As part of this meeting elected officials from both jurisdictions discussed gateway treatments for the main intersections leading into the Towns, and specifically colorfully painted crosswalks. As a result, 'Colorful Crosswalks' was added to the Team Carrboro Work Plan in September 2015. Since then Town staff has researched options for design and installation, and is looking to the Board of Aldermen for guidance on how to proceed.

The memo in Attachment B shows two design options for a rainbow crosswalk at the mid-block crossing on E. Weaver Street. The memo also includes descriptions for several options for rainbow crosswalks on Laurel Ave. at Town Commons.

**FISCAL & STAFF IMPACT:** Public Works staff estimates that each crosswalk will cost approximately \$600 to install, in addition to staff time.

**RECOMMENDATION:** Staff recommends that the Board of Aldermen consider the options for a mid-block rainbow crosswalk on E. Weaver Street and choose one for installation. In addition, staff recommends that the Board of Aldermen consider the options for Laurel Ave. crosswalks and direct staff on how to proceed.

A RESOLUTION TO PURSUE COLORFUL CROSSWALKS IN CARRBORO

WHEREAS, the Board of Aldermen has expressed interest in painting colorful crosswalks at various locations on Town-maintained roads, and

WHEREAS, pedestrian safety and comfort are high priorities for the Town, and

WHEREAS, Public Works staff can install the crosswalks in-house for an estimated cost of \$600 each.

NOW, THEREFORE, BE IT RESOLVED by the Carrboro Board of Aldermen that the Board directs staff to pursue colorful crosswalks selected on the following page:

This the 21<sup>st</sup> day of February in 2017.

## Colorful crosswalk options for E. Weaver Street mid-block crossing

E. Weaver Street Option 1 ☐



E. Weaver Street Option 2 ☐





## Colorful crosswalk options for Laurel Ave.

Any of these options can be done in the 'rainbow with white' design:

Yes

☐

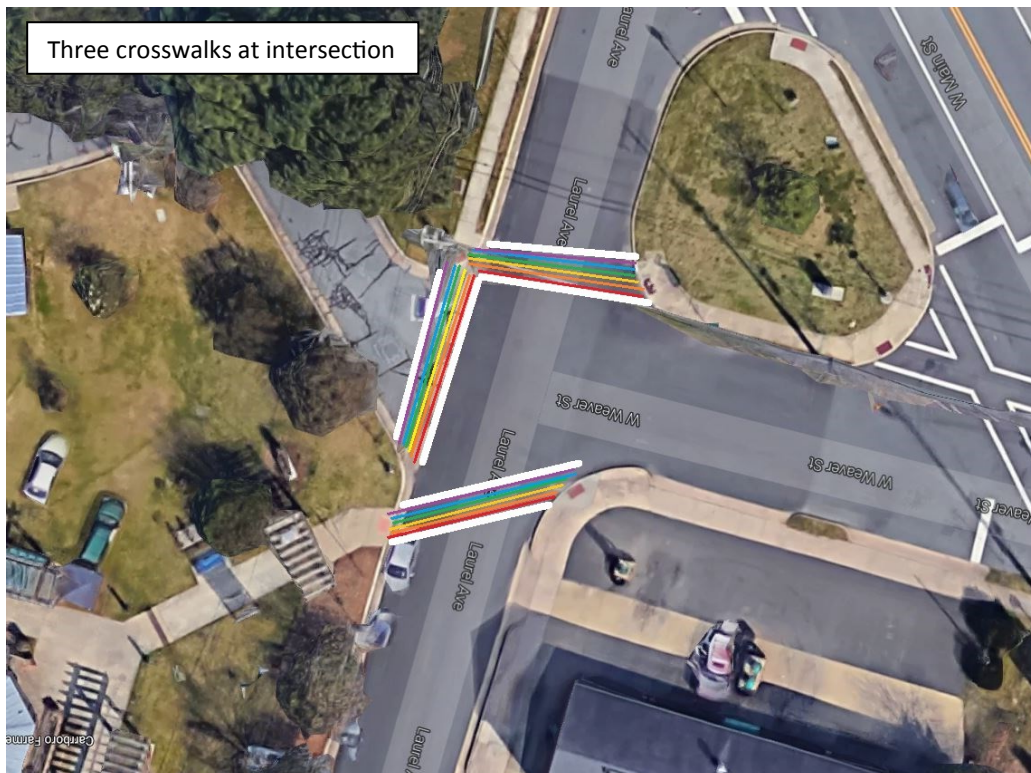
No

☐

Laurel Ave. Option 1

☐

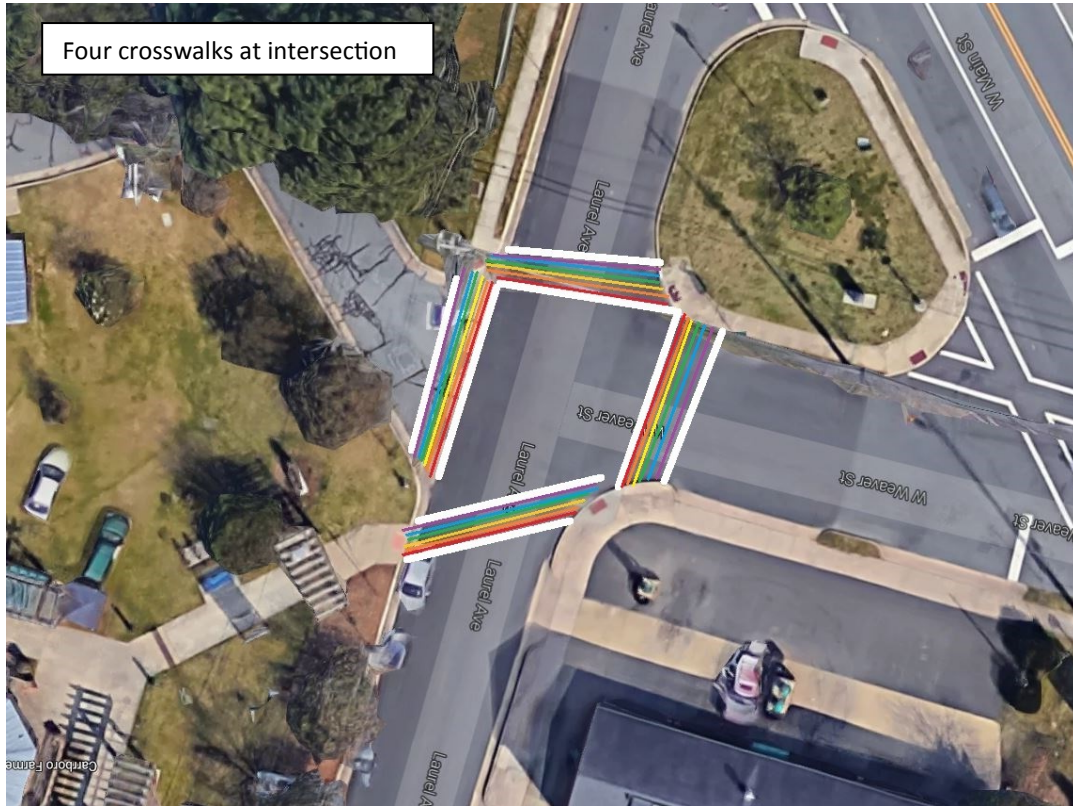
Laurel Ave. Option 2

☐

## Colorful crosswalk options for Laurel Ave.

*Any of these options can be done in the 'rainbow with white' design.*

Laurel Ave. Option 3







## TOWN OF CARRBORO

NORTH CAROLINA

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**DATE:** February 21, 2017

**TO:** David Andrews, Town Manager  
Mayor and Board of Aldermen

**FROM:** Bergen Watterson, Transportation Planner

**RE:** Colorful Crosswalks

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Colorful crosswalks are becoming popular among municipalities that want to use artwork to make their pedestrian crossings more visible. Rainbow designs are popular among municipalities that want to show support for their LGBTQ populations, while other jurisdictions are using unique designs created by their residents. The Town of Chapel Hill is installing a number of colorful crosswalks around Town that were designed by local artists (below).



Members of the Board of Aldermen discussed the idea of rainbow crosswalks at a meeting with Chapel Hill elected officials and Town staff in July of 2015, and *colorful crosswalks* was placed on the Team Carrboro Work Plan in September 2015. Planning and Public Works staff have researched the options and received a quote from Transpo Industries for installation of a rainbow crosswalk at the E. Weaver Street mid-block crossing using ColorSafe paint, which is guaranteed to have a service life of 6-10 years. This quote was for \$5,800 and does not include traffic control. Public Works has since determined that they can install the same crosswalk using Sherwin Williams paint with glass beads for reflectivity for ~\$600. However, the in-house job is not expected to last as long without needing refreshing; Public Works estimates that with the level of traffic on



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E. Weaver Street that, with two coats of paint, it should last approximately 4-5 years. There are two options for the rainbow crosswalk on E. Weaver Street:







## TOWN OF CARRBORO

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The first option accentuates the rainbow aspect of the crosswalk, but the second option will be more visible to drivers because of the heavy use of white paint. Upon installation, the first option will have thicker white lines on the outside to make the contrast starker between the pavement and the crosswalk. Public Works staff can install whichever of these crosswalks when they receive the direction.

Since the original discussion there has been interest in a colorful crosswalk across Laurel Ave. from Town Commons to the Town parking lot. Planning and Public Works examined the location and came up with several options:

- 1) In order to install a crosswalk from the sidewalk on the east side of Laurel near the Town-leased parking lot there would need to be curb cuts and ADA ramps on both sides of the street, and a sidewalk on the Town Commons side where the crosswalk would land. This would likely require waiting until the Town Commons upgrade next year.



- 2) The crosswalk(s) can be installed at the intersection of Laurel and W. Weaver St. There are currently curb cuts on all four corners of this intersection, and crosswalks would be reasonable and feasible at three of the four crossings. The crossing from the grassy triangle to the car wash is also an option, though unlikely that many pedestrians would cross at that location. However, having all four crosswalks painted in rainbow colors could serve as traffic calming and alert drivers to the presence of heavy pedestrian activity in the area. Any or all of these crossings would be implementable right away.





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