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Executive Summary
In preparation for hiring a consultant to conduct a comprehensive parking study as described on page 8, the Town of Carrboro has asked our capstone class to complete a parking study of the central business district (CBD). The focus areas include:

1. The administration of a parking survey to pedestrians in the Carrboro CBD
2. Collection of parking inventory data and conduction of parking turnover analysis
3. Comparison of parking supply and policies in Carrboro to other North Carolina cities
4. Analysis and recommendations of future parking

Findings
* Our survey results indicated sufficient public parking in Carrboro, but a lack of information on parking locations, a particular problem for those visiting the city.

* Our study of occupancy and turnover in four public lots in the CBD found that occupancy never surpassed the 85% standard used by traffic planners. We found that people often exceeded the two hour limit on parking in the public lots.

* In comparing parking supply and policies to a sample of other cities, Carrboro was on the lower end for parking spaces per capita in addition to more intricate parking policies but not necessarily more restrictive than other cities.

Recommendations
* According to survey responses, the town should provide better signage about the location of public parking.

* Our occupancy assessment suggests that additional parking in the Central Business District is unnecessary at this time due to the consistent availability parking across times and days.

* Finally, if parking becomes an issue in the future, the town should enforce its two-hour limit because many individuals ignore it without consequence.
Introduction

The Town of Carrboro is located in Orange County, North Carolina, just west of Chapel Hill. The town has grown from a population of approximately 17,000 in 2000 to about 19,600 today (U.S. Census Bureau, 2014). The Town’s proximity to Chapel Hill—home to the University of North Carolina at Chapel Hill—has helped boost activity in the downtown, although a majority of the growth arises from non-student patrons. With growth, however, come challenges, such as finding the right balance between providing sufficient parking to support local businesses and creating an environment that supports walking, biking and transit. This raises the question: is parking supply in Carrboro sufficient to meet demand?

To address this question, the Town of Carrboro has asked our capstone group to investigate parking in Carrboro, with the goal of understanding how people are getting to town, how long they are staying, and whether there is enough parking in town to accommodate their needs1. We also compared parking capacity in Carrboro to three other towns in North Carolina: Boone, New Bern and Davidson. Specifically, we compared the number of parking spaces per capita and the number of spaces proportional to the commercial space in the CBD.

At the start of the project, we met with Trish McGuire and Tina Moon at the Town of Carrboro’s Planning Department to discuss the projects goals and scope of work. We were given the opportunity to ask questions about parking within the town, current policies and standards, and goals for the future. Trish and Tina then gave us a walking tour of Carrboro, pointing out the public parking lots that would be included in our study. The meeting and tour allowed us to better understand the parking situation in Carrboro and clarify the scope of the project.

Studying parking is important because cars affect the environment, traffic, and the Town’s economy. Providing enough parking is essential for a thriving economy. However, excess parking occupies space that could otherwise be available for other uses, such as affordable housing, commercial space, civic uses, or parks. Whether directly or indirectly, the citizens of Carrboro are paying for parking through taxes and/or foregone

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1 A capstone is a class at the University of North Carolina which conducts a research project and presents findings at the end of the semester. This is a requirement to complete as an Environmental Major at the University.
revenues. The Town of Carrboro is interested in this study to determine whether the parking needs of the community are appropriately met. Carrboro and the surrounding area in general may also be interested in this project because it will allow them to understand how parking is used within the town.

**Figure 1: General Area of Study**

*The municipal lots near Open Eye Café, Acme, and Table will here-to be referred to as the Open Eye Lot, the Acme Lots, and the Table Lot, respectively.*
Previous Carrboro Studies and Plans

*UNC Chapel Hill Department of City Regional Planning Parking Study (2008)*

Carried out by a group of UNC Department of City and Regional Planning Masters students, the 2008 Carrboro parking study included four main parts: 1) an inventory of parking, 2) a survey of Carrboro business owners about their opinions on parking, 3) an analysis of parking demand, and 4) an assessment of parking turnover.

Business owners surveyed believed the town should not meter parking and that there was insufficient parking in the central business district. Business owners also raised concerns about future growth in the town and the consequent demand for parking that would ensue. The parking inventory indicated that sufficient parking was available in Carrboro and that most vehicles did not remain parked longer than three hours. The study concluded that future growth will have to be monitored in order to see if additional parking will eventually be needed.
Table 1: Existing Parking Policies and Regulation in Carrboro

<table>
<thead>
<tr>
<th>Lot/Street Name, as described in the Code</th>
<th>Time Limit</th>
<th>Town Code Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning at a point approximately 220 feet east of the intersection of the centerlines of Weaver Street and North Greensboro Street and running east for approximately 45 feet</td>
<td>One-hour parking only from 7:00 am to 5:30 pm</td>
<td>6-19(b)(3)(a)</td>
</tr>
<tr>
<td>Municipal parking lot located at 106 / 108 / 110 East Main Street (except for nine designated spaces in the lot that are reserved from 8:30 am to 5:30 pm for owners and tenants of 106 / 108 / 110 East Main St)</td>
<td>Two hours from 7:00 am to 5:30 pm</td>
<td>6-19(b)(4)(a)</td>
</tr>
<tr>
<td>Municipal parking lot located at the southeast corner of the intersection of Roberson Street and Main Street</td>
<td>Two hours from 7:00 am to 5:30 pm</td>
<td>6-19(b)(4)(b)</td>
</tr>
<tr>
<td>Municipal parking lot located at 303 West Weaver Street</td>
<td>Two hours from 7:00 am to 5:30 pm</td>
<td>6-19(b)(4)(d)</td>
</tr>
<tr>
<td>Municipal parkinglot located at the southwest corner of the intersection of Greensboro Street and Weaver Street is (Ten spaces are reserved for Carrboro Police Department vehicles from 8:30 a.m. to 5:30 pm and one space is for 30-minute parking only)</td>
<td>Reserved for visitors and staff of the Carrboro Century Center with ten designated spaces reserved for Carrboro Police Department vehicles from 8:30 a.m. to 5:30 p.m. and one designated space for parking no more than 30 minutes</td>
<td>6-19(b)(8)</td>
</tr>
<tr>
<td>Municipal parking lot located on the east side of the Carrboro Century Center</td>
<td>Reserved for Town of Carrboro vehicles only</td>
<td>6-19(b)(9)</td>
</tr>
<tr>
<td>Municipal parking lot located at Carrboro Town Hall and the Carrboro Town Commons</td>
<td>Four designated spaces are reserved for 2-hour visitor parking, eight designated spaces are reserved for Town vehicles, and one designated space is reserved for use as a loading zone</td>
<td>6-19(b)(10)</td>
</tr>
</tbody>
</table>

Source: (UNC DCRP, 2008)
Carrboro Vision

On March 25, 2000, the Town of Carrboro held a brainstorming meeting and invited the general public to express their vision for Carrboro. One hundred citizens participated in this meeting, and the Steering Committee, composed of representatives from the Board of Aldermen, advisory boards and several citizens, created “Carrboro Vision 2020” as a policy making document.

This vision divided policies into six broad categories: 1) Programming, Services, and Amenities, 2) Development, 3) Economic Development, 4) Transportation, 5) Environmental Protection and Promotion, and 6) Housing. These categories were further divided into smaller sections. For example, the Programming, Services, and Amenities category is subdivided into Recreation & Parks, Arts & Culture, Human Services, Town Services, and Adult Education. Under these subdivisions, various ideas are stated that align with the goals and ideas presented at the meeting. For instance, one subdivision of Economic Development is titled “Downtown Vitality.” Under this section, it states parking facilities should be improved to meet the needs of the community. It also suggests perimeter parking lots with shuttle service to the downtown area.

“Carrboro Vision” also included an appendix with scenarios of what Carrboro would look like if the suggested policies were implemented. Overall, Carrboro Vision suggests that additional parking would be needed in conjunction with growth through the year 2020.

Parking Plan Scope

Planning staff prepared a Parking Plan Scope of Work that was presented to the Board of Aldermen on February 11, 2014. The scope of work aims to highlight certain project milestones for parking in Carrboro, such as the hiring of a parking consultant, policy analysis, data collection, and mapping. Completion of a draft plan by the new town parking consultant is expected by spring of 2015. The plan is to focus on the central business district and neighborhoods adjacent to downtown, but will encompass the town as a whole. The plan will be used by the town as a guide for how to address parking needs.

The Parking Plan Scope will involve conducting a variety of surveys, including parking inventory studies, parking turnover studies, local business surveys, and citizen
surveys. This document is important to our capstone group because we have used many of the same methods in our project. Although our surveying has not been as in depth, we used the Parking Plan Scope to gather ideas and understand what the Town of Carrboro is looking for from our project. We did not engage local businesses, but have conducted surveys of citizens and an analysis of parking inventory and turnover.

Brief Summary of the Literature on Parking

We conducted a focused literature review on parking policies, regulations, demand, and in particular on the costs and benefits of free parking. We used Google and UNC library resources to search for relevant articles.

In his 1997 research study titled *The High Cost of Free Parking*, Donald Shoup, a leading expert on parking and the Director of the Institute of Transportation Studies at the University of California--Los Angeles, highlighted the unexpected costs associated with free parking. His research shows that minimum parking requirements can provide subsidies that inflate parking demand, and this inflated demand leads to updated minimum parking requirements that are even more unnecessary and unrealistic than before. His research shows that eliminating minimum parking requirements can reduce the cost of urban development, improve urban design, reduce automobile dependency, and restrain urban sprawl. He urges urban planners to focus on the quality of parking, not the quantity.

Shoup’s subsequent studies (1999, 2006, 2007) reiterate that there is no such thing as free parking. According to Shoup, the cost of free parking gets bundled into higher prices for other goods and services, which further distorts consumer choices toward cars and away from other options. Similarly, the Victoria Transportation Policy Institute (2008) conducted a comprehensive analysis of the status of parking across the United States. It concluded that excessive parking requirements increase the price of housing and more generally, the cost of living in cities, as a result of the externalized costs of parking.

Shoup argues that instead of increasing the supply of free parking, local governments should work towards reducing demand for it. Shoup reiterates these key points in *Cruising for Parking* (2007). In *Parking Reform Made Easy*, Willson (2013)
recommends some parking requirements because shared parking facilities allow parking spots to be filled more efficiently. However, Willson warns that an excess of parking requirements only benefit high-income people who can afford to drive and park, instead of allowing for more walking and biking infrastructure. In the United States, parking requirements vary based on location, which is why it is important to compare Carrboro’s parking requirements to those of similar towns. Parking requirements also specify how parking is provided, in addition to specifying the number of spaces necessary.

Willson makes arguments for and against parking requirements. Some advantages of parking requirements are that they reduce street congestion around the site, create a level playing field among developers, encourage growth of core areas, and reduce demands for public provision of parking. Some disadvantages of parking requirements are that they often encourage private vehicle use, do not support sustainability goals, directly and indirectly harm the environment, reduce density, and create inhospitable urban design.

Finally, a 2004 report, 3rd Edition Parking Generation by the Institute of Transportation Engineers (ITE), outlines parking guidelines for transportation engineers to follow. This study is important for Carrboro because it could provide a guideline for understanding parking demand in the town. According to the report, accurate estimation of parking demand is important because parking lots are expensive, consume valuable land, worsen water quality, can affect neighborhoods and businesses, can cause congestion and vehicle miles of travel, and can have a negative effect on the environment (ITE, 2004, 5). The report includes data for each of the 91 land uses for which parking demand data have been submitted to ITE.

**Methods**

**Comparison of Towns**

We compared parking policies and the number of parking spaces in Carrboro with three similar-sized towns in North Carolina: New Bern, Davidson, and Boone (Table 2). We chose these three towns because of their similarity, in some respects, to Carrboro. For example, New Bern’s population is slightly larger than Carrboro’s, while
Boone’s is about the same. Davidson—a small college town near Charlotte—has a slightly smaller downtown than Carrboro. We then contacted the planners in each town as well as relevant organizations such as the Chambers of Commerce for information about parking policies, total retail space, and total number of parking spaces. We also conducted research online to find key information about the various towns, such as population, amount of public/private parking, and square footage of retail space. We compared the population, size of downtown, total number of parking spaces in the central business district, square footage of retail space, and parking spaces per capita. This information was used to see how Carrboro compares to other towns in North Carolina. More information on each of the towns is included in the Appendix.

Survey

We conducted a survey of people we encountered in downtown Carrboro, e.g., in parking lots or on the sidewalk (see Appendix). The survey contained 14 questions about how people got to Carrboro, where they parked, for how long and what they generally thought about the availability of parking in Carrboro. A copy of the survey
questionnaire is included in the Appendix. We pre-tested the survey around Weaver Street Market and the public parking lot behind Open Eye Cafe and made necessary edits to the questionnaire. Survey data was collected from September 30, 2014 to November 2, 2014. In conducting the survey, we approached individuals in Carrboro at various times and days of the week in order to reach a cross-section of the population. A third of the surveys were collected on a Tuesday afternoon, another third were collected on a Thursday evening, and the final third were collected on a Sunday afternoon. We surveyed people at various locations throughout the Central Business District of Carrboro, specifically around Weaver Street Market, Open Eye Cafe, Harris Teeter and Bank of America. In conducting the survey, we approached people in the CBD and asked them if they would be willing to take a brief survey. If they agreed, we explained the purpose of our study and proceeded to ask them the survey questions. No more than a couple of people refused to take the survey. We gave each survey respondent the option of filling out the demographic information (questions 10 through 13) and the comment section (question 14) on their own. Question 14 was open ended and allowed respondents to provide any information opinions relevant to the study. Overall, we collected 85 complete surveys.

Capstone student conducting survey interview with respondent
Parking Inventory and Turnover

Our team produced an inventory of spaces in the public parking lots in Carrboro, including the Municipal Lot behind Open Eye Cafe, the Municipal Lot behind Acme restaurant, the Municipal Lot between Bank of America and Acme, the Municipal lot next to Table (Figure 3). We also conducted an analysis of parking turnover—how long each individual car remained in a parking space in the public lots. For the analysis of parking turnover, we took a walk-through video, using our cell phones, of all the parked cars in each lot at three hour intervals (9am, 12pm, 3pm, and 6pm), on October 26th, 27th, and November 14th. Like the survey, we pre-tested the turnover analysis method on October 24th to make sure that cars and license plates were readily visible so we could determine if a car in a particular space had left over the three hour period.

Capstone student conducting video inventory of parking space.
Figure 3: Public Parking Lot Sites of Turnover Evaluation

- Table Lot
- Acme Lots
- Open Eye Lot
Results

Comparison of Town Policies

Table 1 summarizes the Town of Carrboro’s parking policies for each of its public parking lots. Table 2, shown below, shows a comparison of relevant town characteristics. In particular, the four main public parking lots have a time restriction of two hours between 7:30 am and 5:30 pm. Similarly, New Bern offers three public parking lots. Boone offers 1 hour street parking in addition to 3 public parking lots, each with different parking restrictions. Davidson differs from all three towns as they offer the most diverse options of parking, including on-street parking in which time limits range from none to 2 hours, and off-street parking with time limits that range from 0 to 2 hours.

Table 2: Comparison of Towns

<table>
<thead>
<tr>
<th>Population</th>
<th>Boone</th>
<th>Davidson</th>
<th>New Bern</th>
<th>Carrboro</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>18,280</td>
<td>11,484</td>
<td>30,316</td>
<td>19.582</td>
</tr>
<tr>
<td>Public Parking Spaces</td>
<td>518</td>
<td>669</td>
<td>1322</td>
<td>586</td>
</tr>
<tr>
<td>Private Parking Spaces</td>
<td>1822</td>
<td>1261</td>
<td>1945</td>
<td>2177</td>
</tr>
<tr>
<td>Square Footage of Retail Space</td>
<td>215,000 sq. feet (est)</td>
<td>69,853 sq. feet</td>
<td>n/a</td>
<td>163,000 sq. feet (est)</td>
</tr>
<tr>
<td>Size of Downtown Area</td>
<td>0.1 sq. miles</td>
<td>0.6 sq. miles</td>
<td>0.6 sq. miles</td>
<td>0.3 sq. miles</td>
</tr>
<tr>
<td>Public Parking Spaces/Capita</td>
<td>0.029</td>
<td>0.058</td>
<td>0.044</td>
<td>0.030</td>
</tr>
<tr>
<td>Private Parking Spaces/Capita</td>
<td>0.103</td>
<td>0.110</td>
<td>0.064</td>
<td>0.111</td>
</tr>
<tr>
<td>Sources of Public Transportation</td>
<td>Fare Free Buses and Vans</td>
<td>Charlotte Area Transit System Buses (CATS)</td>
<td>Handicap and elderly transportation services (Craven Area Rural Transit System - CARTS)</td>
<td>Triangle Transit buses and Chapel Hill Transit provide local and regional bus options</td>
</tr>
</tbody>
</table>
Comparison of Minimum Parking Requirements

Boone imposes various minimum parking requirements for residential land uses. For example, a single-family dwelling requires 2 spaces, while a residence hall requires 1 space per dwelling unit. Various institutions, like halfway houses and homeless shelters require 1 space/4 beds. For commercial land uses, there are no minimum parking requirements. Instead, the town proposes maximum parking allowances. A restaurant’s maximum parking is 12 spaces/1000ft2 GFA (Town of Boone, 1997). Davidson has various minimum parking requirements based on the number of dwelling units. For example, Davidson requires one parking space per single-family dwelling. For restaurants, they require one space per four seats (Town of Davidson).

Carrboro’s requirements are similar to Boone and Davidson, they focus on gross floor area for commercial land uses and number of bedrooms for residential land uses. For commercial uses, the number of spaces varies on the specific land use. For example, 1 parking space per 200 square feet of gross floor area for commercial use and 1 space per bedroom for residential land uses is a common requirement (Town of Carrboro, 1980). However, Carrboro’s parking requirements are meant to be presumptive while allow for flexibility. In contrast, New Bern does not have any minimum parking requirements for its central business district, according to Kevin Robinson, New Bern’s city planner.

Survey Analysis

We surveyed forty-two females and forty-three males. Most respondents reported a household income between $0 and $49,999 and had come to Carrboro for dining/bars, shopping, or work. A majority (60%) of respondents used a car and parked in Carrboro, as shown in Figure 4 below. Some respondents indicated “other” as their method of transportation. Examples in this category included being dropped off, roller-blading/skateboarding, or using a scooter/motorcycle. Most of the individuals that were surveyed did not have trouble finding parking that day, as shown in Figure 11 in the Appendix. For those that parked, a little more than half of respondents parked in private or business lots while the rest parked in public or municipal lots, as shown below in Figure 5.
According to the survey, almost two-thirds of people surveyed thought Carrboro had enough parking as shown in Figure 6 below. In fact, when asked to rank on a scale of one to five how long it typically took them to find a parking spot, with one being not much time at all and five being a very long time, 24% said three followed by two and then one, depicted in Figure 7. For the day these individuals were surveyed, most said they planned on parking for two hours or less. However, Figure 13 (Appendix) shows some people planned on parking for as long as eight to ten hours and some even overnight. People’s answers may have been skewed if they were aware they were only allowed to park for two hours while others may have been conscious of the parking
restrictions and did not care that they were breaking them. Of all people surveyed, most would be willing to walk six to ten minutes from their parking spot to their destination followed by one to five minutes, shown in Figure 14 (Appendix). When asked why people used certain methods of transportation, most responses aligned with convenience, saving money, health benefits, proximity to home, and time saving. The remaining survey figures can be located in the Appendix.

Figure 6: Do you think Carrboro has enough public parking? (Survey Question #6)

![Pie chart showing responses to the survey question](Image)

Figure 7: One a scale of 1-5, with 1 being not much time at all and 5 being a very long time, how much time does it typically take for you to find a parking spot? (Survey Question #3)

![Bar chart showing responses to the survey question](Image)
Of the 85 surveys we collected, 30 respondents provided us with comments about Carrboro’s parking and other relevant suggestions and remarks. These comments are shown in Table 7 in the Appendix. One of the more common suggestions was to add more bike racks, as there are many people who bike to Carrboro, but not enough racks to accommodate them. This would further encourage more people to bike to Carrboro and reduce the demand for parking. Some individuals we surveyed stated that they were content with the availability of parking, while others expressed that Carrboro should have more parking. A couple respondents suggested making South Greensboro Street more bike and walking friendly. A few respondents said that overnight parking in business lots should be allowed, and that parking should be made more available for events such as the Farmers’ Market, festivals, parades, and other public events held in town.

**Turnover Analysis**

We conducted turnover analysis at the lots next to Open Eye Café, Table, and Acme, on a Saturday, Sunday, and Monday, to determine how many cars were parked and for long these cars stayed parked. Our parking inventory revealed that the parking lot next to Open Eye Cafe is the most highly utilized parking lot of those studied. As referenced in Table 3, shown below, the Open Eye lot remains fairly busy throughout the day on Saturday, Sunday, and Monday. The Open Eye Lot has the least number of open spots during the day, while at 9am and 6pm, which are at the start and end of the business day, Open Eye has more free spots, as shown below in Figure 8. Although there are signs posted to remind visitors of Carrboro not to stay parked for more than two hours, our study suggests that many people break these rules, often parking for four or more hours. Figure 9 shows that almost 60% of cars parked 2-4 hours, exceeding the limit in the Open Eye Lot on Saturday. While the percentage of cars exceeding the time limit is lower on Sunday and Monday, still almost a third of cars parked for 2-4 hours. Some cars even further exceeded the parking limit by staying for more than four hours. In the Open Eye Lot on Saturday, approximately 30% of cars stayed parked for more than four hours. However, on Sunday and Monday, less than 10% of cars stayed parked for more than four hours as shown in Figure 10.
Our study also revealed that the Table Lot is barely utilized on the weekend and has no peak hours, but is used during business hours from 9am-6pm on weekdays. In the Table Lot on Saturday and Sunday, less than 5% of cars parked for 2-4 hours, and less than 5% of cars parked for more than four hours. The remaining cars parked for less than two hours. On Monday, however, the lot was fuller. Almost 20% of cars stayed parked for 2-4 hours, and about 30% of cars stayed parked for more than 4 hours. This suggests that people are using these lots to stay parked for work or other errands for extended periods of time during the week as shown in Figures 9 and 10.

### Table 3: Peak Hours of Parking

<table>
<thead>
<tr>
<th></th>
<th>Table Lot</th>
<th>Acme Lot</th>
<th>Open Eye Lot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saturday</td>
<td>No peak hours</td>
<td>9am-12pm</td>
<td>9am-3pm</td>
</tr>
<tr>
<td>Sunday</td>
<td>No peak hours</td>
<td>12pm-6pm</td>
<td>12pm-6pm</td>
</tr>
<tr>
<td>Monday</td>
<td>12pm-6pm</td>
<td>9am-6pm</td>
<td>9am-6pm</td>
</tr>
</tbody>
</table>

### Figure 8: Average Percentage of Open Spots

![Figure 8: Average Percentage of Open Spots](image-url)
The peak hours for the Acme lots were morning on Saturdays, afternoon on Sunday, and all day on Monday. The Saturday morning parking flux may be due to the Farmer’s Market in Carrboro held on Saturday mornings from 9-12pm. The parking flux on Mondays may be because people in Carrboro use the lot to park for work or run extended errands. In the Acme Lot, less than 30% of cars parked for 2-4 hours each day, while around 30% parked for more than four hours on Saturday and Monday as shown.
above in Figures 9 and 10. Many of those using the lots park for several hours, showing that municipal lots are often being used as parking for work or extended errands. Figure 4 shows the percentage of open spots at Acme Lot throughout each day we conducted turnover inventory.

**Table 4: Percentage of Open Spots at Acme Lot**

<table>
<thead>
<tr>
<th></th>
<th>9am</th>
<th>12pm</th>
<th>3pm</th>
<th>6pm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saturday</td>
<td>47%</td>
<td>38%</td>
<td>67%</td>
<td>85%</td>
</tr>
<tr>
<td>Sunday</td>
<td>91%</td>
<td>32%</td>
<td>58%</td>
<td>20%</td>
</tr>
<tr>
<td>Monday</td>
<td>44%</td>
<td>38%</td>
<td>38%</td>
<td>55%</td>
</tr>
</tbody>
</table>

The parking inventory also revealed that many parking lots are not utilized to their full potential, as depicted above in Figure 8. The Table Lot was over 80% empty on Saturday and Sunday, and over 40% empty on Monday on average. The Acme Lot was over 50% open on average on weekends and 40% empty on Monday on average. The Open Eye Lot, which was generally the busiest lot, averaged 30% empty among Saturdays, Sundays, and Mondays. Table 5 shows the percentage of open spots at the Table Lot throughout each day we conducted turnover inventory.

**Table 5: Percentage of Open Spots at Table Lot**

<table>
<thead>
<tr>
<th></th>
<th>9am</th>
<th>12pm</th>
<th>3pm</th>
<th>6pm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saturday</td>
<td>71%</td>
<td>84%</td>
<td>90%</td>
<td>90%</td>
</tr>
<tr>
<td>Sunday</td>
<td>100%</td>
<td>81%</td>
<td>84%</td>
<td>100%</td>
</tr>
<tr>
<td>Monday</td>
<td>78%</td>
<td>34%</td>
<td>37%</td>
<td>28%</td>
</tr>
</tbody>
</table>

Although some respondents said that they were not able to find parking quickly in Carrboro, the parking inventory study indicates that finding parking should not be an issue if drivers are willing to walk about 6-10 minutes to their destination (Figure 14). Each of the lots had at least 30% of parking spots open on average, with some lots having significantly more than 30% open. The Table Lot was often empty. Table 6 shows
the percentage of open spots at Open Eye Lot throughout each day we conducted turnover inventory.

<table>
<thead>
<tr>
<th></th>
<th>9am</th>
<th>12pm</th>
<th>3pm</th>
<th>6pm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saturday</td>
<td>53%</td>
<td>0%</td>
<td>16%</td>
<td>55%</td>
</tr>
<tr>
<td>Sunday</td>
<td>74%</td>
<td>19%</td>
<td>16%</td>
<td>23%</td>
</tr>
<tr>
<td>Monday</td>
<td>51%</td>
<td>33%</td>
<td>26%</td>
<td>20%</td>
</tr>
</tbody>
</table>

**Recommendations**

Based on the survey and inventory results, our study suggests that Carrboro has enough parking to accommodate current needs. Parking lots often have open spots, even with visitors exceeding the two-hour parking limit. However, we believe that many Carrboro visitors are not properly informed about where they can and cannot park, and thus parking is not utilized to its full potential. Those that lack information about parking in Carrboro may conclude that there is not enough parking in Carrboro. This may deter visitors from coming to Carrboro, affecting downtown commerce.

We recommend increased signage for public lots, including signs directing visitors to major parking lots as cars enter the Central Business District (CBD). A map of available parking would also be useful in the Weaver Street area. This would allow pedestrians to look at the map and find out about parking that they could use in the area, increasing awareness and allowing for more utilization of parking lots in Carrboro. Newer lots such as the parking deck next to the Hampton Inn should be advertised so that visitors and citizens are aware of their parking options. The Hampton Inn Deck is privately owned, although the Town of Carrboro has leased some spots for public use. Although we did not specifically study turnover in the Hampton Inn Deck, we did not have many survey respondents mention the Hampton Inn Deck as their parking location. This suggests that many people may not know about the lot. The lot could be better utilized if increased signage informed drivers about the deck.
We also believe that installing more bike racks would be useful. Many people that we surveyed mentioned that Carrboro is a very walkable and bikeable town, but could use more bike racks. More bike racks would allow more people to bike to the CBD without worrying about where to leave their bike. More bike racks in central areas such as Weaver Street Market, Open Eye Café, and the Farmer’s Market, would allow for increased bike traffic.

Long term, we recommend moving Carrboro towards a more livable downtown, one that encourages walking and biking, obviating the need for additional parking. Expanding living in Carrboro would entail increasing opportunities to live in the downtown area. This includes building more residential units, possibly mixed use buildings with retail on the bottom and living spaces above. By creating housing above retail, residents will not have to travel as far or drive as often to meet their everyday needs. Many could live without a car, and therefore, without the need for a parking spot. In addition, expanding opportunities for living in downtown Carrboro will encourage healthier transportation methods, such as walking and biking. A part of this transition to a more livable downtown would be to enforce the current two-hour time limit on parking, for many individuals currently ignore it without consequence. Implementing the law would either 1) force more people to obey the time limit or 2) encourage individuals to explore other means of transportation (i.e. walking, biking, etc.)

Based on survey and turnover results, we do not believe that adding more parking is a necessary step at this time.

Acknowledgements

We would like to thank Trish McGuire and Tina Moon at the Town of Carrboro’s Planning Department for their guidance and direction in conducting our project.
Literature Cited


Appendix
Parking Survey

Date: ____________ Time: ____________ Location: _____________________

Purpose of survey: To evaluate whether or not Carrboro has enough public parking spaces based on public opinion throughout the downtown area.

1. How did you get to Carrboro today?
   Walk   Bus   Car   Bike   Other

2. Did you have trouble finding public parking in Carrboro today?
   Yes   No

3. On a scale of 1-5, with 1 being not much time at all and 5 being a very long time, how much time does it typically take for you to find a parking spot?
   1   2   3   4   5

4. Why did you use this method of transportation?

5. If a car, where did you park?

6. Do you think Carrboro has enough public parking?
   Yes   No

7. What is your reason for coming to Carrboro today?
   Work   Recreation   Shopping   Dining/Bars   Entertainment   Other

8. How long do you expect to be/have you been parked?

9. What is the longest amount of time you would be willing to walk from your parking spot to your destination?
   1-5 min   6-10 min   11-15 min   More than 15 min

10. Gender: Male   Female   Other

11. Where do you live?
    Carrboro   Chapel Hill   Hillsborough   Durham   Raleigh   Outside of NC   Other

12. Age Range: 16-25   26-35   36-45   45-64   65+

13. Household Income Range: $0 - 49,999   $50,000 - 99,999
    $100,000 - 149,999   $150,000+

14. If you have any other comments about parking in Carrboro, please let us know!

________________________________________________________________________

________________________________________________________________________
Further Information on Boone, Davidson, and New Bern

The county seat of Craven, New Bern was first settled in 1710 by Swiss and Palatine immigrants who named the city after the Swiss city of Bern. It served as the colonial capital of North Carolina and briefly as the state capital until Raleigh was given that designation. Throughout this period it was renowned as a wealthy trading city and even received the nickname “The Athens of the South.” The town is still renowned for its distinctive architecture and four historic districts that comprise much of the downtown. Combined with its waterfront, these features help generate much of the town’s tourism and attract many retirees to the area. The downtown features a variety of historic sites, shops and restaurants that comprise much of New Bern’s economy.

Located in western North Carolina, Boone, a town with a population of 17,122, is tucked away in the Blue Ridge Mountains. Boone was named after the American pioneer Daniel Boone and holds events to celebrate his life, including a portrayal of his life every summer at an outdoor amphitheater. The county seat of Boone is Watauga County. It also houses Appalachian State University which contributes to the economy and livelihood of the town.

Davidson is located in Mecklenburg County, North Carolina on Lake Norman. The town is home to Davidson College. It was founded in 1837 and named for Brigadier General William Lee Davidson, a Revolutionary War hero. After the arrival of the railroad, Davidson became a shipping point for cash crops such as cotton. The Linden Cotton Plant was the first factory in Davidson. Today, growth around Charlotte has stimulated Davidson’s growth. It has a small downtown with businesses, shops, and restaurants. Davidson College also brings students and families to the town. The Planning Ordinance of 2001 advocated for smart growth policies, such as pedestrian friendly areas, mixed use development, and connectivity. Davidson received National Register Historic District status in 2009 for the historic core of town, which includes downtown.
Figure 11: Survey Question #2
Did you have trouble finding public parking in Carrboro today?

Figure 12: Survey Question #7
What is your reason for coming to Carrboro today?
Figure 13: Survey Question #8

How long do you expect to be/have you been parked?

Figure 14: Survey Question #9

What is the longest amount of time you would be willing to walk from your parking spot to your destination?
**Figure 15: Survey Question #11**

Where do you live?

- Carrboro: 32
- Chapel Hill: 19
- Other: 16
- Durham: 15
- Hillsborough: 3

**Figure 16: Survey Question #12**

Age Range

- 16-25: 32
- 26-35: 19
- 36-45: 16
- 46-65: 15
- 65+: 3
### Table 7: Survey Comments (Question #14)

<table>
<thead>
<tr>
<th>Comment</th>
<th>Suggestion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Happy with public transportation.</td>
<td>Make parking paid, add more covered bike parking.</td>
</tr>
<tr>
<td>More parking please!</td>
<td>Let's get some more bike racks!</td>
</tr>
<tr>
<td>The hotel parking deck is a great option.</td>
<td>Its improved, if there’s growth it'll be a problem</td>
</tr>
<tr>
<td>I appreciate that it is free.</td>
<td>Got dropped off. People should learn to walk more!</td>
</tr>
<tr>
<td>More parking please!</td>
<td>Let's get some more bike racks!</td>
</tr>
<tr>
<td>More bike spots. We should not encourage parking and driving.</td>
<td>Don’t increase parking but rather optimize on the small town hominess and green efforts</td>
</tr>
<tr>
<td>There is limited parking in Carrboro but I'm glad because it encourages biking and walking.</td>
<td>Work on traffic in front of Weaver Street. Usually expects to have to drive around to find parking.</td>
</tr>
<tr>
<td>Need more places to leave car overnight.</td>
<td>It sucks.</td>
</tr>
<tr>
<td>I like the hotel parking a lot, it’s a nice secret!</td>
<td>Keep up the good work! I've lived here 32 years.</td>
</tr>
<tr>
<td>2 hour parking is not enforced.</td>
<td>Add more parking and more bike lanes.</td>
</tr>
<tr>
<td>There are a lot of people who don't live close who come by for events – need more event parking.</td>
<td>Work on making S. Greensboro biking and walking friendly.</td>
</tr>
<tr>
<td>Locals think there is enough parking because they know the area; people from out of town may not think the same.</td>
<td>Farmers market utilizes business lots, allow overnight parking in private lots when businesses are closed.</td>
</tr>
<tr>
<td>Goes to school at UNC and come to work in Carrboro.</td>
<td>Carrboro is too walkable/bikeable to be adding more parking.</td>
</tr>
<tr>
<td>They keep adding parking for no reason.</td>
<td>Carrboro has enough public parking for now</td>
</tr>
<tr>
<td>Needs more handicap spaces.</td>
<td>Parking will only get worse with time</td>
</tr>
<tr>
<td>Problem with Carrboro parking is that there are lots of private lots. I need to move my car frequently to not be towed. It’s geographically restricting.</td>
<td>There is enough parking, but it needs to be advertised more.</td>
</tr>
</tbody>
</table>