Carrboro Parking Study

Executive Summary

Since the 1980's the Town of Carrboro has gradually acquired or leased properties to use as municipal parking lots, and currently maintains 710 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 use. 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 Alderman 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.

Public Engagement

VHB prepared a public engagement plan to address the project vision and goals. 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. More than 600 individuals responded to the online survey, and feedback received during these public engagement activities helped to inform the planning process and shape the final plan recommendations.

Existing Conditions

VHB used a field inventory of all parking spaces generated by the Town to determine the patterns of existing parking utilization. Private parking accounted for four out of every five total parking total spaces, public parking accounted for the remaining 18%. Public parking includes 435 spaces that are leased by the Town within four (4) lots and one (1) parking deck. The Town of Carrboro owns 275 spaces within four (4) parking lots, which accounts for 7% of total parking spaces and 39% of the total public spaces.

Parking Spaces by Ownership

Parking Type	Spaces	% of Total
Public-owned	275	7%
Public-leased	435	11%
Private	3,293	82%
Total	**4,003**	

The total number of parked cars was 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.

Observed Parked Vehicles by Time of Day

	CARS			OCCUPANCY		
Count Periods	January	April	Saturday	January	April	Saturday
9 AM to 11 AM	1,858	1,942	1,493	49%	49%	37%
11 AM to 1 PM	2,029	2,122	1,475	51%	53%	37%
2 PM to 5 PM	1,699	1,879	1,487	42%	47%	37%
6 PM to 9 PM	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 the project team observed 466 vehicles parking within public lots during the evening period, an occupancy rate of 66%. 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

	CARS			OCCUPANCY		
Count Periods	January	April	Saturday	January	April	Saturday
9 AM to 11 AM	304	354	361	43%	50%	51%
11 AM to 1 PM	356	368	285	50%	52%	40%
2 PM to 5 PM	339	312	240	48%	44%	34%
6 PM to 9 PM	331	466	457	47%	66%	64%

Note: Parking counts include only public lots (710 spaces in total).

The shaded cell represents the peak period (466 cars for 710 public spaces is 66% 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 of the full report. In general terms, the high demand areas during the morning period were near O2 Fitness and Rise Biscuit and Donuts, shifting to the restaurant-dense area within the central portion of Carrboro during the 11-1 PM period. In the mid-afternoon the high demand areas relatively disappear, or become more balanced. After 6 PM the central public and private parking lots that are close to dinner restaurants are in high demand.

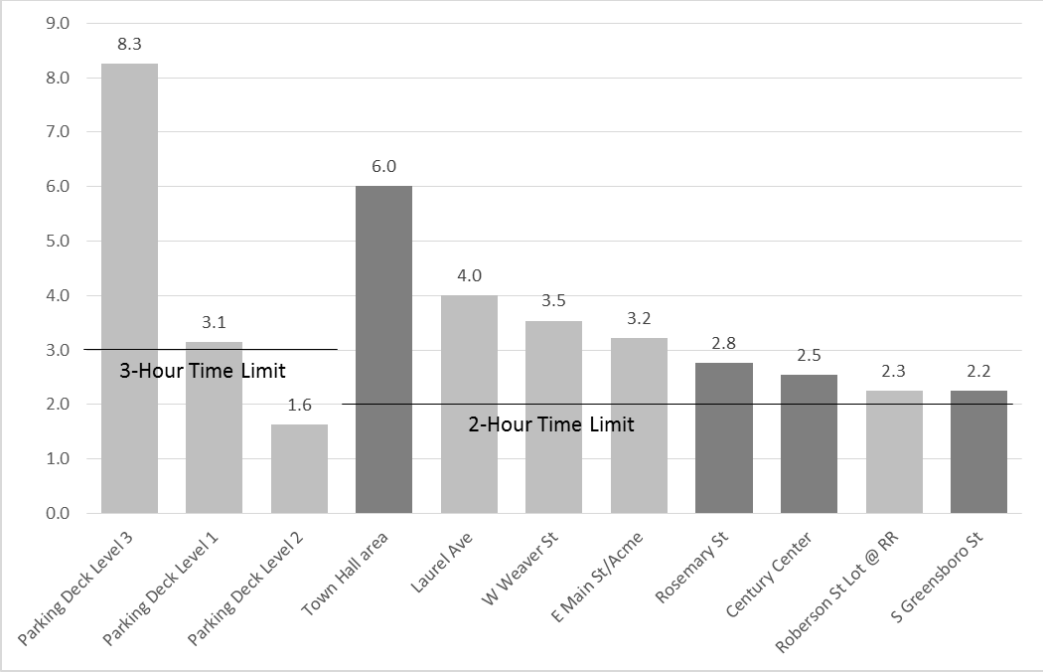
Length of Stay

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 these 710 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. VHB requested a list of Town of Carrboro employee license plates to exclude from the length of stay analysis.

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 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 3rd 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 lengths of stay.

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 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 the Town of Carrboro and professional judgement, which are described in more detail within the Future Conditions section of the full report. **This quantitative analysis does not support the need for the Town to construct additional parking spaces in the next five to ten years.**

Existing Surplus

Applying a desired maximum parking lot occupancy of 85%, the current combined public and private parking available in downtown Carrboro can optimally 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 is 1,280.** Public parking lots account for a

surplus of 236 spaces, while private lots have more than four-times that. These are surplus spaces for a typical weekday, though they are often filled during special events.

Existing Parking Surplus

Scenario	Spaces	Targeted Occupancy	Effective Capacity	Actual Demand (Cars)	Existing Surplus
Public	710	85%	604	368	236
Private	3,293	85%	2,798	1,754	1,044
Total	**4,003**	**85%**	**3,402**	**2,122**	**1,280**

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 (3,402 – 2,122).

Future Surplus

Future parking supply is expected to increase by +655 spaces as a result of the ten anticipated future projects, as required by the Town Land Use Ordinance. By 2021 downtown Carrboro may support more than 3,942 parked cars in its public and private lots, which represents the same target maximum parking lot occupancy of 85% that was applied to the existing surplus calculation. VHB estimates the future parking demand to be +899 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 surplus of 189 spaces, while private lots have nearly four-times as many surplus spaces.

Future Parking Surplus

Scenario	Future Spaces	Targeted Occupancy	Effective Capacity	Future Demand	Future Surplus
Public	839	85%	713	524	189
Private	3,799	85%	3,229	2,497	732
Total	**4,638**	**85%**	**3,942**	**3,021**	**921**

Note: Future Spaces estimated from future development projects.
Effective Capacity is the total Supply x Targeted Occupancy (4,638 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 (3,942 – 3,021).

Management Strategies

Rather than construct new parking lots or structured parking, **the Town should choose to more effectively manage its existing supply of 710 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.

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, which is typically the first option for suburban-style developments. Public opinions received during the public engagement phase suggest that citizens of Carrboro desire a variety of approaches, including the "build more parking" solution that was suggested by some participants.

A full discussion of potential strategies is included in the Management Strategies section of the full report. The five (5) potential strategies that are expected to have the most significant impact are:

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 low 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.