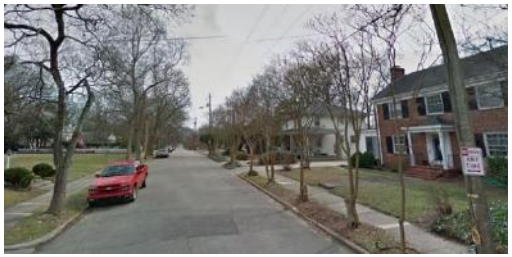
Hillsborough Street Corridor

PARKING STUDY



August 2018 | Version 4

PREPARED BY:

Kimley»Horn

HILLSBOROUGH STREET
COMMUNITY SERVICE CORPORATION

September 1, 2018

Dear Greater Hillsborough Street Community:

The Hillsborough Street Community Service Corporation (HSCSC) started providing programs and services in 2010 with the mission of supporting continued economic and community development along the corridor. Over the past near-decade, much has been accomplished and the area has seen tremendous growth and redevelopment. From the start, parking has, by far, been the number one issue shared with us by property owners, merchants, residents, visitors, employees and customers of our street.

After years of effort to build consensus around focusing attention on parking, we are excited to share that the three major stakeholders on our corridor (the City of Raleigh, NC State University and the HSCSC - on behalf of the property owners, merchants and residents) have come together to address the issues and challenges of parking for our busy, commercial community.

The number one challenge according to our merchants is the limited number of parking spaces in and around the core area of our corridor - the space next to NC State' s campus. Parking has been an issue for decades, and as the city and community has grown, so has this challenge. Customers, visitors and employees all share with us that parking is difficult, if not impossible, and the lack of available parking is a major factor for them to go elsewhere to work, shop, dine or visit.

Like most University communities, parking on and around Hillsborough Street has its challenges, especially during the academic year when students are on campus. When classes are not in session (over the winter holiday, spring break and the summer), parking spaces are much more readily available. When classes are in session, students flood the limited parking spaces available, leaving few options for other visitors and customers.

It's understood that students want to park as close to campus as possible, for extended periods of time, in any/every place that even remotely resembles a parking space. They often do so while attempting to pay the least amount possible, even risking and getting parking tickets. These conditions have been observed and reported to us by our merchants and property owners' countless times.

These are the challenges we live with, they are not unusual, and they are real.

As a result, in partnership with the City of Raleigh and NC State, we have engaged Kimley-Horn, and their experienced team of parking professionals, to produce a study of the supply and demand for parking in and around Hillsborough St. They have also produced a list of actionable recommendations for policy changes and strategies that the city and community can follow to create a more positive parking experience.

We know building a positive parking environment will take time and will not develop by one policy change alone. This will require the combination of many initiatives implemented over time. We are excited, together with our partners within the City of Raleigh and NC State, to take the first of many steps to address the number one issue confronting our community's economic health and sustainability.

Sincerely,

Joe Whitehouse
Board President

Jeff Murison | Executive Director | jeff@hillsboroughstreet.org
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CONTENTS

Executive Summary 1
Future Scenarios 3
Recommendations 4
Recommendation Phasing 9
Hillsborough Street Corridor 11
East Zone 12
West Zone 14
Central Zones 16
Central-A Zone 16
Central-B Zone 18
Parking Program Analysis 20
Parking Revenues 20
Parking Enforcement 22
Existing Parking Demands 23
Perceptions of Parking 33
Key Themes 33
The Future of Hillsborough Street 37
Scenario 1. Near Term Developments 37
Scenario 2. Long Term Developments 51

Recommendations and Strategies 65
Immediate and Ongoing 65
Short Term (1-2 Years) 67
Medium Term (2-4 Years) 70
Long Term (Greater than 4 Years 71
Recommendations Phasing 75
Appendix 77

EXECUTIVE SUMMARY

In July 2017, The Hillsborough Street Community Service Corporation (HSCSC) commissioned Kimley-Horn and Associates, Inc. to develop a Park+ model for the Hillsborough Street corridor. The purpose of this study was to address a decades old perception that parking is both challenging and detrimental to the growth of the Hillsborough Street corridor. Numerous surveys and business outreach efforts have listed parking as the primary challenge to business success along the corridor. Through the analysis of data, outreach to stakeholders, and prediction of parking demands along the corridor, this study aims to identify short, medium, and long term solutions to lessen this parking challenge.

The study area for the Hillsborough Street component of the model is generally bounded by Mayo Street to the east, the railroad tracks and Hillsborough Street to the south, Beryl Road to the west and Clark Avenue and Everett Avenue to the north. The assessment also includes the NC State campus south of Hillsborough Street. The modeling for the campus was completed prior to the initiation of this project and serves as the foundation for the expansion into the Hillsborough Street area.

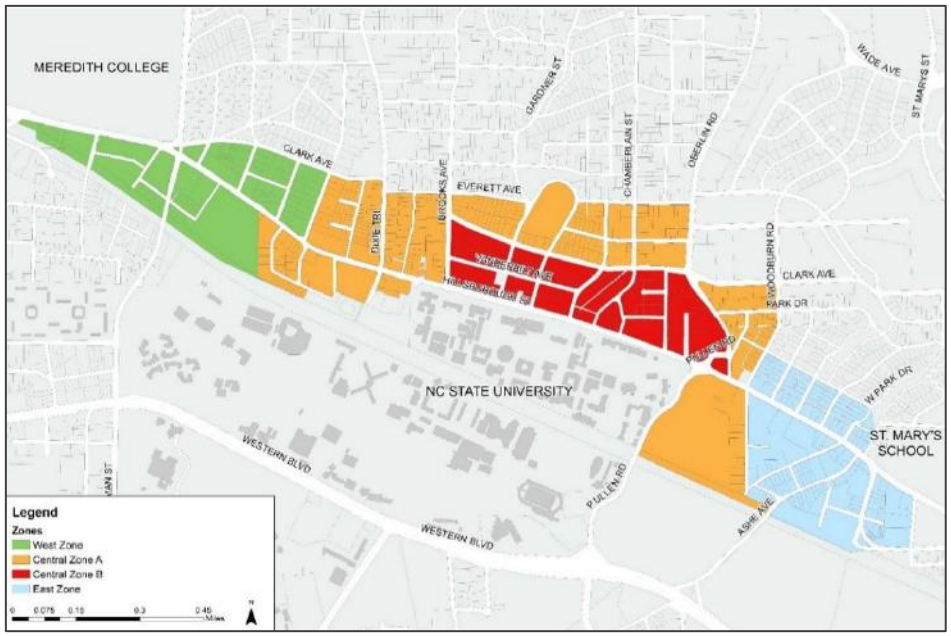


Figure E1 - Study Area

As part of the study, Kimley-Horn, assisted by North Carolina State University, collected existing occupancy data along the corridor. This data was used to model existing conditions as well as several future scenarios. To understand parking at a more granular level, the study area was split into four zones: the West Zone, the East Zone, the Central-A Zone and the Central-B Zone, as shown in the map to the right.

The overall peak for the study area was observed to occur during the midday collection at 46% occupied. There was a peak observation of 3,131 occupied spaces versus 7,132 total spaces, resulting in a study area wide surplus of 4,001 spaces. Of the study area's 7,132 total parking spaces, 61% are privately owned and operated. When considering that a majority of the parking supply in the area is privately occupied, it critical to look deeper into the types of parking found in the study area to understand the true nature of the parking problems. Based on a deeper review of collected data, the study area has the following conditions:

- On-street parking throughout the entire study area (including residential and paid street parking) is 46% occupied.
- Public off-street parking is 68% occupied.
- Private off-street is 38% occupied.

- Despite the overall appearance of parking availability based on the above data points, the core portions of the study area around Hillsborough Street, Oberlin Road, and Dixie Trail experience excessive public parking demands around the restaurant, retail, and office uses in this area.

- Parking in the core area is also constrained by a lack of available public parking off-street. Most, if not all, of the spaces within a proximate walking distance of Hillsborough Street are private in nature, serving only the businesses that provide those spaces. In many cases, these spaces are regularly underutilized, but because of the restricted nature of the spaces, they are unavailable to the patron wishing to access businesses along Hillsborough Street. This, combined with the high demand for the limited public spaces that are available, creates a localized parking challenge that limits effectiveness of finding parking in the most desirable portion of the corridor, further fueling the perception of a lack of parking.

	Type of Facility	Supply	Observed Demand	Surplus	Existing Occupancy
East	On-Street	428	230	198	54%
	Off-Street, Public	0	-	-	-
	Off-Street, Private	1,623	738	885	45%
	TOTAL	2,051	968	1,083	47%
West	On-Street	221	42	179	19%
	Off-Street, Public	0	-	-	-
	Off-Street, Private	679	181	498	27%
	TOTAL	900	223	677	25%
Central-A	On-Street	864	364	500	42%
	Off-Street, Public	669	448	221	67%
	Off-Street, Private	1,337	504	833	38%
	TOTAL	2,870	1,316	1,554	46%
Central-B	On-Street	433	262	171	61%
	Off-Street, Public	163	118	45	72%
	Off-Street, Private	715	244	471	34%
	TOTAL	1,311	624	687	48%
Study Area	On-Street	1,946	898	1,048	46%
	Off-Street, Public	832	566	266	68%
	Off-Street, Private	4,354	1,667	2,687	38%
	TOTAL	7,132	3,131	4,001	44%

- NC State's North Campus, which borders Hillsborough Street, has very high demand which often spills over onto the Hillsborough Street corridor and the surrounding neighborhoods of the Central-B Zone. In total, Central-B's on-street and public off-street are 61% and 72% respectively occupied, with Hillsborough Street itself more than 75% occupied.

As seen in **Table E-**1 below, the Central-B zone has the highest overall observed occupancies due to the high demand from the shops and restaurants along Hillsborough Street as well as its relation to NC State.

FUTURE SCENARIOS

The project team identified two scenarios to project the future of Hillsborough Street. The first scenario includes five known projects that are currently underway and five parcels identified for near-term mixed-use developments. The second scenario identifies twenty-six parcels that are likely to be redeveloped at some point in the future. Associated privately allocated parking spaces were added to specific developments in Scenario 1.

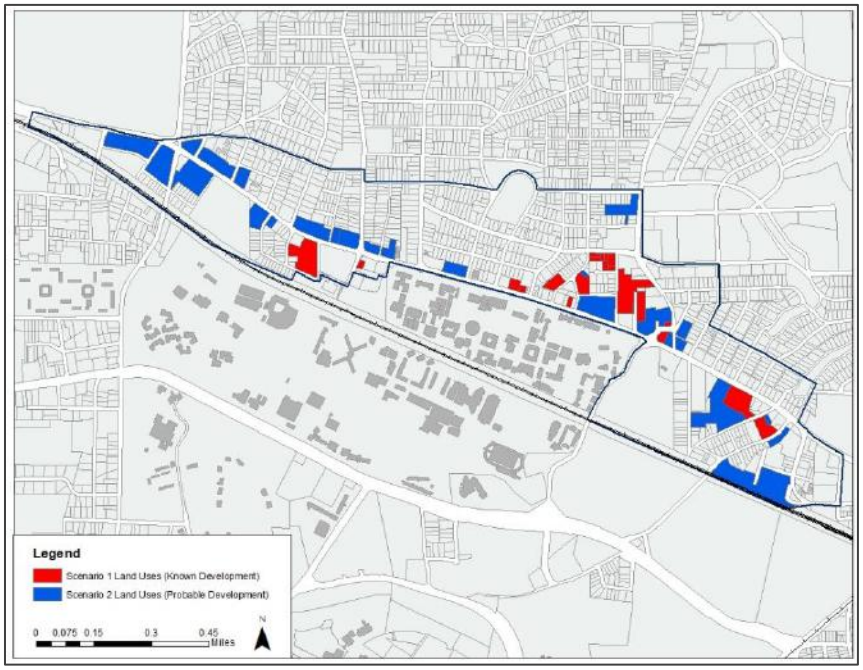
In each of the scenarios, the proposed parcels were assumed to consist of a five-story building, with a combination of retail, office, and residential uses. The parking demands of the future developments were analyzed under three possible combinations:

- Multifamily[1] and ground floor retail
- Office and ground floor retail
- A mixed combination of multifamily, office, and ground floor retail.

Most of these proposed developments were modeled without the addition of on-site parking to evaluate the impacts to the public parking system. While most sites would likely opt to build some parking, this also mimics the current variance that allows for smaller scale residential developments to be constructed without dedicated parking.

In each version of Scenario 1, the study area continued to operate efficiently. However, the availability of public parking in the high demand areas (Central A and B) began to decrease. In Scenario 2, the majority of available public parking (especially in the two central zones) exceeded efficient occupancy levels. The second scenario shows what could happen to the corridor if policies that allow for little to no parking to be built in conjunction to smaller condo and mixed used developments are not evaluated and potentially modified.

Figure E2 - Scenario 1 & 2 Land Uses



[1] *Each residential unit was presumed to be approximately 1,000 square feet.*

RECOMMENDATIONS

To help mitigate current and future demand issues, a series of recommendations were developed for the corridor. The following sections present a general summary of the recommendations, organized by phase of implementation

1. IMMEDIATE AND ONGOING

Private Development Parking

New developments have the potential to generate a large amount of new parking demand. In the recent past, smaller-scale multifamily developments have been built without parking due to development incentives. The City should evaluate the benefits and impacts of the current multifamily variance and consider modification to alleviate potential impacts to the corridor.

Action Items

- Monitor demands associated with residential developments
- Consider modifying variance that allows for reduced parking

2. SHORT TERM (1-2 YEARS)

Wayfinding and Signage

The findings of this study indicate that there is available parking along the corridor. This was echoed in public outreach efforts, indicating that while parking is available, it was difficult to find. This is largely due to a lack of knowledge of the location and availability of this parking. While there is some wayfinding and signage along the corridor, there is has been no coordinated effort to streamline that information and provide it in a meaningful way to the public. The Hillsborough Street Community Service Corporation, in conjunction with the partnership described in the previous section, should develop a coordinated wayfinding and signage plan that brands the parking system along the corridor and provides consistent information related to the parking system.

Action Items

- Consistent branding for publicly available facilities, minimizing mixed messaging from various entities
- Distinguish between day and night availability with simple signage (example above from Seattle Department of Transportation)
- Dynamic information/communication, including websites, smartphone applications, and parking information on mapping programs (GoogleMaps, Waze, etc)

Neighborhood Parking Demand Management

There are several active residential communities adjacent to the Hillsborough Street corridor. The demands along Hillsborough Street have begun to spillover into these residential areas, including both commercial and academic parking demands. This is likely to continue as the area keeps growing. The City of Raleigh currently has neighborhood permit parking areas that govern some of these streets, and it is possible that additional permit areas will need to be instituted to manage demands in the area.

The concept of a parking benefit district could be enacted, especially in areas that are heavier in rental based units. The benefit district is a common concept in residential areas adjacent to commercial districts where the application of paid parking on neighborhood streets is used to manage spillover demand while allowing for some expansion of peak hour parking capacity on the neighborhood street network. The benefit district will collect revenues – either through the implementation of parking meters or overlay of a pay-by-cell zone – and use the excess revenue (after covering operating costs) to reinvest into the neighborhood area in the form of streetscape, transportation enhancements, and neighborhood beautification. These districts can still have restricted evening parking to allow for resident parking on-streets, but allows for usage of the street network for parking demands generated from the commercial district during the day.

Action Items

- Establish new neighborhood parking permit areas
- Implement parking meters in street areas adjacent to Hillsborough Street
- Create parking benefit districts, especially for Central A and East zones

Employee Parking Permit Program

Employee parking within the Central-A and B zones was a challenge mentioned at public meetings by various merchants and by members of the steering committee. Currently, many employees and employers park for long stretches on-street directly in front of or adjacent to their business. While this is convenient, it has created a turnover issue that prevents patrons from parking in those spaces and potentially from visiting the business. One way to help combat this issue is to transform an underutilized parking lot into an employee parking lot that would be shared by businesses along the corridor. Employees would be issued a permit which would allow them to park in the lot during their shift hours. Anyone without a permit would be fined. Likewise, those with an employee parking permit who are found to be parking on-street would be fined to discourage this practice.

Additionally, employees should be encouraged to use park and rides located further from the corridor and take the NC State Wolfline to Hillsborough Street. The Wolfline is free to the public and offers a route to the Carter Finley Park & Ride which provides direct access to the center of Hillsborough Street. While the route is not 24 hours and does not operate during the summer months, it could help to provide alternative transportation for most of the day during the highest peak demand of the year when the majority of students are on NC State's campus.

Shared Parking Pilot Program

The introduction of a shared parking system between public and private entities is not expected to be an easy implementation. There will likely be hesitation on the part of private property and business owners whose primary objective is serving their clientele and maintaining strong on-site business. With this in mind, the partners in this process should consider a pilot of shared parking within the study area to evaluate and communicate the benefits of a shared parking arrangement. If this smaller pilot is successful, it will make a wider-scale implementation more feasible.

3. MEDIUM TERM (2-4 YEARS)

Parking Pricing & Regulations

Considerations should be made to adjust existing policies and practices to support a more balanced approach to parking demand management, primarily along Hillsborough Street. Two main considerations are the implementation of dynamic data-driven pricing and extension of parking enforcement hours. Dynamic pricing is the process of changing parking pricing based on the day of the week or time of day to better manage parking demand ebbs and flows. This type of system, as well as extended enforcement hours, works well in areas of high demand such as the Central-B district. Standard enforcement hours (8 AM to 5 PM) generally miss the peak parking demands for restaurant or entertainment driven districts like that of Central-B. Demands for these uses extend into the evening and parking at the curbside is often abused immediately after the final enforcement hour passes, making it difficult for patrons looking to access businesses for dinner or entertainment uses to find available parking. This policy may require dedicated enforcement staff along the Hillsborough Street corridor to manage the desire for better turnover. This additional enforcement could also support a larger shared parking system, which would need intentional and dedicated management.

Action Items

- Implement dynamic or demand based pricing at parking meters
- Implement extended enforcement hours
- Consider additional and/or dedicated enforcement staff for the area

4. LONG TERM (GREATER THAN 4 YEARS)

Shared Parking

Shared parking is the process by which two land uses utilize the same parking facility without conflict, allowing for more optimal use of parking supply so that parking is better utilized. This process works best when nearby land uses have different peaking conditions, such as a restaurant and a church, or office and residential. Using shared parking would help to leverage underutilized lots while providing additional public parking supply. For the Hillsborough Street corridor, a partnership between the Hillsborough Street Community Service Corporation, the City of Raleigh, NC State, and the private sector could yield existing and long-term benefits towards better balancing parking demands. The partnership could provide the following benefits:

- Coordination and management of available supply
- Liability coverage for participants, reducing concerns from mixed usage of parking facilities
- Brokering shared parking agreements based on known availability and need
- Marketing of the shared parking program
- Collection of parking revenues
    - On-site parking attendants
    - Parking meters/paystations
    - Pay by phone
- Enforcement of parking spaces

Additionally, the concept of shared parking should not be limited to public-private partnerships. If existing businesses can find opportunities to share parking between their clients and employees, the same benefits of a larger shared parking system could be realized (albeit, at a smaller scale). If the intent of implementing shared parking is better utilization of existing underutilized spaces, any approach to sharing should be a positive step in that direction.

Action Items

- Form partnership
- Identify pilot location and pilot parameters
- Identify other areas within the study area for potential shared parking

Additional Parking Supply

Based on the results of this study, a singular new standalone parking structure will likely not be the perfect solution for existing and future parking problems along Hillsborough Street. New standalone public parking is defined as a parking structure that is built and managed by one entity (City of Raleigh, HSCSC, etc.) for the express purpose of serving one customer (transient parkers). The long linear nature of the corridor does not lend itself to a singular location that would optimally serve many land uses along the corridor. For this reason, the construction of a new standalone public parking structure would likely not yield optimal results.

However, there are some opportunities to add parking supply in a meaningful way that would help contribute to the success of Hillsborough Street and the surrounding area. The first is a partnership with other entities in the area. The most common partnership would be of the public-private variety in which a new development that is intending to build off-street supply might be a good partner candidate to add some public-facing spaces at a lowered cost. This sharing of spaces would help to alleviate demand constraints in areas with high intensity of activity and reduce the burden on the public entity paying for parking and likely help create more activity at the mixed-use development. Similarly, a partnership between two public entities such as HSCSC and either the City of Raleigh or NC State could yield distinct advantages, with multiple uses for the parking based on peak demand needs. For example, NC State academic demands could sustain efficient occupancy levels throughout the day, while commercial and residential needs could sustain nighttime parking demands.

Finally, new developments that overbuild parking capacity might be good candidates for leasing or sharing unused spaces. The projections from Scenario 1 indicate that many of the proposed new developments could see excess spaces in their proposed parking facilities. If this is actually the case, these underutilized spaces provide opportunities to add to the shared parking supply defined in the first recommendation.

A few potential sites for shared parking supply include the North Hall lot, the Brooks lot, and any of the designated new developments identified in the future analysis component of this study.

Action Items

- Look for partnerships with other entities
    - New developments
    - City of Raleigh
    - NC State University

RECOMMENDATION PHASING

Table E2 provides phasing for each of the recommendations as well as some of the steps within the recommendation, the corresponding zone, responsible entity, cost estimates, and general return on investment. Recommendations are listed from short term to long term to help guide the steering committee following this study.

Table E2 - Recommendations Phasing

Recommendation	Zone	Responsible Entity	Cost Estimate	Return on Investment
Immediate and Ongoing				
Private development parking code	All Zones	HSCSC & City of Raleigh	City staff review/evaluation	If codes are right-sized to mimic actual need, an efficient and usable amount of parking could be developed in the area
Hillsborough Parking Task Force	All Zones	HSCSC, City of Raleigh, & NCSU	Staff time	Ongoing evaluation and review of parking issues and opportunities along the corridor
Short Term (1-2 Years)				
Improve wayfinding and signage	All Zones	HSCSC, City of Raleigh, & NCSU		*See below*
Consistent branding for public parking	All Zones	HSCSC, City of Raleigh, & NCSU	$500-$1,000 per trailblazer sign $2,500 - $10,000 for branded signage	More efficient use of existing underutilized parking assets, less need to build or lease private parking
Distinguish between day and night parking	All Zones	HSCSC, City of Raleigh, & NCSU	$250 - $750 per sign installation	More efficient use of nighttime parking
Expand neighborhood permit program	Central-A & East	HSCSC & City of Raleigh	City staff time to evaluate	Improved protection of residential spaces from spillover parking demands
Installation and enforcement of metered parking	Central-A	HSCSC & City of Raleigh	$5,000 - $10,000 per	Balance of parking demands to allow commercial patrons to park in neighborhood areas with revenue returned to neighborhoods
Employee parking permit program	Central-B	HSCSC & City of Raleigh	Cost to lease spaces in private facilities or use of NCSU lots	Move employee parking demands from high demand areas and provide a consistent and reasonable place for employees to park
Shared parking pilot program	All Zones	HSCSC, City of Raleigh, & NCSU	Cost to lease and operate spaces (likely passed on to a private parking management company)	Ability to test the effectiveness of shared parking, with the opportunity to communicate successes and benefits

Medium Term (2-4 Years)				
Dynamic information/communication	All Zones	HSCSC, City of Raleigh, & NCSU	$5,000 - $10,000 for parking technologies to support database of static information	More efficient use and navigation to available existing parking, less need to build or lease new parking
Pricing/regulations to influence behavior	Central-A & Central-B	HSCSC & City of Raleigh		
Implement dynamic or demand based pricing	Central-B	HSCSC & City of Raleigh	$40,000 - $70,000 to evaluate parameters of a dynamic pricing system and establish rates and policies Potential need to invest in new meter technology	Balance of parking demand distribution between high demand and low demand areas Creation of available spaces and turnover in high demand areas
Implement extended enforcement hours	Central-A & Central-B	HSCSC & City of Raleigh	Additional enforcement staffing for Hillsborough Street area	Improved turnover and availability in early evening hours for restaurants and retail uses
Long Term (Greater than 4 years)				
Shared parking program	All Zones	HSCSC, City of Raleigh, & NCSU	Cost to lease and operate spaces (likely passed on to a private parking management company)	Better use of underutilized private parking spaces, less need to build parking spaces
Additional parking supply	Central-A & Central-B	HSCSC & City of Raleigh	$15,000-30,000 per parking space	Likely not cost effective without public-private partnerships

HILLSBOROUGH STREET CORRIDOR

In July 2017, The Hillsborough Street Community Service Corporation (HSCSC) commissioned Kimley-Horn and Associates, Inc. to develop a Park+ model for the Hillsborough Street corridor. The purpose of this study was to address a decades old perception that parking is both challenging and detrimental to the growth of the Hillsborough Street corridor. Numerous surveys and business outreach efforts have listed parking as the primary challenge to business success along the corridor. Through the analysis of data, outreach to stakeholders, and prediction of parking demands along the corridor, this study aims to identify short, medium, and long term solutions to lessen this parking challenge. The Hillsborough Street corridor is an arts, culture, and recreation destination located north of North Carolina State University and west of Downtown Raleigh. **Figure 1** below provides the primary study area map broken down into four subareas. The subareas are based on the characteristics of the land uses and parking behaviors unique to each, with each analyzed and discussed in greater detail within the report.

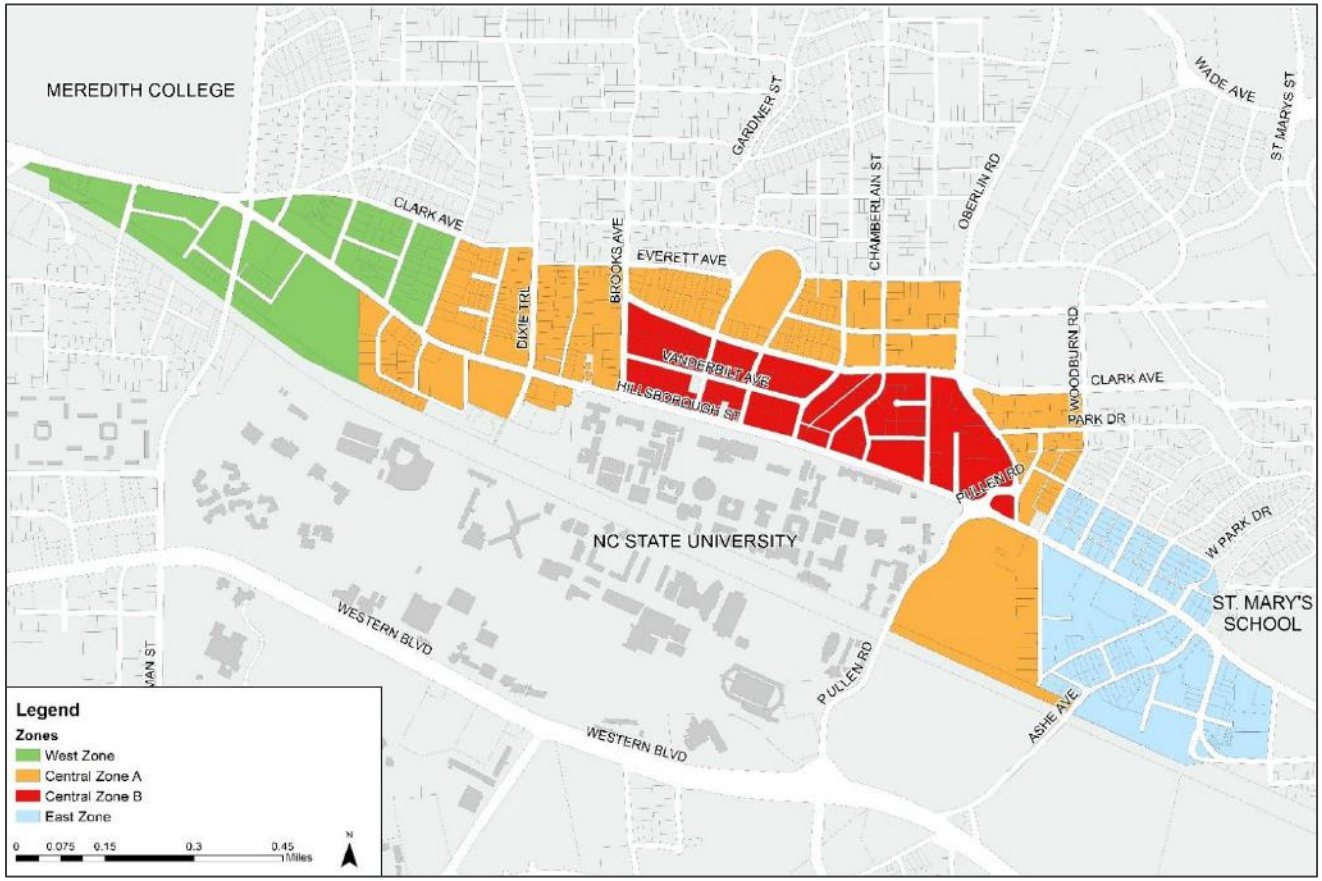


Figure 1 - Study Area

EAST ZONE

The East zone of the Hillsborough Street study area has the greatest concentration of single family housing. Several banks and other financial institutions are located along the northern boundary of the subarea, which delineate the study area from the large shopping center, Cameron Village, north of Clark Avenue. The properties lining Hillsborough Street through the East zone consist of low density hotels and small businesses. The western boundary of the subarea meets the Pullen Park baseball fields and the Theater in the Park. **Table** below details the land uses included in the East zone of the study area.

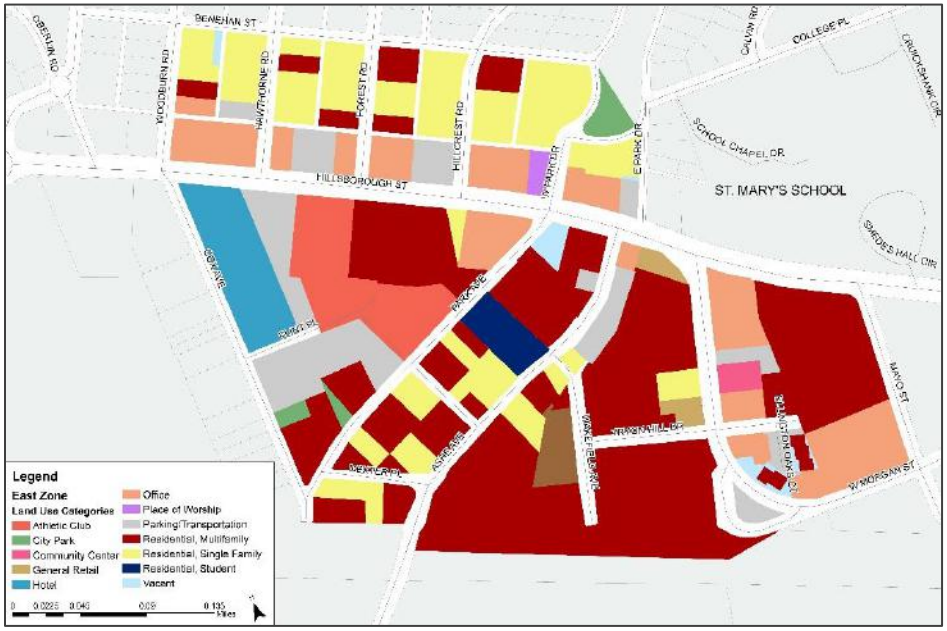


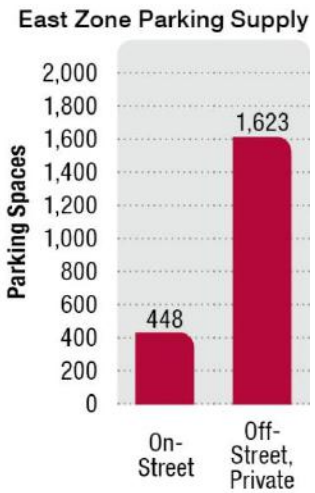
Figure 2 - East Zone Sub Area Land Use Map

Land Use Category	Intensity	Unit of Measure
City Park	3.69	Acres
Commercial	220,178	Square feet
Community Center	8,750	Square feet
Food & Beverage	18,929	Square feet
Government	9,334	Square feet
Hotel	210	Rooms
NCSU Student Housing	10	Units
Parking / Transportation	270,945	Square feet
Performing Arts Theater	280	Seats
Residential, Multifamily	660	Dwelling units
Residential, Single Family	60	Dwelling units
Storage & Warehousing	6,371	Square feet

Table 1 - East Zone Land Use Intensities

East Zone Parking

There are 2,071 spaces within the East zone. 78% of the parking within the area is private off-street, while the remaining 22% is on-street. **Figure 3** shows where parking is located within the East Zone.



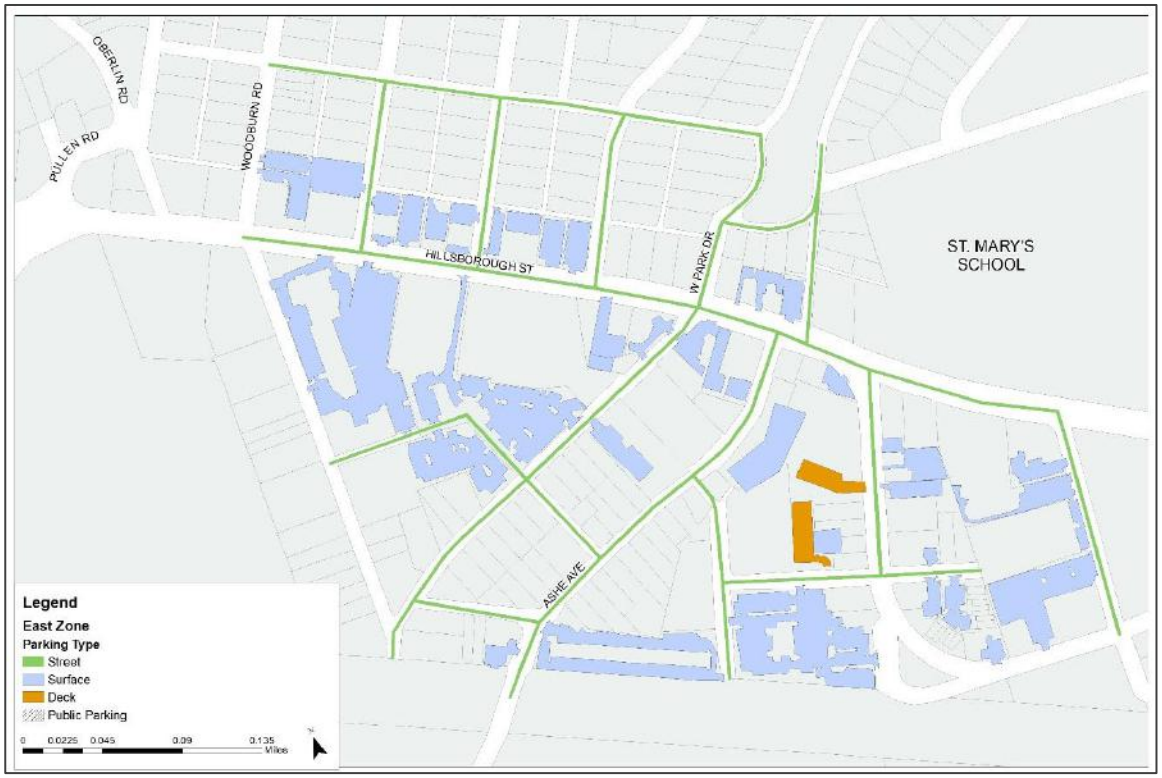


Figure 3 - East Zone Sub Area Parking Map

WEST ZONE

The West zone of the study area contains the lowest density of land uses in terms of occupied square footage, with limited on-street parking supply and no public off-street parking facilities. As detailed in **Table 2**, the West zone is predominantly classified as storage and warehousing facilities within property records, with several restaurants immediately adjacent to Hillsborough Street, and surrounded by residential properties.

Table 2. West Zone Land Use Intensities

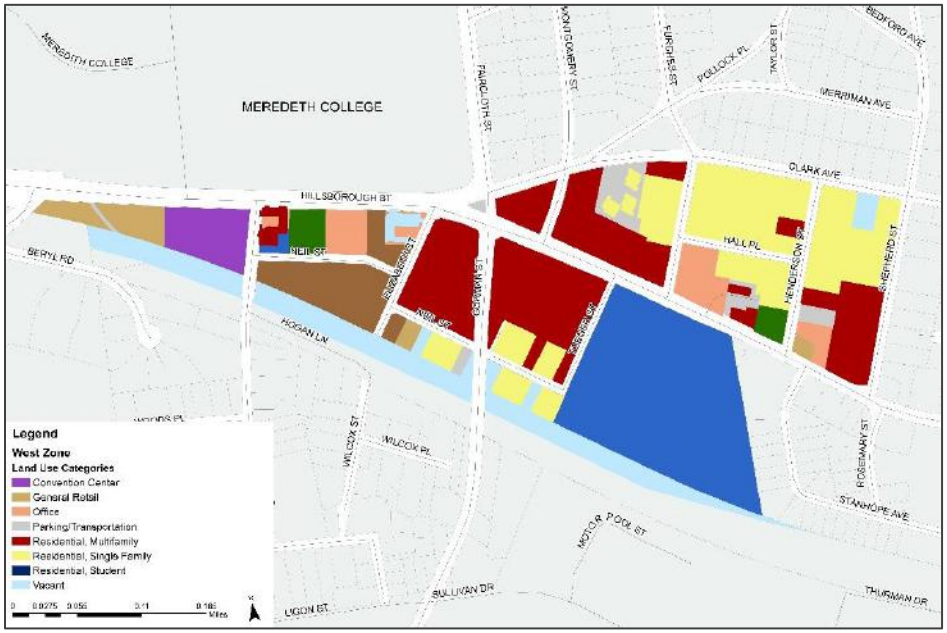


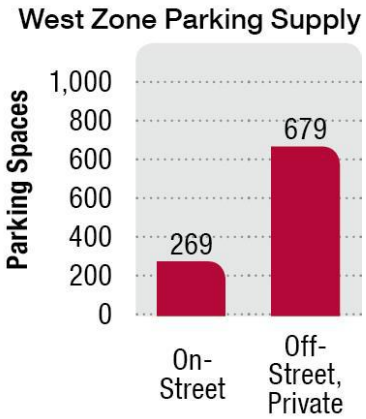
Figure 4 - West Zone Sub Area Land Use Map

Land Use Category	Intensity	Unit of Measure
Commercial	94,686	Square feet
Community Center	7,400	Square feet
Food & Beverage	52,261	Square feet
NCSU Student Housing	9	Units
Parking / Transportation	78,408	Square feet
Residential, Multifamily	56	Dwelling units
Residential, Single Family	60	Dwelling units
Storage & Warehousing	673,612	Square feet
Vacant	1,734,559	Square feet

Table 2 - West Zone Land Use Intensities

West Zone Parking

There are 948 spaces within the West zone. 72% of the parking within the area is private off-street, while the remaining 28% is on-street. **Figure 5** shows where parking is located within the West zone.



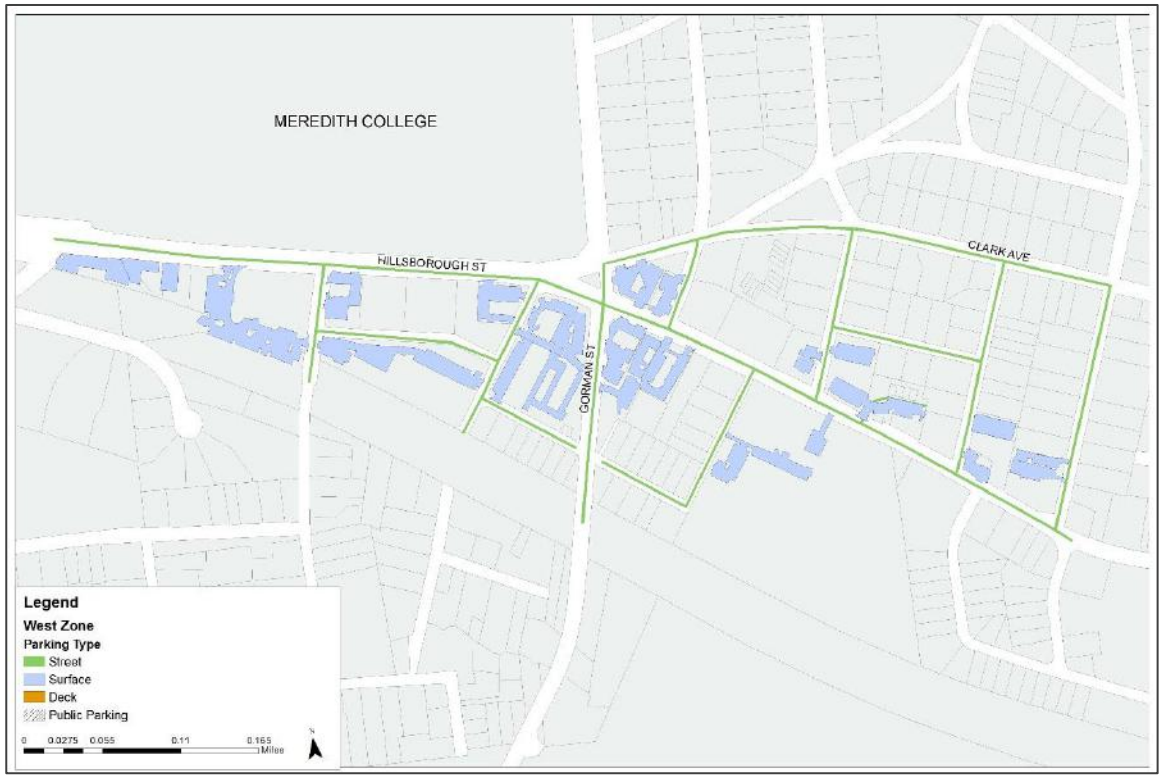


Figure 5 - West Zone Sub Area Parking Map

CENTRAL ZONES

The central portion of the study area was divided into two zones, Central-A and Central-B, to allow analysis of the characteristic differences in each area. Described further below, the Central-A zone, geographically, surrounds the Central-B zone to the north, east, and west, with both areas being generally bordered by Hillsborough Street to the south.

CENTRAL-A ZONE

The Central-A zone surrounds the core business area of the central portion of the Hillsborough Street corridor. This area is transitional in nature, with greater concentrations of commercial and mixed-use properties located closer in to the central area of the zone and more residential properties located along the outer perimeter of the zone. As detailed in **Table 3**, the Central-A zone contains the largest quantity of residential units as well as the Raleigh Municipal Rose Garden and Little Theater, the Gregg Museum of Art and Design, and several religious and community gathering centers.

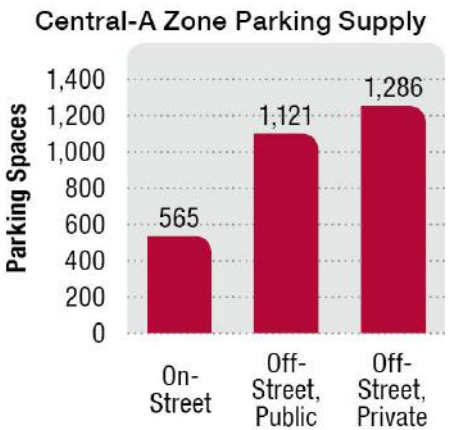
Figure 6 - Central-A Zone Sub Area Land Use Map

Land Use Category	Intensity	Unit of Measure
Bank	32,535	Square feet
City Park	75.79	Acres
Commercial	179,418	Square feet
Community Center	52,870	Square feet
Food & Beverage	46,925	Square feet
Government	4,627	Square feet
Museum	17,000	Square feet
Parking / Transportation	255,696	Square feet
Performing Arts Theater	1,920	Seats
Post Office	12,134	Square feet
Residential, Multifamily	1,237	Dwelling units
Residential, Single Family	224	Dwelling units
Storage & Warehousing	27,878	Square feet
Vacant	399,882	Square feet

Table 3 - Central-A Zone Land Use Intensities

Central-A Zone Parking

There are 2,972 spaces within the Central-A zone. 43% of the parking within the area is private off-street, 38% is public off-street, and the remaining 19% is on-street. **Figure 7** shows where parking is located within the Central-A zone.



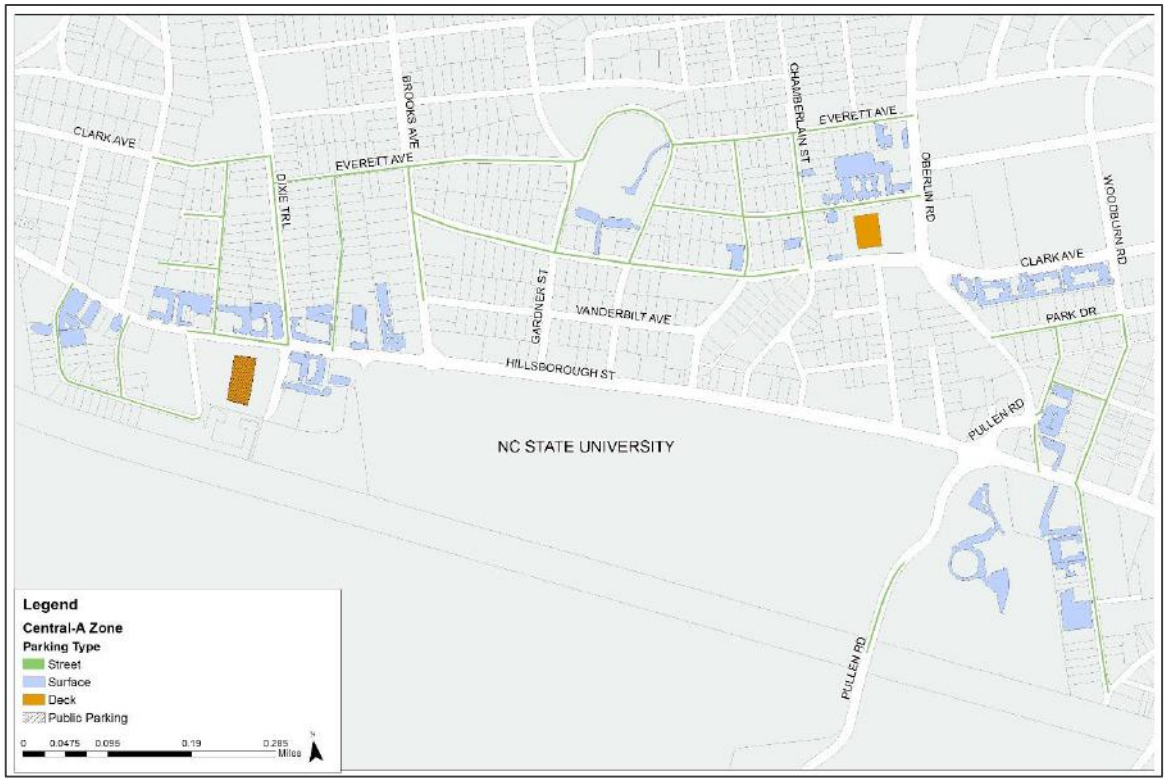


Figure 7 - Central-A Zone Sub Area Parking Map

CENTRAL-B ZONE

The Central-B zone is located within the central core of the study area immediately north and adjacent to Hillsborough Street. The Central-B zone directly abuts Hillsborough Street to the north and is the primary connection between the commercial aspects of Hillsborough Street and the NC State campus. As detailed in , the Central-B zone contains a relatively significant proportion of commercial properties for the study area.

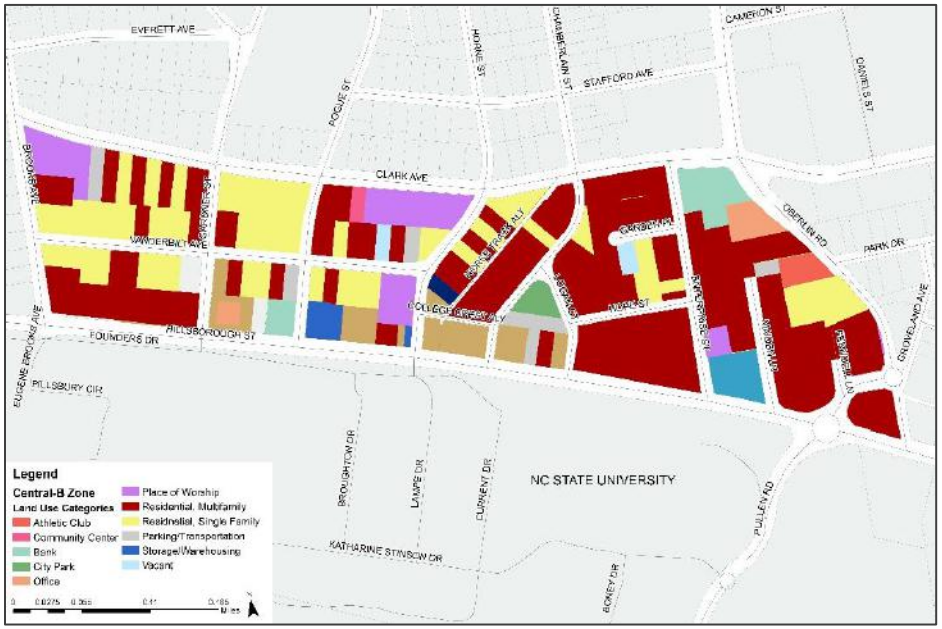


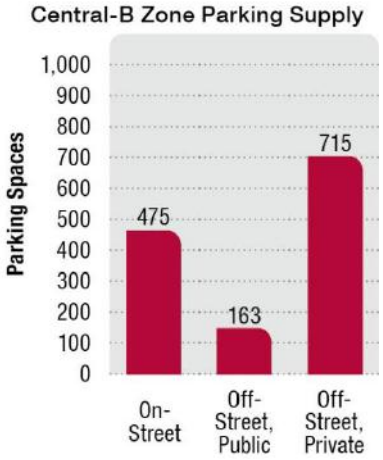
Figure 8 - Central-B Zone Sub Area Land Use Map

Land Use Category	Intensity	Unit of Measure
Bank	6,801	Square feet
City Park	0.46	Acres
Commercial	120,551	Square feet
Community Center	106,137	Square feet
Food & Beverage	85,278	Square feet
Hotel	270	Rooms
NCSU Student Housing	8	Units
Parking / Transportation	134,165	Square feet
Residential, Multifamily	189	Dwelling units
Residential, Single Family	69	Dwelling units
Vacant	33,978	Square feet

Table 4 - Central-B Zone Land Use Intensities

Central-B Zone Parking

There are 1,353 spaces within the Central-B zone. 53% of the parking within the area is private off-street, 35% is on-street, and the remaining 12% is public off-street. **Figure 9** shows where parking is located within the Central-B zone.



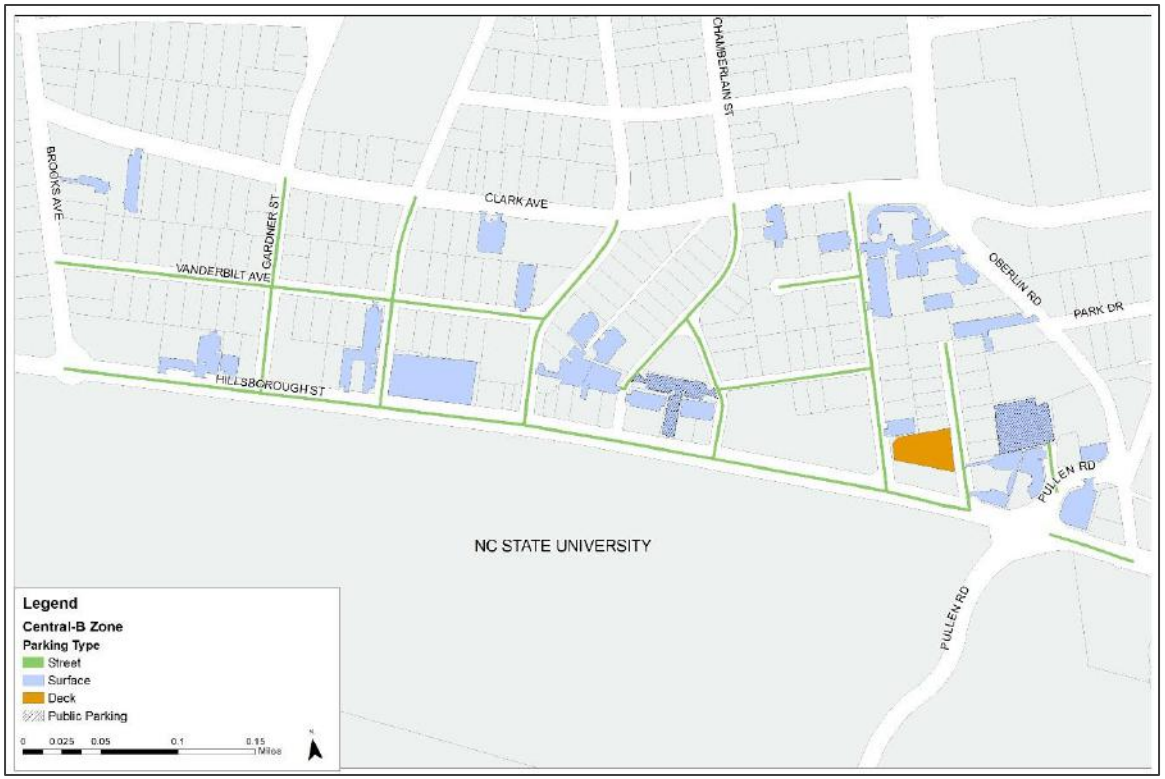


Figure 9 - Central-B Zone Sub Area Parking Map

PARKING PROGRAM ANALYSIS

The Hillsborough Street public parking supply is largely found along the area's street network, with a combination of metered, regulated, and unregulated curbside parking supply. Much of the study area's off-street parking supply is currently restricted to use by employees and patrons of specific businesses. There are additional restrictions in place on-street in several neighborhoods surrounding the core area through the use of residential parking permits in high traffic areas.

Private parking facilities currently discourage the use of shared parking in the area with posted signage at the parking facility. Additionally, there is language included on the Hillsborough Street Community Service Corporation (HSCSC) website warning of possible consequences related to leaving a vehicle in one private facility to visit another. The HSCSC website does, however, note that parking on-street and within NC State off-street facilities after 5:00 pm Monday through Friday and all-day on weekends is free and open to the public. However, the availability of NC State parking spaces is not widely known to visitors and the general public.

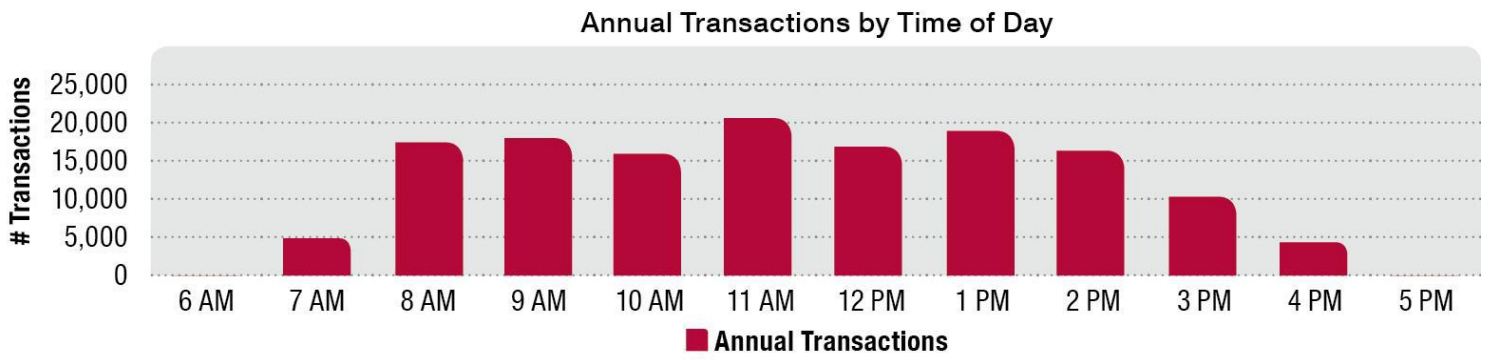
Please pay close attention *to which spots are reserved for which businesses, and do not stay parked in a patron parking space once you have finished your visit to the business. Vehicles parked in a patron space is* ***subject to being towed if its driver is not visiting the respective business****.*
https://www.hillsboroughstreet.org/getting-around/parking

PARKING REVENUES

According to data provided by the City of Raleigh, between November 2016 and October 2017 the total parking revenues for on-street parking along the Hillsborough Street corridor were $143,596.87. Most meter revenue (28%) was collected in the 2200 block (Chamberlain Street to Logan Court) of Hillsborough Street, with the lowest percentage (2%) collected in the 2100 block (Logan Court to the Pullen Road roundabout) of Hillsborough Street. Based on the revenue data, the average annual revenue is approximately $652.71 per space (or $6,243.34 per parking pay station) for the Hillsborough Street area.

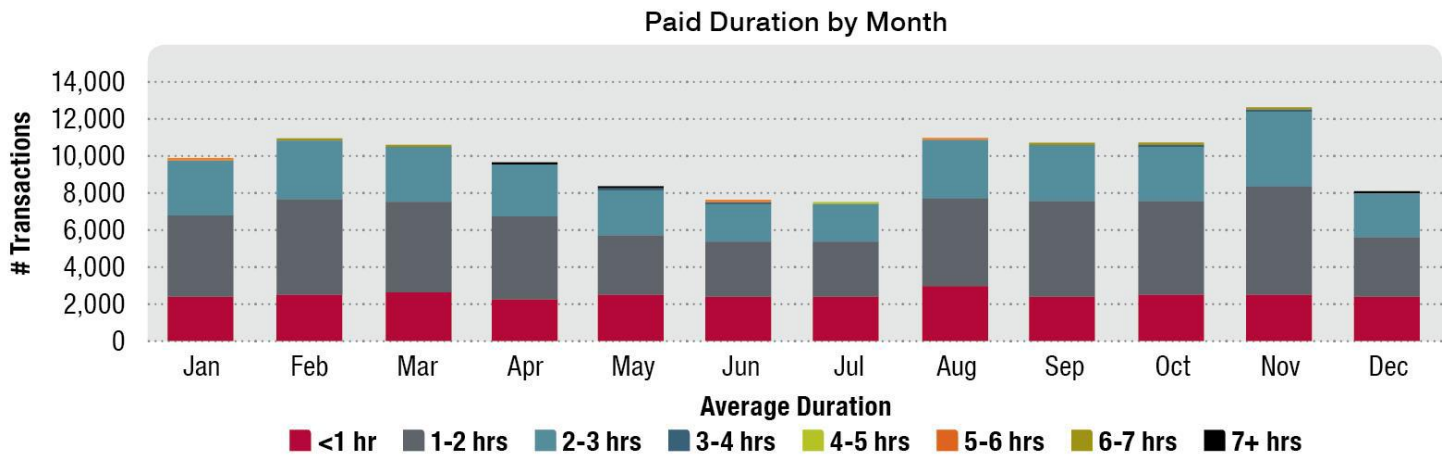
Analyzing parking meter revenue is an alternative means of monitoring parking demands for an area. Revenue data may also support rate adjustments, hours for enforcement, and informing policy decisions regarding management of parking assets, parking ordinances, and applications for new or expanding neighborhood parking permit programs. As shown in **10**, on-street parking meter transactions peak at approximately 11:00am, with an average paid duration of 1.38 hours (83 minutes) as demonstrated in **11**. This indicates a peak parking demand period of 11:00am until approximately 2:00pm.

Figure 10 - Annual On-Street Meter Transactions by Time of Day



Additional analysis of revenue data shows the greatest number of transactions occurring in the fall, as shown in **Figure 11**. This data correlates with the mix of land uses in the area and proximity to NC State. Further, revenue data correlates with peak demand periods and durations observed.

Figure 11 - Average Paid Duration of On-Street Meter Transactions by Month



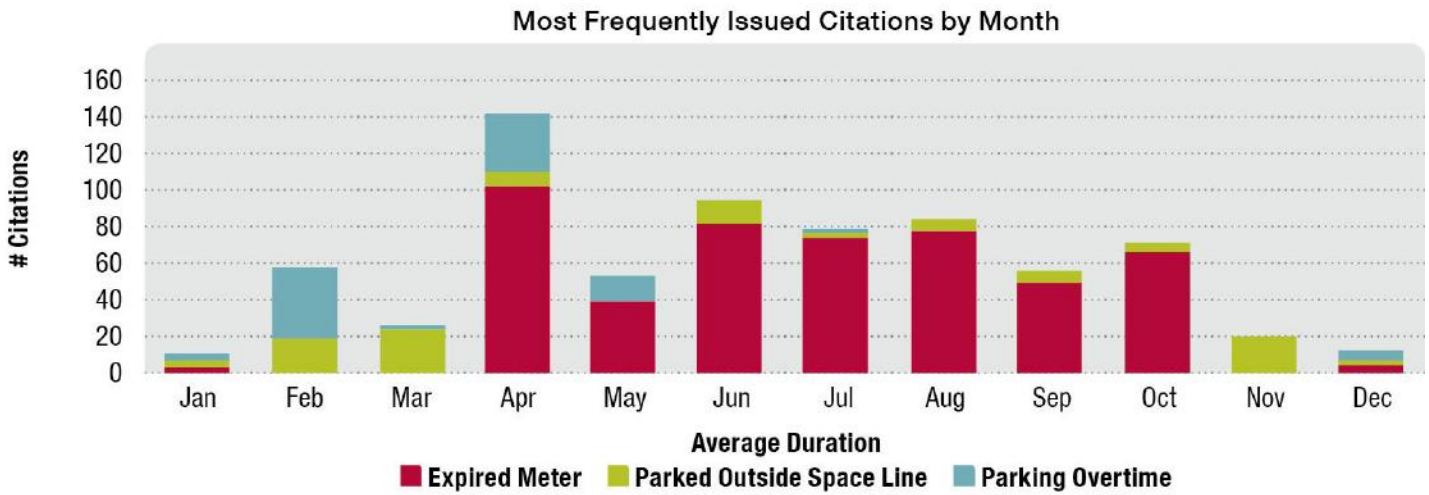
PARKING ENFORCEMENT

Parking enforcement operations for public facilities are provided by the City of Raleigh, through an outsourced agreement with ParkLink. By analyzing the citations issued over the course of a year, in this instance from November 2016 through October 2017, insights may be made to determine if the needs of the parking system's patrons are met or unmet through current management practices.

Figure 12 shows the three most frequently written citations for the sample year by month. Of note, during the months of April through October, expired meters were significantly higher than any other type of issued citation. This may indicate that parking patrons are staying in the area longer than initially anticipated, enforcement during this time is more targeted than during the months of November through March, or a combination of both.

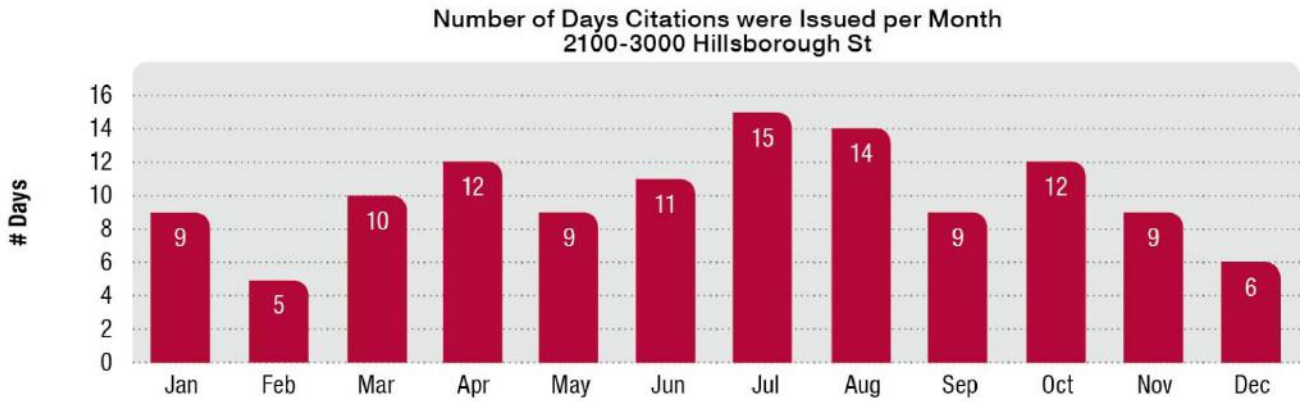
Higher quantities of parking overtime citations were observed in the months of February, April, and May when compared to other months.

Figure 12 - Most Frequently Issued Citations by Month



Peak parking demands are perceived to occur during the fall, over the lunch hour, when students are returning to the NC State campus. This perception is supported in the analysis of peak revenues occurring during the months of August through November. Enforcement efforts, as shown in Figure **13** on the following page, peak in July contrary to the observed peak months of demand. Rather, the expectation would be to see enforcement efforts more closely coincide with peak parking demands.

Figure 13 - Number of Days Citations Were Issued Each Month

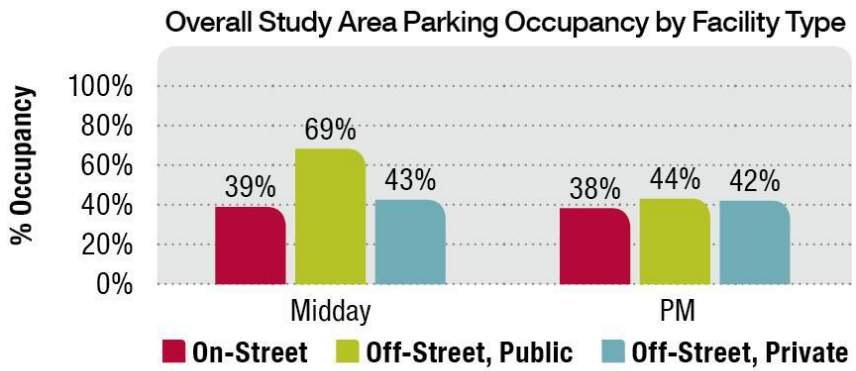


EXISTING PARKING DEMANDS

NC State utilized mobile License Plate Recognition (LPR) technology to capture parking occupancy data within the study area in October 2017[2], with an emphasis on midday and evening peaks. The overall peak for the study area was observed to occur during the midday collection period at 46% of all spaces occupied.

As shown in **Figure 14**, the overall demands were accommodated efficiently within the existing parking system's supplies. However, there is a perception of a lack of available public parking, especially in the core areas of the corridor. This is especially true in the Central-B zone, which is at the center of the highest demand areas along the Hillsborough Street corridor. In this area, the public parking facilities (including off-street and on-street spaces) are almost 70% utilized, with the areas directly adjacent to Hillsborough Street at capacity.

Figure 14 - Parking Occupancy for Overall Study Area by Time of Day per Type of Facility



[2] *During the time of data collection, there was extensive construction along Hillsborough Street which may have affected the actual parking demands along the corridor.*

In addition to occupancy data, the LPR technology allows for analysis of how long vehicles are observed to park within the study area. The average observed duration was 1.5 hours, which is slightly longer than the average paid transaction of 1.38 hours. **Figure 15** provides a map of summarized parking occupancies per facility for the study area. Each of the four subareas were analyzed and are discussed in subsequent sections.

Table 5 - Peak Hour Parking Supply and Occupancy Summary by Subarea

	Type of Facility	Supply	Observed Demand	Surplus	Existing Occupancy
East	On-Street	428	230	198	54%
	Off-Street, Public	0	-	-	-
	Off-Street, Private	1,623	738	885	45%
	TOTAL	2,051	968	1,083	47%
West	On-Street	221	42	179	19%
	Off-Street, Public	0	-	-	-
	Off-Street, Private	679	181	498	27%
	TOTAL	900	223	677	25%
Central-A	On-Street	864	364	500	42%
	Off-Street, Public	669	448	221	67%
	Off-Street, Private	1,337	504	833	38%
	TOTAL	2,870	1,316	1,554	46%
Central-B	On-Street	433	262	171	61%
	Off-Street, Public	163	118	45	72%
	Off-Street, Private	715	244	471	34%
	TOTAL	1,311	624	687	48%
Study Area	On-Street	1,946	898	1,048	46%
	Off-Street, Public	832	566	266	68%
	Off-Street, Private	4,354	1,667	2,687	38%
	TOTAL	7,132	3,131	4,001	44%

As it currently stands, the study area has a total of 7,132 parking spaces, 61% of which are privately allocated. The Central-A zone has the most overall parking supply as well as the most available public parking. However, the Central-B zone has the highest occupancy. Overall, there is a met demand of 3,131 spaces with a surplus of 4,001 spaces, meaning that the overall system is 44% occupied.

When that percentage is broken out into the various parking types, on-street is 46% occupied, public off-street is 68% occupied, and private off-street is 38% occupied. The public parking is particularly taxed in the Central-A and B zones, where metered on-street capacity is nearly full and public off-street lots are nearly 70% occupied. There are some available public spaces in these zones, but they are generally further away from Hillsborough Street and not as well known by patrons and visitors. Recommendations to help people get to these empty spaces will be discussed later in this report.

Parking in the core area is also constrained by a lack of available public parking off-street. Most, if not all, of the spaces within a proximate walking distance of Hillsborough Street are private in nature, serving only the businesses that provide those spaces. In many cases, these spaces are

regularly underutilized, but because of the restricted nature of the spaces, they are unavailable to the patron wishing to access businesses along Hillsborough Street. This, combined with the high demand for the limited public spaces that are available, creates a localized parking challenge that limits effectiveness of finding parking in the most desirable portion of the corridor, further fueling the perception of a lack of parking.

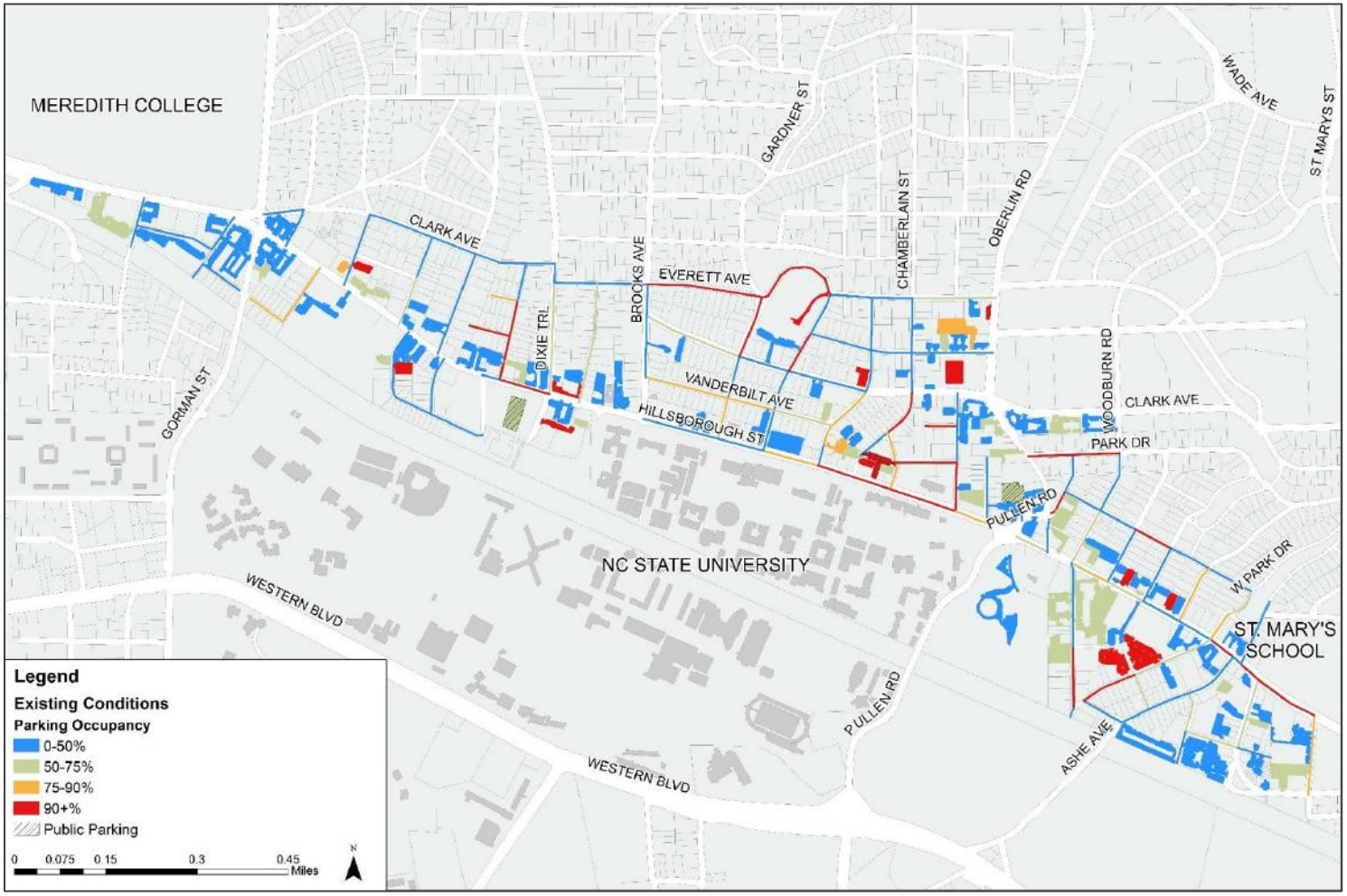


Figure 15 - Peak Observed Parking Occupancies, Midday

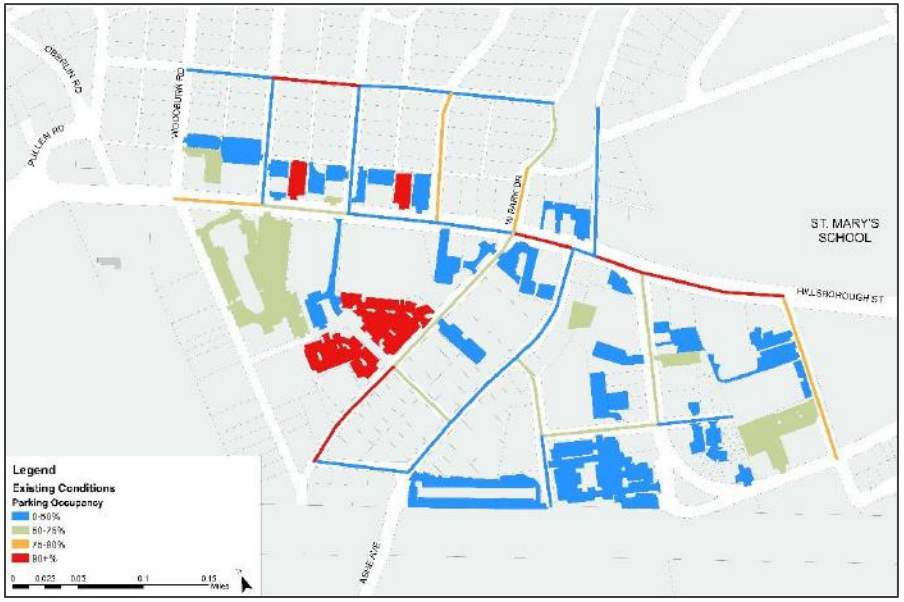
East Zone

While the East zone subarea lacks any public off-street parking supply, the existing parking occupancies within the area were observed to be well balanced between private off-street and on-street parking supplies. As shown in **Table 6**, both categories of parking were observed to operate at 54% (on-street) and 45% (off-street private) occupied, with the overall subarea operating at 47% occupied.

Table 6 - East Zone Peak Parking Supply and Occupancy Summary, Midday

Type of Facility	Supply	Observed Demand	Surplus	Occupancy
On-Street	428	230	198	54%
Off-Street, Public	0	-	-	-
Off-Street, Private	1,623	738	885	45%
TOTAL	2,051	968	1,083	47%

Figure 16 - East Zone Peak Observed Parking Occupancies, Midday



While the subarea was observed to operate below the 85% threshold of effective capacity, there are a handful of scattered on-street blocks and off-street facilities observed to operate at or above effective capacity.

Effective capacity is an industry-accepted occupancy threshold for parking facilities that indicates the efficiency of the facility or system. Based on industry standards, the primary threshold is 85% of the total capacity of the parking system and/or certain areas within the system. This is the threshold that indicates whether the parking system is operating effectively. For example, when observed or projected occupancies are under this threshold, users can typically locate spaces easily. When observed or projected occupancies are at or above this threshold, users cannot typically find available parking easily.

The on-street facilities observed to operate at heightened occupancies are adjacent to a large construction site as well as the YMCA and may be spill-over from these two uses. Off-Street facilities observed to operate at or above effective capacity also included a concentration of facilities along Hillsborough between Woodburn Road and Forest Road. These facilities are identified as serving the YMCA, Carolinas IT, and Van Attorneys. Within this area as well, the Preiss Building parking facilities were observed at just below effective capacity, at 80% occupied. This particular cluster of heightened occupancy, however, does have a relatively abundant supply of available on-street parking to meet additional, short-term visitor demands that may spillover from these uses.

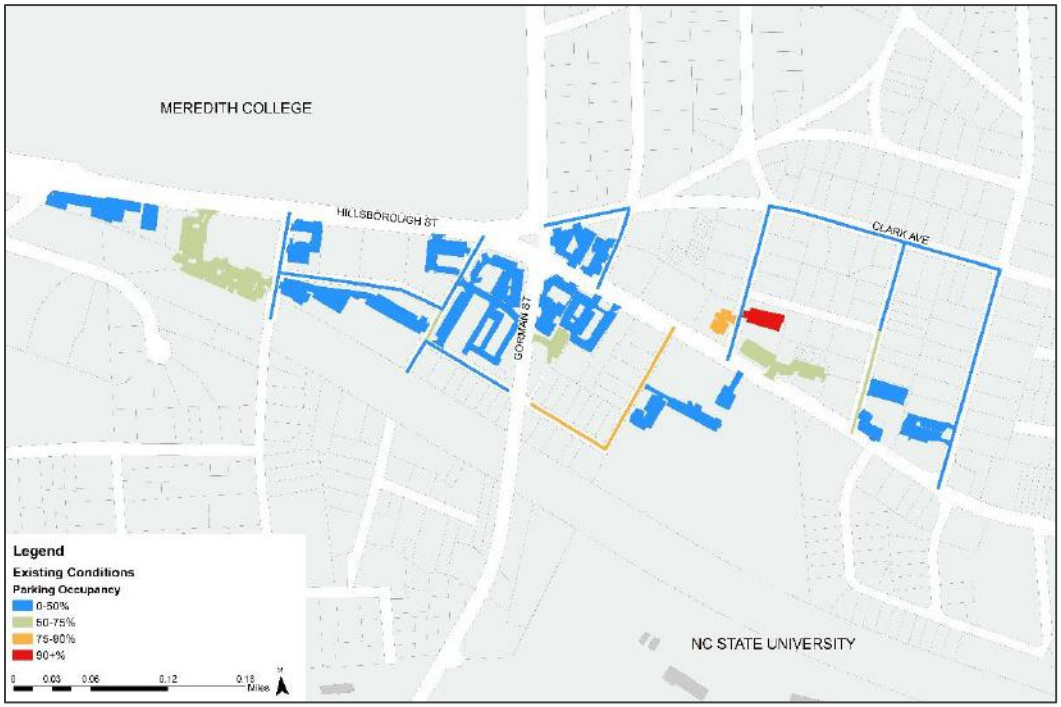
West Zone

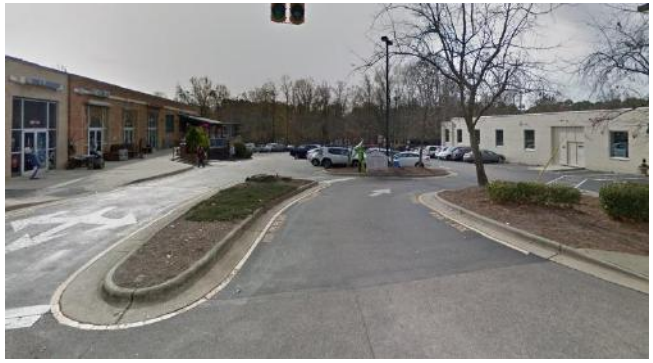
Much of the West zone parking supply was observed to be very underutilized during the midday peak. On-street parking supplies operated at approximately 19% occupied, while private off-street facilities operated at 28% occupied. As shown in **Figure 17**, however, two facilities were observed to experience elevated parking demands. Both the 8 Furches Street lot, serving the office building at Hillsborough Street and Furches Street, as well as the apartments at 3402 Hillsborough Street and their associated parking lot, were observed to operate at levels exceeding effective capacity. Parking supplies and observed occupancies for the West zone are summarized in **Table 7**.

Table 7 - West Zone Peak Parking Supply and Occupancy Summary, Midday

Type of Facility	Supply	Observed Demand	Surplus	Occupancy
On-Street	221	42	179	19%
Off-Street, Public	0	-	-	-
Off-Street, Private	679	181	498	27%
TOTAL	900	223	677	25%

Figure 17 - West Zone Peak Observed Parking Occupancies, Midday





Central-A Zone

The Central-A zone, the largest in the study area, was observed as underutilized overall at 46% occupancy. As shown in **Figure 18**, five private parking facilities and two blocks of on-street parking spaces were observed to operate at or above effective capacity. The on-street spaces experiencing heightened demand were Daisy Street from Douglas Street to Raymond Street (100%) and Park Drive from Groveland Avenue to Woodburn Road (86%). Both segments of on-street facilities are managed through 2-hour parking restrictions (without paid parking). Generally, the streets closer to the Central-B zone were more highly occupied.

Table 8 - Central-A Zone Peak Parking Supply and Occupancy Summary, Midday

Type of Facility	Supply	Observed Demand	Surplus	Occupancy
On-Street	864	364	500	42%
Off-Street, Public	669	448	221	67%
Off-Street, Private	1,337	504	833	38%
TOTAL	2,870	1,316	1,554	46%

Off-Street facilities experiencing elevated parking demands and operating above effective capacity included the Fairmont United Methodist Church, BB&T, the Oberlin Apartments, Damas Hookah Lounge, and Beauty Ethics surface lots. While there is available parking in this zone, it's location is typically not known by patrons or visitors of businesses along Hillsborough Street. Parking supplies and observed occupancies for the Central-A zone are summarized in **Figure 8**.

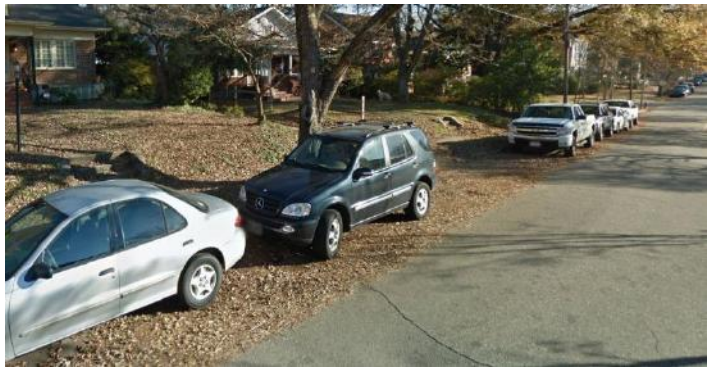
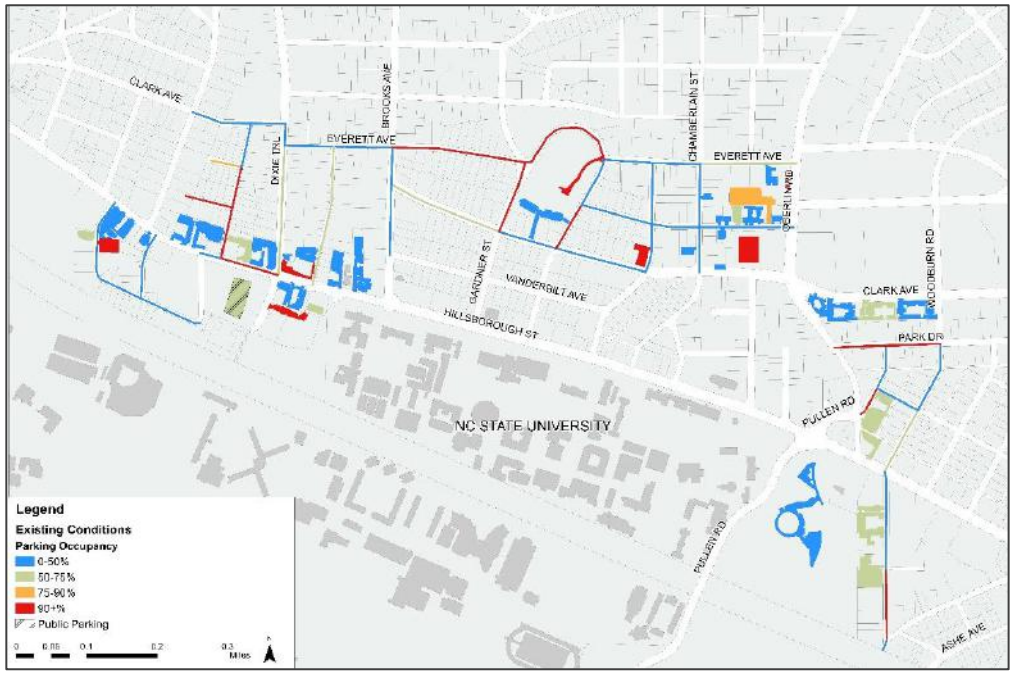


Figure 18 - Central-A Zone Peak Observed Parking Occupancies, Midday



Central-B Zone

The Central-B zone was observed to have the highest occupancies, with seven blocks and six private facilities and one public surface lot all observed to operate at or above effective capacity. While **Table 9** summarizes parking supplies and vehicles observed for the subarea, **Table 10** provides a closer look at facilities operating at or above effective capacity, which are also shown in **Figure 19**. These facilities demonstrate increased demand for both short-term and long-term parking, especially in the immediate vicinity of Compiegne Park and serving the businesses immediately adjacent to Hillsborough Street.

Figure 19 - Central-B Zone Peak Observed Parking Occupancies, Midday

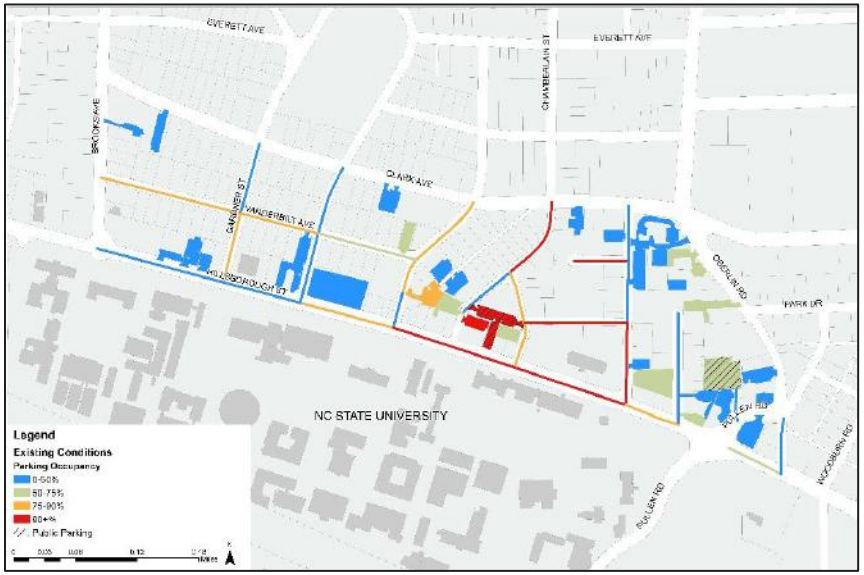


Table 9 - Central-B Zone Peak Parking Supply and Occupancy Summary, Midday

Type of Facility	Supply	Observed Demand	Surplus	Occupancy
On-Street	433	262	171	61%
Off-Street, Public	163	118	45	72%
Off-Street, Private	715	244	471	34%
TOTAL	1,311	624	687	48%

Table 10 - Central-B Zone Facilities Operating at or Above Effective Capacity, Midday

Facility	Supply	Observed Demand	Occupancy
On-Street			
Garden Pl-43	5	5	100%
Hillsborough St-182	14	14	100%
Hillsborough St-191	38	37	97%
Hillsborough St-197	21	20	95%
Horne St-76	9	8	89%
Gardner St-91	8	7	88%
Hillsborough St-82	29	25	86%
Off-Street, Public			
McLaurin Parking Lot	63	61	97%
Off-Street, Private			
Raleigh NC-LDS Institute Lot	16	16	100%
Bruegger's Lot	11	11	100%
Subway Lot	9	9	100%
Chipotle Lot	24	23	96%
Evolve Movement Lot	31	29	94%
Horne Street Apartments	17	15	88%

Off-Peak Parking Demands

During the evening collection, observed demands dropped approximately 7% from a demand of 3,131 during the midday peak to a demand of 2,952 at night. Demands generally migrated from the Central-B zone to the outer perimeter and residential areas. On-street parking and off-street parking in the block near Hillsborough Street and Horse Track Alley remain elevated within the study area core. These facilities are designated as long-term parking for employees of the 2400 block of Hillsborough Street and the apartments at 100 Horne Street.

Increased parking demand was observed to occur at the multifamily rental and condominium properties in the area of Oberlin Road and Stafford Avenue, near the Cameron Village shopping center. The parking facilities near Oberlin Road and Groveland Avenue, which serve the Players Retreat restaurant and several other retail and service properties, in addition to the parking in the vicinity of the YMCA at Park Avenue and Flint Place, were also observed to experience increased demands. **Table 11** provides a summary of the observed evening occupancies per subarea, with each facility summarized on the map shown in on the following page.

Table 11 - Off-Peak Parking Supply and Occupancy Summary by Subarea, Evening

	Type of Facility	Supply	Observed Demand	Surplus	Occupancy
East	On-Street	428	193	235	45%
	Off-Street, Public	0	-	-	-
	Off-Street, Private	1,623	818	805	50%
	TOTAL	2,051	1,011	1,040	49%
West	On-Street	221	15	206	7%
	Off-Street, Public	0	-	-	-
	Off-Street, Private	679	270	409	40%
	TOTAL	900	285	615	32%
Central-A	On-Street	864	297	567	34%
	Off-Street, Public	669	349	320	52%
	Off-Street, Private	1,337	531	806	40%
	TOTAL	2,870	1,177	1,693	41%
Central-B	On-Street	475	233	242	49%
	Off-Street, Public	163	21	142	13%
	Off-Street, Private	715	225	490	31%
	TOTAL	1,353	479	874	35%
Study Area	On-Street	1,988	738	1,250	37%
	Off-Street, Public	832	370	462	44%
	Off-Street, Private	4,354	1,844	2,510	42%
	TOTAL	7,174	2,952	4,222	41%

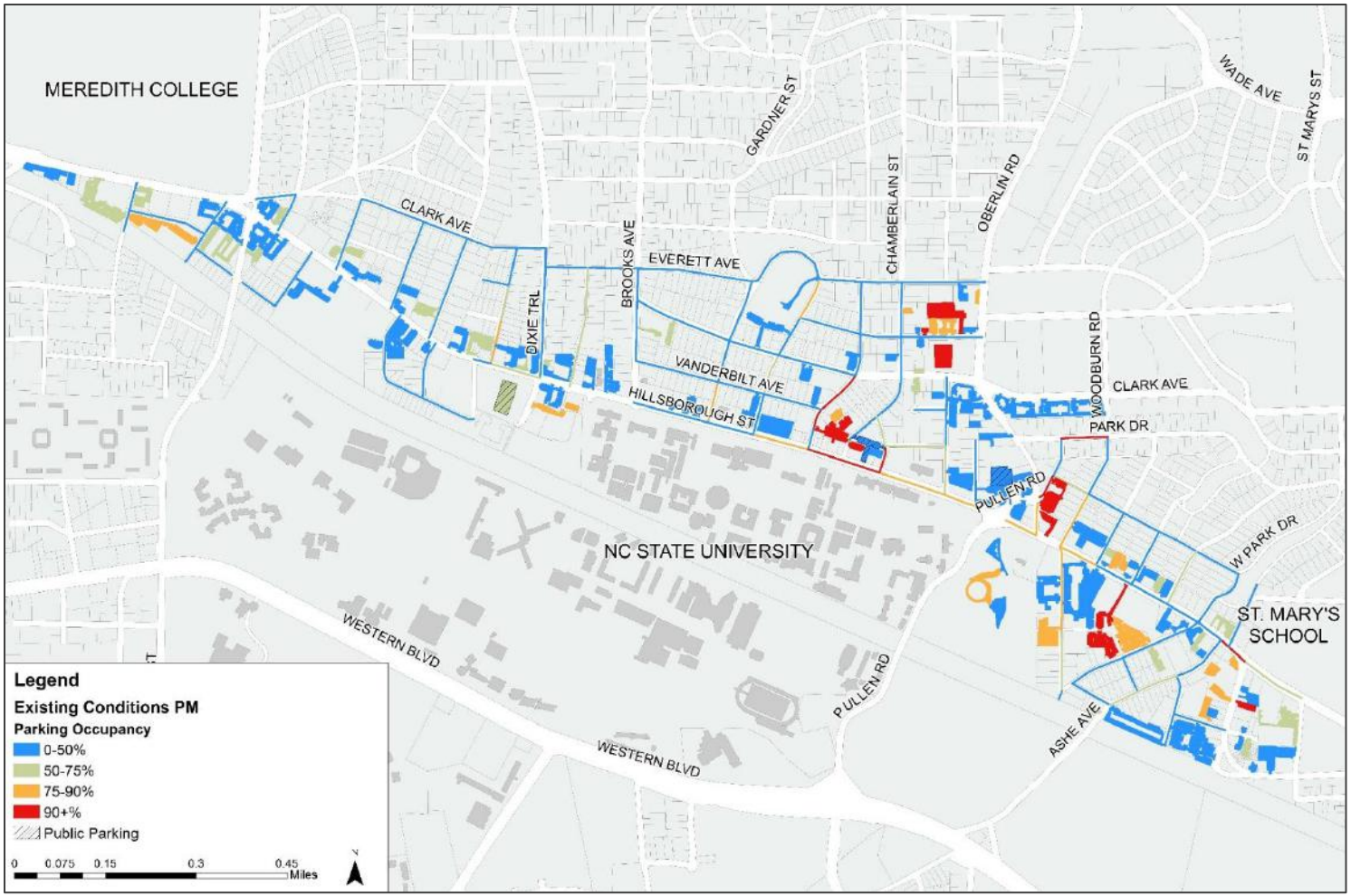


Figure 20 - Observed Parking Occupancies, Early Evening

Relation to North Carolina State University Parking Demands

In 2016, Kimley-Horn conducted the NC State campus parking study which evaluated existing parking conditions as well as modeled future scenarios regarding growth on campus. North Campus, which abuts Hillsborough Street, has high demand and more often than not spills that demand over onto the Hillsborough Street corridor and the surrounding neighborhoods. As seen in **Table 12**, North Campus has a demand of 3,559 spaces but only a supply of 3,030, a deficit of 529 spaces. With the Central-B zone's on-street and public off-street at 61% and 72% respectively occupied (Hillsborough Street itself is >75% occupied), it is safe to assume that some of this midday demand is coming from the University.

Table 12 - NC State Parking Supply and Occupancy (2016)

	Supply	Observed Demand	Surplus	Occupancy
North Campus	3,030	3,559	-529	117%

The NC State 5-year future projection model showed an increase of overall demand across campus. North Campus in particular projected an increased deficit of over 800 spaces – 300 more than in the existing model. Because of this, it was receommended that a parking structure be added in the vicinity of North Campus with approximately 1,000 spaces to help mitigate this demand. The addition of this new structure would hopefully alleviate some of the pressures North Campus has put on the Hillsborough Street corridor.

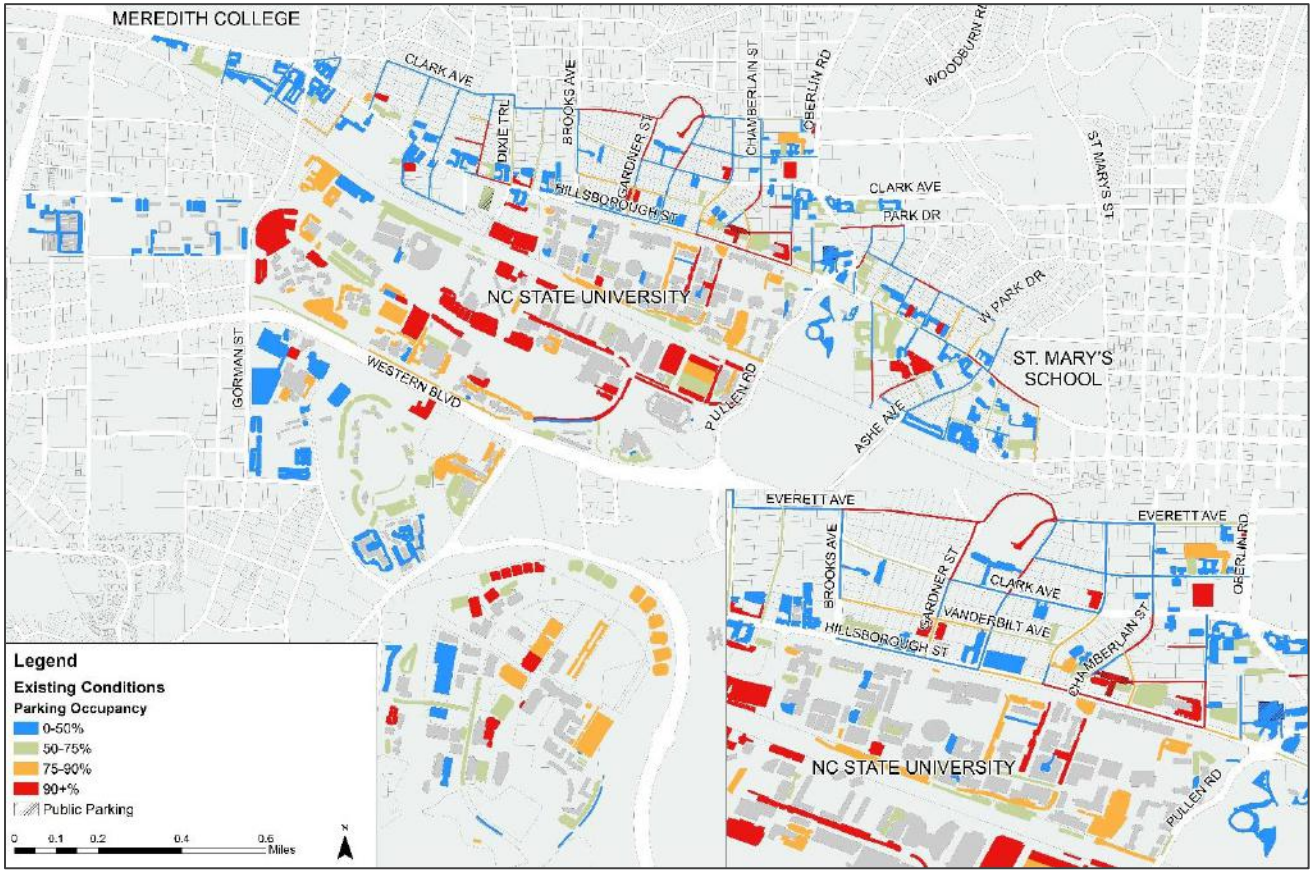


Figure 21 - NC State Park+ Results

PERCEPTIONS OF PARKING

In January 2018, a public workshop was held to provide stakeholders with an opportunity to share their experiences, perceptions, ideas, and concerns related to parking in and around the Hillsborough Street study area. During the workshop session, participants were asked to identify on a map 1) where they usually park and where they feel are parking issues, and 2) specific locations for parking management and mitigation strategies including installation of parking meters, increased parking prices, increased enforcement hours, improved wayfinding, and where additional parking supply should be added. Scans of the activity maps are included in the Appendix.

KEY THEMES

Several key themes emerged through conversation with Hillsborough Street stakeholders participating in the January workshop. This section focuses on the perceptions and opinions that were most frequently heard from stakeholders. As often as possible, the actual words of participants are used in the discussion of these key themes below. **Figure 22** provides an example of one of the activity maps.

1. PARKING AVAILABILITY AND SHARED PARKING

During the workshop with Hillsborough Street stakeholders, many comments were made about the difficulty of finding parking, especially within the core area of the district during peak hours. While several participants noted the possibility of expanding the North Hall lot to a parking deck with increased public supply, shared parking was also mentioned as a means to utilize the considerable supply of private parking, much of which is perceived to be underutilized during peak hours of parking demand. Specific facilities identified for consideration of share parking opportunities included the Wells Fargo (noted as the Wachovia in discussions) and the Players Retreat parking lots[3].

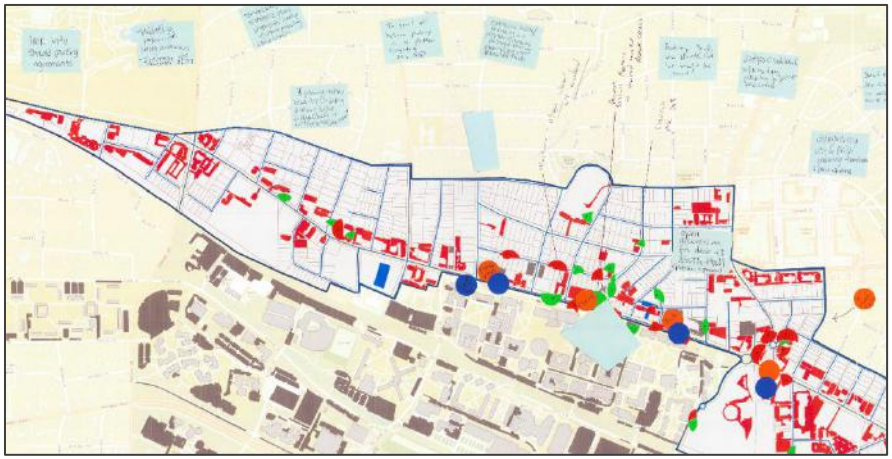
2. DYNAMIC PERFORMANCE

To better balance increased parking demands during peak hours, without placing the district at disadvantage to other nearby shopping and entertainment centers, dynamic or demand based pricing models were discussed in connection with proposed meter rate increases. Dynamic

[3] *At the peak hour, the Wells Fargo and Player's Retreat lots were observed to be 29% and 48% occupied respectively. At the evening peak, the lots were observed to be 18% and 100% occupied respectively.*

pricing is the process of changing parking pricing based on the day of the week or time of day to increase revenue when demand is high and manage demand since those not willing to pay will park elsewhere or will visit at a different time. Dynamic pricing was also considered for use in private facilities through shared parking agreements that would allow the City to manage the facility during off-peak hours and charge for public access.

Figure 22 - Workshop Activity Map, Identification of Preferred Strategies and Locations



3. IMPROVED WAYFINDING

While existing signage for private facilities and tow notices is abundant within the Hillsborough Street study area, there is a lack of clear and consistent wayfinding to direct visitors to available public parking. **Figure 23** shows existing public parking wayfinding signage from the area of the 2200 block of Hillsborough Street. Consistent use of the blue "P" to identify parking facilities exists, however the various times the facilities are available for public use are difficult to read from a moving vehicle. Following the path to the signed 24-hour public parking down Logan Court, as demonstrated in **Figure 24,** there are signs for private parking with tow notices and on-street public parking, but no additional signage to further direct visitors on their path to find public parking. Approaching the public lot, signage at the entrance is obstructed from view, as pictured in **Figure 25**, until nearly perpendicular and passing the facility. At the entrance to McLaurin, the public parking theming is completely lost, as shown in **Figure 26**, at which point signage more closely resembles the tow notices used in private facilities than the public parking wayfinding directing visitors to the facility.

Figure 23 - Existing Wayfinding Signage

The confusion of where to park is compounded by when parking is available for patrons. While some wayfinding includes notice of hours of accessibility for public parking, the information is not included on all entrance signage to facilities, such as evening and weekend parking at NC State University facilities or McLaurin Lot.

Figure 24 - Logan Court Public Parking Access

Figure 25 - McLaurin Parking Lot Entrance Approach

Figure 26 - McLaurin Parking Lot Entrance

THE FUTURE OF HILLSBOROUGH STREET

This section presents a summary of the future development assumptions that were utilized to model future demand projections. The scenarios presented below represent known developments that are currently approved or under way, as well as potential sites for redevelopment in the long-term.

SCENARIO 1. NEAR TERM DEVELOPMENTS

The project team identified five known projects that are currently underway within the study area. These projects are located within the Central-A, Central-B, and East zones and were used to shape each version of Scenario 1. **Table 13** shows the breakdown of new land uses and parking within Scenario 1. An additional 1,142 privately allocated parking spaces are proposed to occur with four of the specific developments.

Table 13 - Scenario 1-A-C Known New Land Uses and Parking

Facility Name	2017 Land Use	Future Land Use	Value and Unit Type	Associated Parking
109 Park Avenue Apts.	Under Construction	Apartments	87 Units	65 Spaces
2304 Hillsborough St Apts.	Under Construction	Apartments	12 Units	-
2304 Hillsborough St Apts.- Retail	Under Construction	General Retail	8,700 SF	-
Hillstone Cameron Apts.	Residential and Retail	Apartments	203 Units	325 Spaces
The Standard Apts.	Under Construction	Apartments	235 Units	452 Spaces
The Standard Apts.- Retail	Under Construction	General Retail	5,000 SF	
The Theory Apts.	Under Construction	Apartments	150 Units	300 Spaces

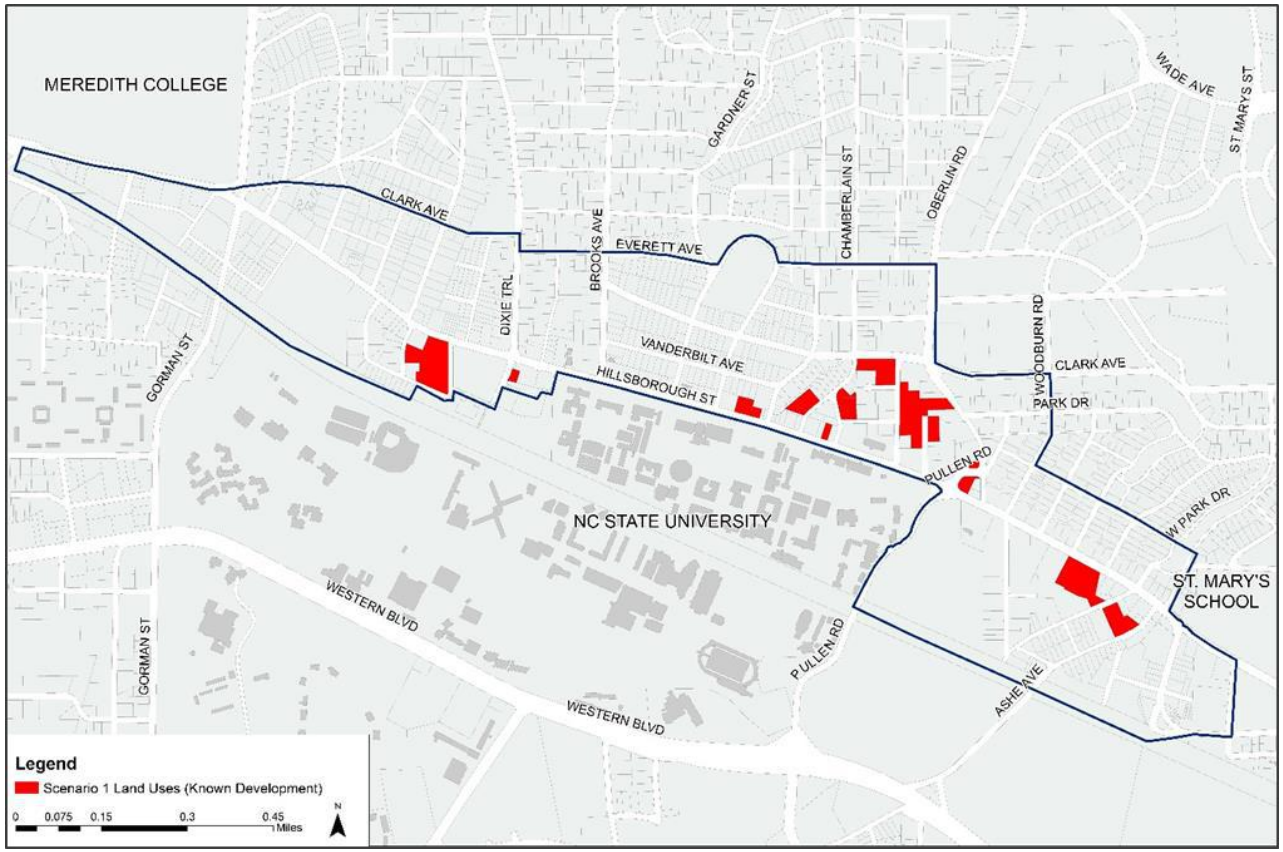
In addition to the known developments, five parcels were identified for near-term mixed-use developments. Each of the parcels was assumed to consist of a five-story building. The parking demands of the known developments and potential composition of the five buildings were analyzed under three possible combinations: multifamily[4] and ground floor retail; office and ground floor retail; and a mixed combination of multifamily, office, and ground Floor Retail. **Table 14** shows the breakout of each of these identified parcels and their uses in each version of Scenario 1. These parcels were modeled without associated parking estimate the impacts to the public parking system in the event that these developments were not required to build parking. In regard to existing parking, two existing parking lots were removed due to the identified mixed-use parcels for a total of 40 parking spaces lost. A map of development and parcel locations is provided in **Figure 27**.

[4] *Each residential unit was presumed to be approximately 1,000 square feet.*

Parcel #	Ground Floor Retail	1-A – All Residential	1-B – All Office	1-C – Split Office and Multifamily	
1	37,725 SF	151 Units	150,900 SF	75 Units	75,450 SF
2	42,563 SF	170 Units	170,252 SF	85 Units	85,126 SF
3	10,037 SF	40 Units	40,148 SF	20 Units	20,074 SF
4	17,246 SF	69 Units	68,984 SF	34 Units	34,492 SF
5	5,667 SF	23 Units	22,668 SF	11 Units	11,334 SF

Table 14 - Scenario 1 Parcel Land Use Intensities

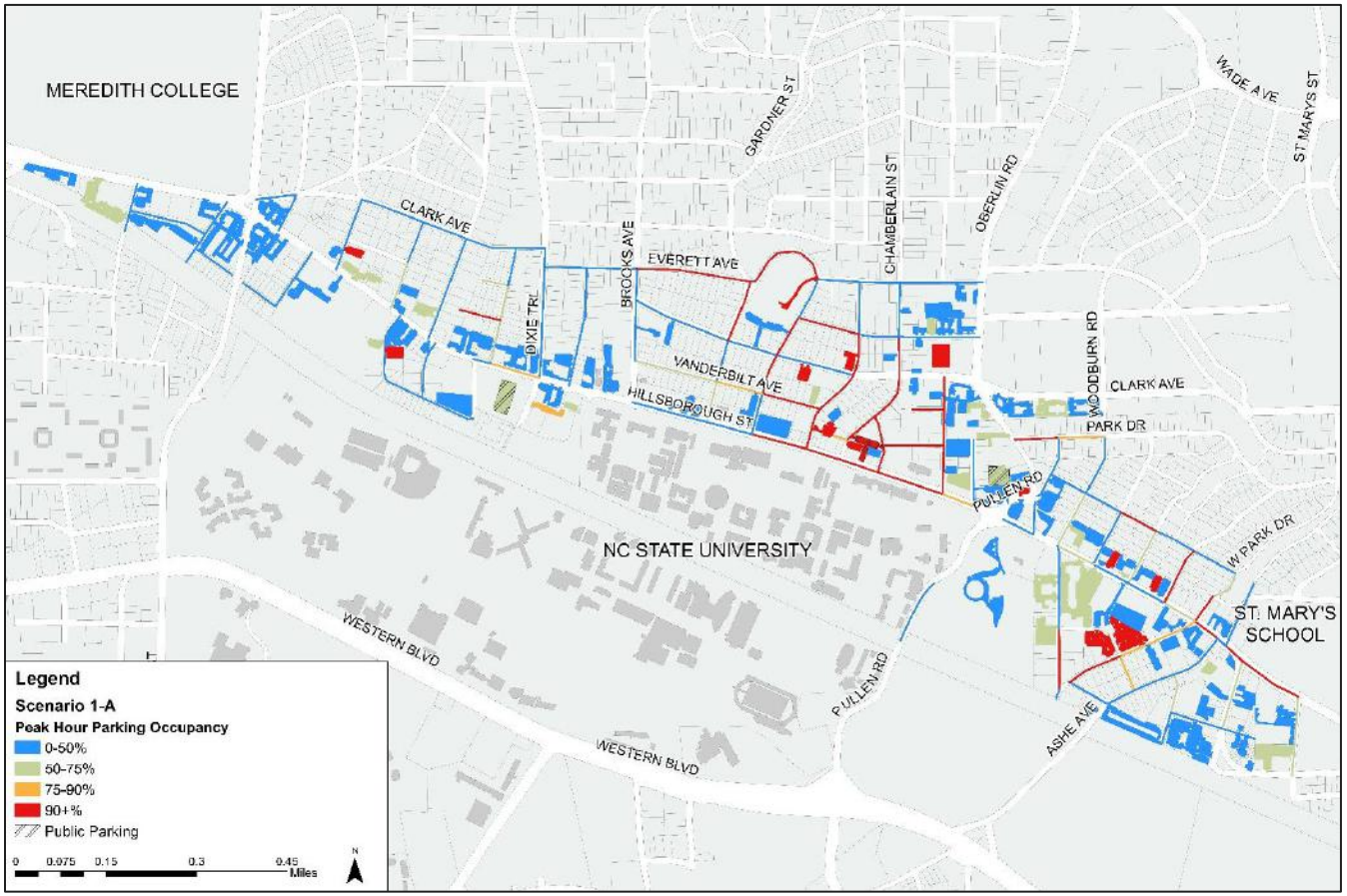
Figure 27 - Known Developments Currently Underway or Approved for Development within the Study Area



Scenario 1-A. Multifamily and Ground-Floor Retail

In the first potential mix of land uses for Parcels 1 through 5, the buildings were assumed to contain ground floor retail space with multifamily residential units above. A breakdown of each of the identified parcels can be found on the previous page in **Table 14**. A total of 113,238 SF of retail space and 457 apartment units were projected for this scenario in addition to the known developments. **Figure 28** shows the peak hour occupancy of Scenario 1-A while **Table 15** supplies a summary of projected parking by type and zone.

Figure 28 - Scenario 1-A Peak Hour Occupancy



The results show that there is a 1,102 space (14%) increase in supply between the base year (2017) and Scenario 1-A (7,132 vs. 8,234). This is due to the 1,142 spaces added by the 109 Park Avenue Apartments, Hillstone Cameron Apartments, The Standard Apartments, and The Theory Apartments. This change in supply is the same throughout each version of Scenario 1.

Additionally, there was an overall demand decrease of 89 spaces (3%). This is mostly due to replacing existing demand generating land uses with residential land uses whose demands peak in evening conditions (described in a subsequent table). Generally, the following observations can be made about demand in Scenario A:

Table 15 - Scenario 1-A Projected Parking Supply and Occupancy Summary by Subarea, Peak Hour

	Type of Facility	Supply	Demand	Surplus	Existing Occupancy	Future Occupancy
East	On-Street	428	248	180	54%	58%
	Off-Street, Public	0	-	-	-	-
	Off-Street, Private	1,923	679	1,244	45%	35%
	TOTAL	2,351	927	1,424	47%	39%
West	On-Street	221	24	197	19%	11%
	Off-Street, Public	0	-	-	-	-
	Off-Street, Private	679	141	538	27%	21%
	TOTAL	900	165	735	25%	18%
Central-A	On-Street	864	335	529	42%	39%
	Off-Street, Public	669	448	221	67%	67%
	Off-Street, Private	1,789	445	1,344	38%	25%
	TOTAL	3,322	1,228	2,094	46%	37%
Central-B	On-Street	433	318	115	61%	73%
	Off-Street, Public	163	137	26	72%	84%
	Off-Street, Private	1,000	268	732	34%	27%
	TOTAL	1,596	723	873	48%	45%
Study Area	On-Street	1,946	925	1,021	46%	48%
	Off-Street, Public	832	585	247	68%	70%
	Off-Street, Private	5,391	1,533	3,858	38%	28%
	TOTAL	8,169	3,043	5,126	44%	37%

- In the East zone, demand went down, primarily in off-street facilities. Most of this available capacity is found in the new parking facility attached to the proposed project on that site.
- In the West, demand decreased overall due to some redistribution of demands on the edge of the zone into the Central zones as spaces became available.
- Central-A saw some fluctuation in demands with the introduction of new parking facilities.
- Central-B also saw fluctuations in public-private demands with the introduction of new facilities.

Table 16 - Scenario 1-A Projected Parking Supply and Occupancy Summary by Subarea, Evening Peak Hour

	Type of Facility	Supply	Demand	Surplus	Existing Occupancy	Future Occupancy
East	On-Street	428	193	235	45%	45%
	Off-Street, Public	0	-	-	-	-
	Off-Street, Private	1,923	1,021	902	50%	53%
	TOTAL	2,351	1,214	1,137	49%	52%
West	On-Street	221	15	206	7%	7%
	Off-Street, Public	0	-	-	-	-
	Off-Street, Private	679	270	409	40%	40%
	TOTAL	900	285	615	32%	32%
Central-A	On-Street	864	297	567	34%	34%
	Off-Street, Public	669	349	320	52%	52%
	Off-Street, Private	1,789	737	1,052	40%	41%
	TOTAL	3,322	1,383	1,939	41%	42%
Central-B	On-Street	433	233	200	49%	54%
	Off-Street, Public	163	21	142	13%	13%
	Off-Street, Private	1,000	626	374	31%	63%
	TOTAL	1,596	880	716	35%	55%
Study Area	On-Street	1,946	738	1,208	37%	38%
	Off-Street, Public	832	370	462	44%	44%
	Off-Street, Private	5,391	2,654	2,737	42%	49%
	TOTAL	8,169	3,762	4,407	41%	46%

The evening peak conditions indicate an increase in overall occupancy, which is expected with 100% investment in new residential uses in the vision parcels (Parcel 1-5 developments). Off-street facilities in Central-B have the highest increase in occupancy with the influx of new demands. **Table 17** on the following page shows the projected demand of the known developments during both the midday and evening peak hours.

Table 17 - Scenario 1-A Known Land Uses Parking Demand

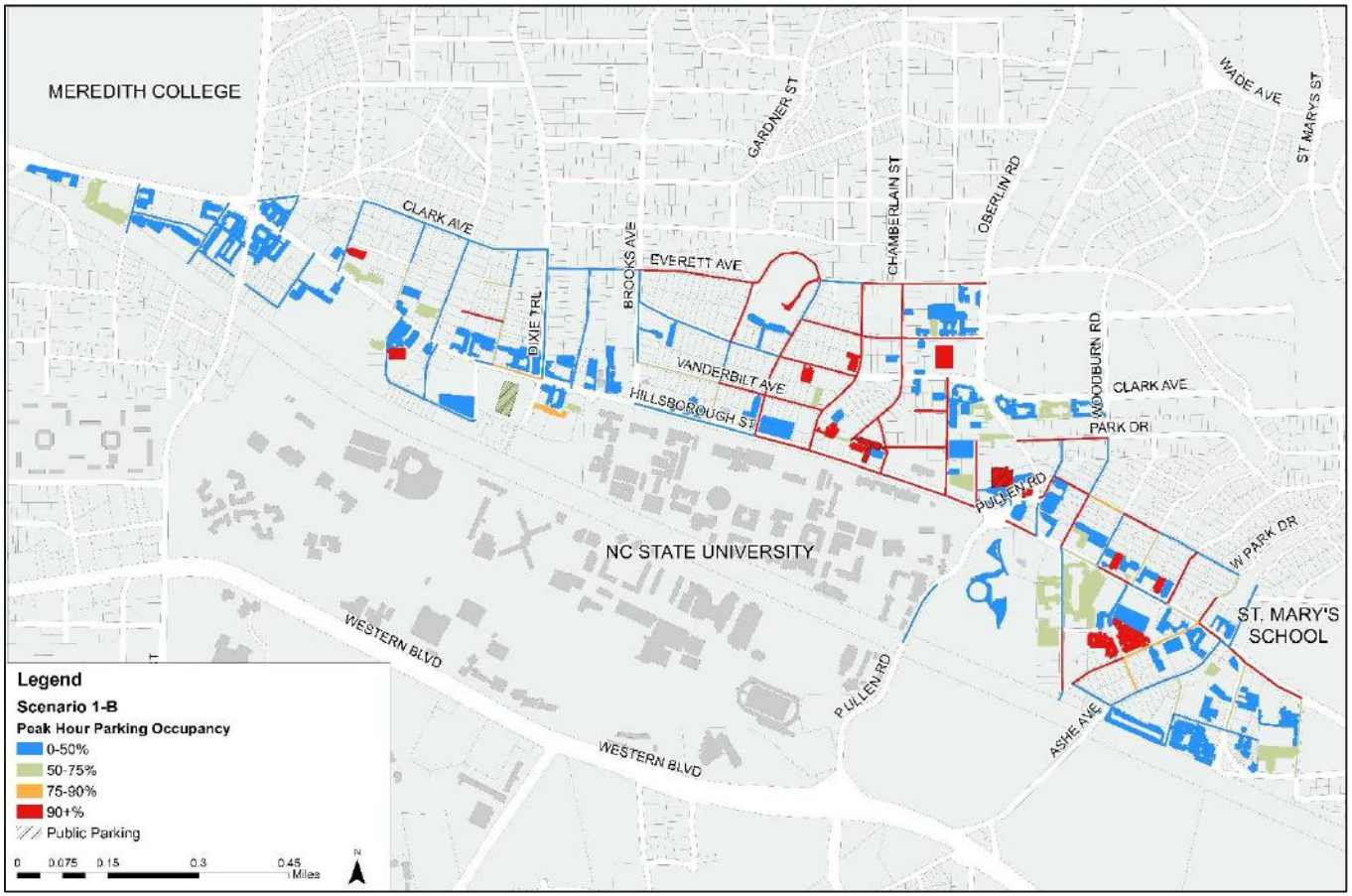
Facility Name	Associated Parking	Midday Projected Demand	Evening Projected Demand
109 Park Avenue Apartments	65 Spaces	24 Spaces	129 Spaces
2304 Hillsborough St Apartments	-	21 Spaces	113 Spaces
Hillstone Cameron Apartments	325 Spaces	33 Spaces	177 Spaces
The Standard Apartments	452 Spaces	70 Spaces	204 Spaces
The Theory Apartments	300 Spaces	44 Spaces	131 Spaces
Parcel 1	-	61 Spaces	82 Spaces
Parcel 2	-	69 Spaces	94 Spaces
Parcel 3	-	16 Spaces	15 Spaces
Parcel 4	-	28 Spaces	25 Spaces
Parcel 5	-	9 Spaces	33 Spaces

Because of the residential nature of this scenario, demands are higher during evening conditions than mid-day conditions. The retail components of each site generate a marginal amount of daytime demand, but not enough to create any disruptions adjacent to these developments or along Hillsborough Street. The results of this analysis (and the subsequent Scenario 1 analyses) show that the garages proposed with the known developments are likely oversized and could be good candidates for shared parking.

Scenario 1-B. Office and Ground Floor Retail

In the second potential mix of land uses for Parcels 1 through 5, the buildings were assumed to contain ground floor retail space with office space above. A breakdown of each of the identified parcels can be found on page 39 in **Table 14**. A total of 113,238 SF of retail space and 452,952 SF of office space were projected for this scenario in addition to the known developments. **Figure 29** shows the peak hour occupancy of Scenario 1-B while **Table 18** supplies a summary of projected parking by type and zone.

Figure 29 - Scenario 1-B Peak Hour Occupancy



The results indicate that the study area is operating at approximately 40% of total supply, compared with 44% during the base year. The additional capacity is largely found in the new proposed parking facilities associated with the known developments. Generally, the following observations can be made about demand in Scenario 1B:

- In the East zone, demand for on-street parking went up as a result of spillover from new office demands.
- In the West, off-street demands went down as demand was redistributed.
- Central-A saw demand increase in on-street facilities.
- Central-B also saw considerable public demand increases from the office-based midday demands.

Table 18 - Scenario 1-B Parking Supply and Occupancy Summary by Subarea, Peak Hour

	Type of Facility	Supply	Demand	Surplus	Existing Occupancy	Future Occupancy
East	On-Street	428	251	177	54%	59%
	Off-Street, Public	0	-	-	-	-
	Off-Street, Private	1,923	679	1,244	45%	35%
	TOTAL	2,351	931	1,420	47%	40%
West	On-Street	221	24	197	19%	11%
	Off-Street, Public	0	-	-	-	-
	Off-Street, Private	679	141	538	27%	21%
	TOTAL	900	165	735	25%	18%
Central-A	On-Street	864	464	400	42%	54%
	Off-Street, Public	669	448	221	67%	67%
	Off-Street, Private	1,789	442	1,347	38%	25%
	TOTAL	3,322	1,354	1,968	46%	41%
Central-B	On-Street	433	348	85	61%	80%
	Off-Street, Public	163	163	-	72%	100%
	Off-Street, Private	1,000	270	730	34%	27%
	TOTAL	1,596	781	815	48%	49%
Study Area	On-Street	1,946	1,080	866	46%	55%
	Off-Street, Public	832	611	221	68%	73%
	Off-Street, Private	5,391	1,539	3,852	38%	29%
	TOTAL	8,169	3,230	4,939	44%	40%

Table 19 - Scenario 1-B Projected Parking Supply and Occupancy Summary by Subarea, Evening Peak Hour

	Type of Facility	Supply	Demand	Surplus	Existing Occupancy	Future Occupancy
East	On-Street	428	193	235	45%	45%
	Off-Street, Public	0	-	-	-	-
	Off-Street, Private	1,923	818	1,105	50%	43%
	TOTAL	2,351	1,011	1,340	49%	43%
West	On-Street	221	15	206	7%	7%
	Off-Street, Public	0	-	-	-	-
	Off-Street, Private	679	270	409	40%	40%
	TOTAL	900	285	615	32%	32%
Central-A	On-Street	864	299	565	34%	35%
	Off-Street, Public	669	349	320	52%	52%
	Off-Street, Private	1,789	531	1,258	40%	30%
	TOTAL	3,322	1,179	2,143	41%	35%
Central-B	On-Street	433	290	143	49%	67%
	Off-Street, Public	163	21	142	13%	13%
	Off-Street, Private	1,000	186	814	31%	19%
	TOTAL	1,596	497	1,099	35%	31%
Study Area	On-Street	1,946	797	1,149	37%	41%
	Off-Street, Public	832	370	462	44%	44%
	Off-Street, Private	5,391	1,805	3,586	42%	33%
	TOTAL	8,169	2,972	5,197	41%	36%

The evening peak conditions indicate an overall decrease in occupancy, mainly from off-street private. On-street minimally increased and off-street public remained the same. This is expected with 100% investment in new office uses in the vision parcels (Parcel 1-5 developments). **Table 20** on the following page shows the projected demand of the scenario developments during both the midday and evening peak hours.

Table 20 - Scenario 1-B Known Land Uses Parking Demand

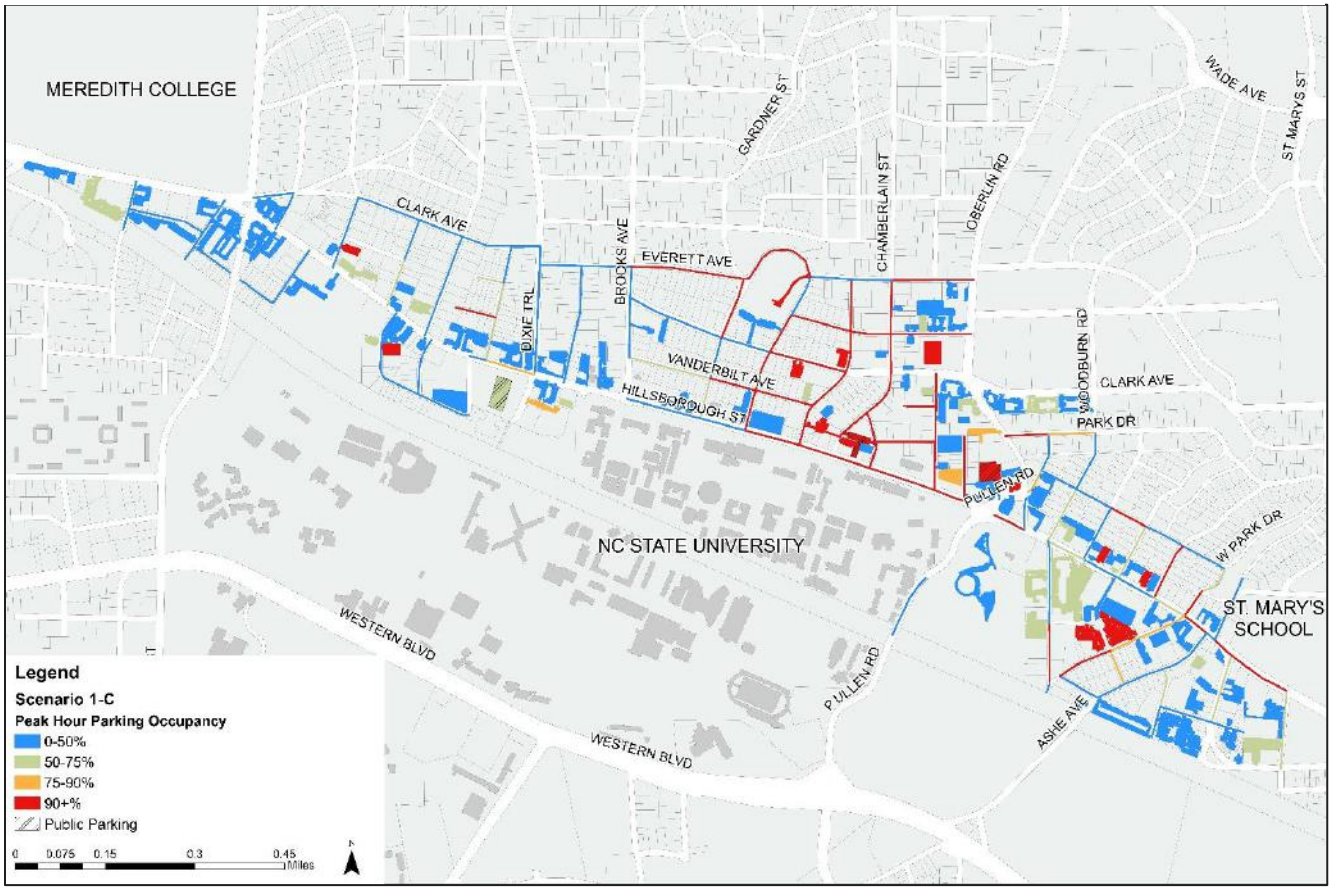
Facility Name	Associated Parking	Midday Projected Demand	Evening Projected Demand
109 Park Avenue Apartments	65 Spaces	24 Spaces	129 Spaces
2304 Hillsborough St Apartments	-	7 Spaces	113 Spaces
Hillstone Cameron Apartments	325 Spaces	59 Spaces	177 Spaces
The Standard Apartments	452 Spaces	70 Spaces	204 Spaces
The Theory Apartments	300 Spaces	44 Spaces	131 Spaces
Parcel 1	-	209 Spaces	17 Spaces
Parcel 2	-	222 Spaces	20 Spaces
Parcel 3	-	53 Spaces	5 Spaces
Parcel 4	-	90 Spaces	8 Spaces
Parcel 5	-	30 Spaces	3 Spaces

Because of the office-heavy nature of this scenario, demands are higher during mid-day conditions than evening conditions. The retail components of each site generate a marginal amount of evening demand, but not enough to create any disruptions adjacent to these developments or along Hillsborough Street. This scenario has the potential to create a small amount of disruption to the existing mid-day peak conditions along the Hillsborough Street corridor.

Scenario 1-C. Multifamily, Office, and Ground Floor Retail

In the third potential mix of land uses for Parcels 1 through 5, the buildings were assumed to contain ground floor retail space, office space on the second and third floors, and multifamily residential units on the top two floors. A breakdown of each of the identified parcels can be found on page 39 in **Table 14**. A total of 113,238 SF of retail space, 226,476 SF of office space, and 229 apartment units were projected for this scenario in addition to the known developments. **Figure 30** shows the peak hour occupancy of Scenario 1-C while **Table 21** supplies a summary of projected parking by type and zone.

Figure 30 - Scenario 1-C Peak Hour Occupancy



The results indicate that the study area is operating at approximately 39% of total supply, compared with 44% during the base year. The additional capacity is largely found in the new proposed parking facilities associated with the known developments. Generally, the following observations can be made about demand in Scenario 1C:

Table 21 - Scenario 1-C Parking Supply and Occupancy Summary by Subarea, Peak Hour

	Type of Facility	Supply	Demand	Surplus	Existing Occupancy	Future Occupancy
East	On-Street	428	248	180	54%	58%
	Off-Street, Public	0	-	-	-	-
	Off-Street, Private	1,923	679	1,244	45%	35%
	TOTAL	2,351	927	1,424	47%	39%
West	On-Street	221	24	197	19%	11%
	Off-Street, Public	0	-	-	-	-
	Off-Street, Private	679	141	538	27%	21%
	TOTAL	900	165	735	25%	18%
Central-A	On-Street	864	428	436	42%	50%
	Off-Street, Public	669	448	221	67%	67%
	Off-Street, Private	1,789	447	1,342	38%	25%
	TOTAL	3,322	1,323	1,999	46%	40%
Central-B	On-Street	433	352	81	61%	81%
	Off-Street, Public	163	163	-	72%	100%
	Off-Street, Private	1,000	279	721	34%	28%
	TOTAL	1,596	794	802	48%	50%
Study Area	On-Street	1,946	1,052	894	46%	54%
	Off-Street, Public	832	611	221	68%	73%
	Off-Street, Private	5,391	1,546	3,845	38%	29%
	TOTAL	8,169	3,209	4,960	44%	39%

- In the East zone, demand went up slightly on-street as spillover from new office demands utilized off-street and on-street spaces.
- In the West, off-street demands went down as demands shifted more inward towards the Central zones with on-street spaces opening up.
- Central-A saw demand increase in on-street facilities, but minimal changes in off-street facilities.
- Central-B also saw considerable public demand increases from the office-based midday demands.

Table 22 - Scenario 1-C Projected Parking Supply and Occupancy Summary by Subarea, Evening Peak Hour

	Type of Facility	Supply	Demand	Surplus	Existing Occupancy	Future Occupancy
East	On-Street	428	193	235	45%	45%
	Off-Street, Public	0	-	-	-	-
	Off-Street, Private	1,923	919	1,004	43%	48%
	TOTAL	2,351	1,112	1,239	49%	47%
West	On-Street	221	15	206	7%	7%
	Off-Street, Public	0	-	-	-	-
	Off-Street, Private	679	270	409	40%	40%
	TOTAL	900	285	615	32%	32%
Central-A	On-Street	864	297	567	34%	34%
	Off-Street, Public	669	349	320	52%	52%
	Off-Street, Private	1,789	635	1,154	30%	35%
	TOTAL	3,322	1,281	2,041	35%	39%
Central-B	On-Street	433	233	200	54%	54%
	Off-Street, Public	163	21	142	13%	13%
	Off-Street, Private	1,000	435	565	19%	44%
	TOTAL	1,596	689	907	28%	43%
Study Area	On-Street	1,946	738	1,208	38%	38%
	Off-Street, Public	832	370	462	44%	44%
	Off-Street, Private	5,391	2,259	3,132	33%	42%
	TOTAL	8,169	3,367	4,802	36%	41%

The evening peak conditions indicate a moderate change in occupancy, which is expected with a 50% investment in new residential uses in the vision parcels (Parcel 1-5 developments). The Central-B zone saw the biggest increase in off-street parking demands. **Table 23** shows the projected demand of the known developments during both the midday and evening peak hours.

Table 23 - Scenario 1-C Known Land Uses Parking Demand

Facility Name	Associated Parking	Midday Projected Demand	Evening Projected Demand
109 Park Avenue Apartments	65 Spaces	24 Spaces	129 Spaces
2304 Hillsborough St Apartments	-	7 Spaces	113 Spaces
Hillstone Cameron Apartments	325 Spaces	59 Spaces	177 Spaces
The Standard Apartments	452 Spaces	70 Spaces	204 Spaces
The Theory Apartments	300 Spaces	44 Spaces	131 Spaces
Parcel 1	-	141 Spaces	50 Spaces
Parcel 2	-	146 Spaces	57 Spaces
Parcel 3	-	34 Spaces	10 Spaces
Parcel 4	-	59 Spaces	17 Spaces
Parcel 5	-	19 Spaces	18 Spaces

This scenario represents a somewhat balanced set of mid-day and evening demands and likely creates the best opportunities for shared parking on each of these development sites, where daily office demands could give way to nightly residential demands within the same parking footprint. These developments do not pose a significant risk to the overall congestion and parking capacity along Hillsborough Street.

SCENARIO 2. LONG TERM DEVELOPMENTS

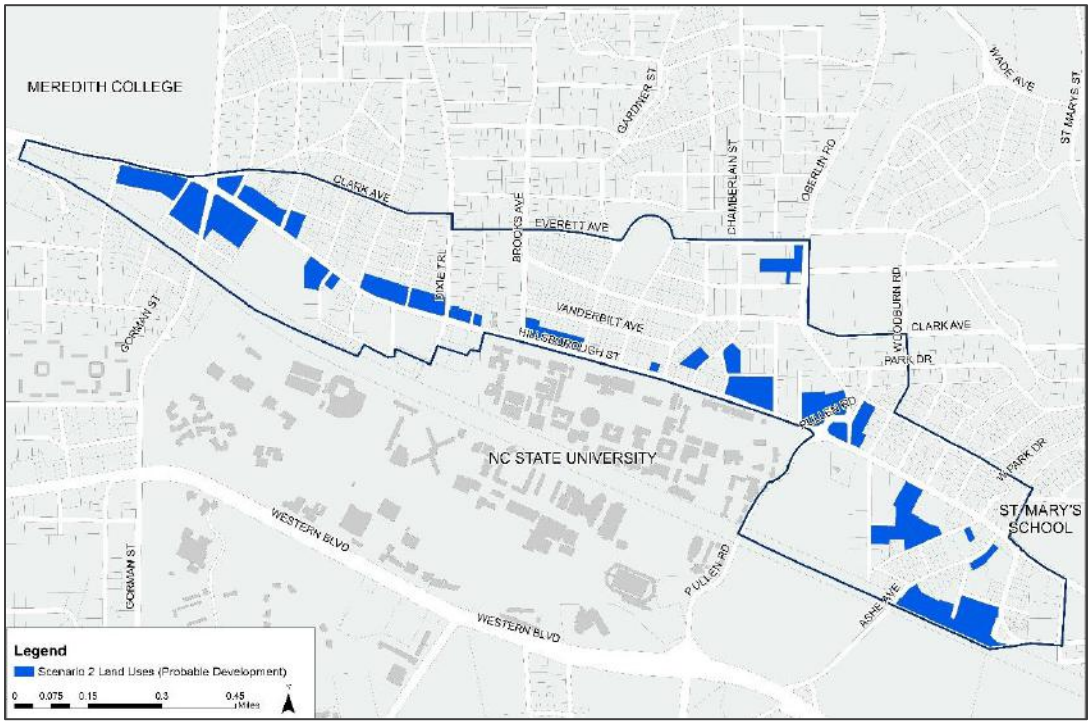
In Scenario 2, the project steering committee identified twenty-six parcels that are likely to be redeveloped at some point in the future. Each of the parcels was assumed to consist of a five-story building. The parking demands of the twenty-six parcels, as well as the known developments and parcels identified in Scenario 1, were analyzed under the same three combinations presented in Scenario 1. These parcels were modeled without the addition of on-site parking to evaluate the impacts to the public parking system. While most sites would likely opt to build some parking, this also mimics the current variance that allows for smaller scale residential developments to be constructed without dedicated parking. **Table 24** shows the breakout of each identified parcel and their uses in each version of Scenario 2. A map of development and parcel locations can be seen in **Figure 31**.

Table 24 - Scenario 2 Proposed Land Uses

Parcel #	Current Use	Ground Floor Retail	2-A – All Residential	2-B – All Office	2-C – Mixed Office & Residential	
1	Auto Service, Office, Restaurant, Warehouse	146,517 SF	586 Units	586,068 SF	293 Units	293,034 SF
2	Restaurant, Storage	131,355 SF	525 Units	525,420 SF	263 Units	262,710 SF
3	Single Family Home, Townhouse	38,343 SF	153 Units	153,372 SF	77 Units	76,686 SF
4	Convenience Market	152,496 SF	610 Units	609,984 SF	305 Units	304,992 SF
5	Apartments, Athletic Club, Office, Parking, Student Residence	95,013 SF	380 Units	380,052 SF	190 Units	190,026 SF
6	Manufacturing	62,206 SF	249 Units	248,824 SF	124 Units	124,026 SF
7	Parking	14,805 SF	59 Units	59,220 SF	30 Units	29,610 SF
8	General Retail, Lounge, Parking, Restaurant	94,252 SF	377 Units	377,008 SF	189 Units	188,504 SF
9	Auto Service, Parking, Single Family Home	20,314 SF	81 Units	81,256 SF	41 Units	40,628 SF
10	Convenience Market, General Retail, Lounge, Restaurant	57,858 SF	231 Units	231,432 SF	116 Units	115,716 SF
11	Auto Service, General Retail, Lounge, Restaurant	27,946 SF	112 Units	111,784 SF	56 Units	55,892 SF
12	Auto Service, Convenience Market, Restaurant	34,911 SF	140 Units	139,644 SF	70 Units	69,822 SF
13	Office, Parking	49,514 SF	198 Units	198,056 SF	99 Units	99,028 SF
14	Office, Post Office	81,992 SF	328 Units	327,968 SF	164 Units	163,984 SF
15	Apartments, Lounge, Office, Parking, Performing Arts Theater	316,127 SF	1,265 Units	1,264,508 SF	632 Units	632,254 SF
16	Parking/Transportation	26,596 SF	106 Units	106,384 SF	53 Units	53,192 SF

17	Athletic Club, Parking	234,758 SF	939 Units	939,032 SF	470 Units	469,516 SF
18	Vacant	10,142 SF	41 Units	40,568 SF	20 Units	20,284 SF
19	Bank	21,309 SF	85 Units	85,236 SF	43 Units	42,618 SF
20	General Retail, Restaurant	15,731 SF	63 Units	62,924 SF	31 Units	31,462 SF
21	Parking, Townhouse	32,693 SF	131 Units	130,772 SF	65 Units	65,386 SF
22	Church, General Retail, Office, Parking, Restaurant	112,281 SF	449 Units	449,124 SF	225 Units	224,562 SF
23	Parking, Student Residence	13,426 SF	54 Units	53,704 SF	27 Units	26,852 SF
24	Single Family Home, Townhouse	27,296 SF	109 Units	109,184 SF	55 Units	54,592 SF
25	Single Family Home	5,478 SF	22 Units	21,912 SF	11 Units	10,956 SF
26	Office	41,342 SF	165 Units	165,368 SF	83 Units	82,684 SF

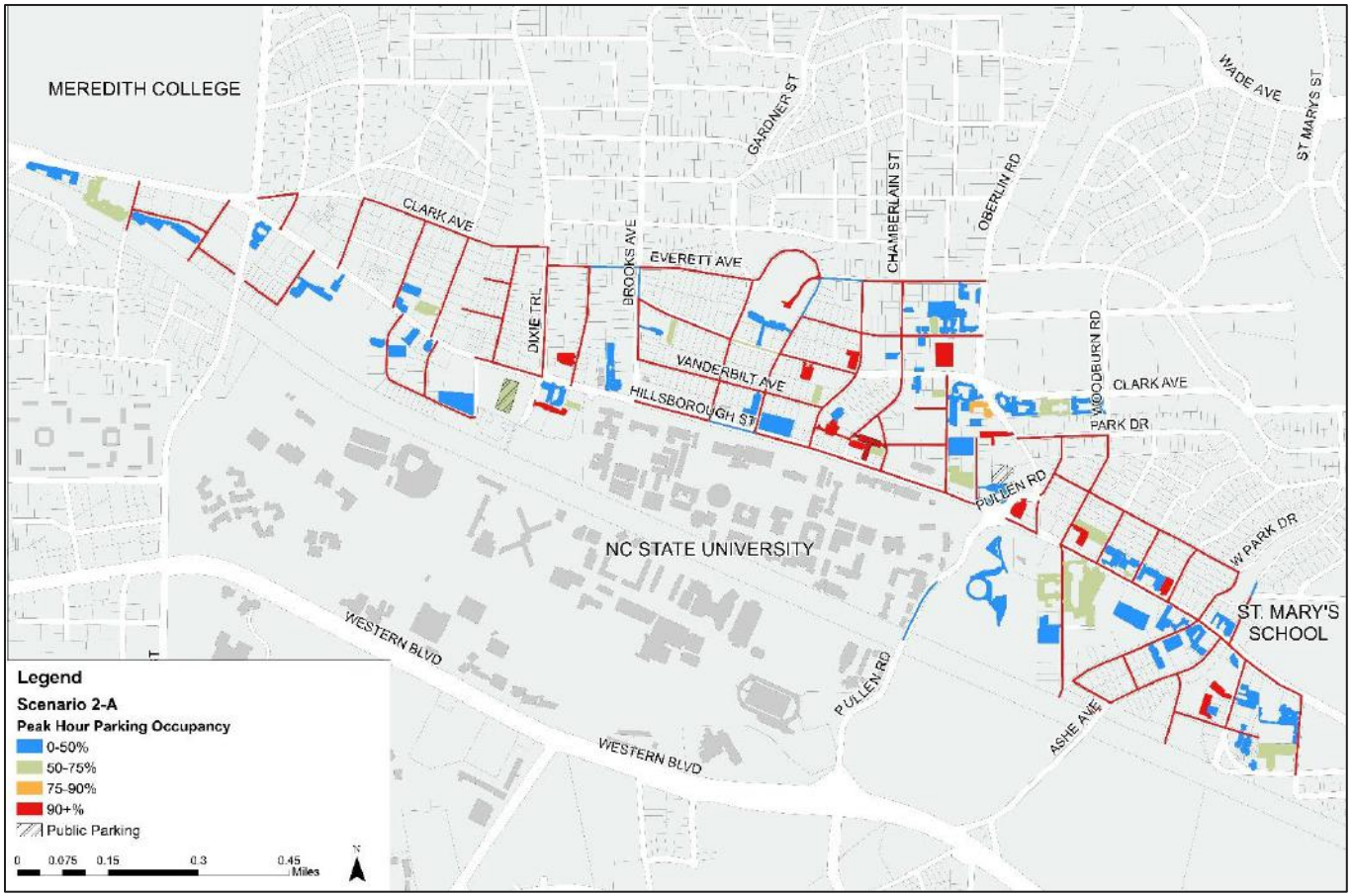
Figure 31 - Potential Locations for Long-Term Developments Included in Scenario 2



Scenario 2-A. Multifamily and Ground Floor Retail

In the first potential mix of land uses for Parcels 1 through 26, the buildings were assumed to contain ground floor retail space with multifamily residential units above. A breakdown of each of the identified parcels can be found on the previous page in **Table 24**. A total of 1,864,701 SF of retail space and 7,459 apartment units were projected for this scenario. **Figure 32** shows the peak hour occupancy of Scenario 2-A while **Table 25** supplies a summary of projected parking by type and zone.

Figure 32 - Scenario 2-A Peak Hour Occupancy



The results indicate that the study area is operating at approximately 56% of total supply, compared with 44% during the base year. With no new parking added, the increase in occupancy is fully created by the new vision developments and borne by the public parking system. The biggest jumps are in on-street supply, which is supporting the retail components of the mixed-use developments.

- On-street demands went up considerably in each scenario.
- Off-street demands are not adversely affected during midday conditions (but evening, as shown in the next chart are quite dramatic)
- Off-street demands in Central-A and B went up considerably.

Table 25 - Scenario 2-A Parking Supply and Occupancy Summary by Subarea, Peak Hour

	Type of Facility	Supply	Demand	Surplus	Existing Occupancy	Occupancy
East	On-Street	428	426	2	54%	100%
	Off-Street, Public	0	-	-	-	-
	Off-Street, Private	1,326	479	847	45%	36%
	TOTAL	1,754	905	849	47%	52%
West	On-Street	221	221	-	19%	100%
	Off-Street, Public	0	-	-	-	-
	Off-Street, Private	404	127	277	27%	31%
	TOTAL	625	348	277	25%	56%
Central-A	On-Street	864	803	61	42%	93%
	Off-Street, Public	669	448	221	67%	67%
	Off-Street, Private	1,378	422	956	38%	31%
	TOTAL	2,911	1,673	1,238	46%	57%
Central-B	On-Street	427	403	24	61%	94%
	Off-Street, Public	63	63	-	72%	100%
	Off-Street, Private	907	334	573	34%	37%
	TOTAL	1,397	800	597	48%	57%
Study Area	On-Street	1,940	1,853	87	68%	96%
	Off-Street, Public	732	511	221	68%	70%
	Off-Street, Private	4,015	1,362	2,653	38%	34%
	TOTAL	6,687	3,726	2,961	44%	56%

Table 26 - Scenario 2-A Projected Parking Supply and Occupancy Summary by Subarea, Evening Peak Hour

	Type of Facility	Supply	Demand	Surplus	Existing Occupancy	Future Occupancy
East	On-Street	428	2,567	-2,139	45%	600%
	Off-Street, Public	0	-	-	-	-
	Off-Street, Private	1,326	468	858	35%	35%
	TOTAL	1,754	3,035	-1,281	38%	173%
West	On-Street	221	2,399	-2,178	7%	1,086%
	Off-Street, Public	0	-	-	-	-
	Off-Street, Private	404	174	230	43%	43%
	TOTAL	625	2,573	-1,948	30%	412%
Central-A	On-Street	864	906	-42	34%	105%
	Off-Street, Public	669	1,712	-1,043	52%	256%
	Off-Street, Private	1,378	331	1,047	24%	24%
	TOTAL	2,911	2,949	-38	34%	101%
Central-B	On-Street	427	443	-16	54%	104%
	Off-Street, Public	63	1,125	-1,062	21%	1,786%
	Off-Street, Private	907	172	735	19%	19%
	TOTAL	1,397	1,740	-343	30%	125%
Study Area	On-Street	1,940	6,315	-4,375	38%	326%
	Off-Street, Public	732	2,837	-2,105	49%	388%
	Off-Street, Private	4,015	1,145	2,870	29%	29%
	TOTAL	6,687	10,297	-3,610	34%	154%

The evening peak conditions indicate a dramatic increase in overall occupancy, which is expected with 100% investment in new residential uses in the vision parcels. All zones are operating well over capacity, with the public parking system well over because of the reliance of the new developments on these spaces. The new residential units will require dedicated on-site parking, likely between 0.5 and 1 spaces per unit. This may require a reconsideration of the allowance of small-scale residential developments without parking.

Table 27 shows the projected demand of the scenarios developments during both the midday and evening peak hours.

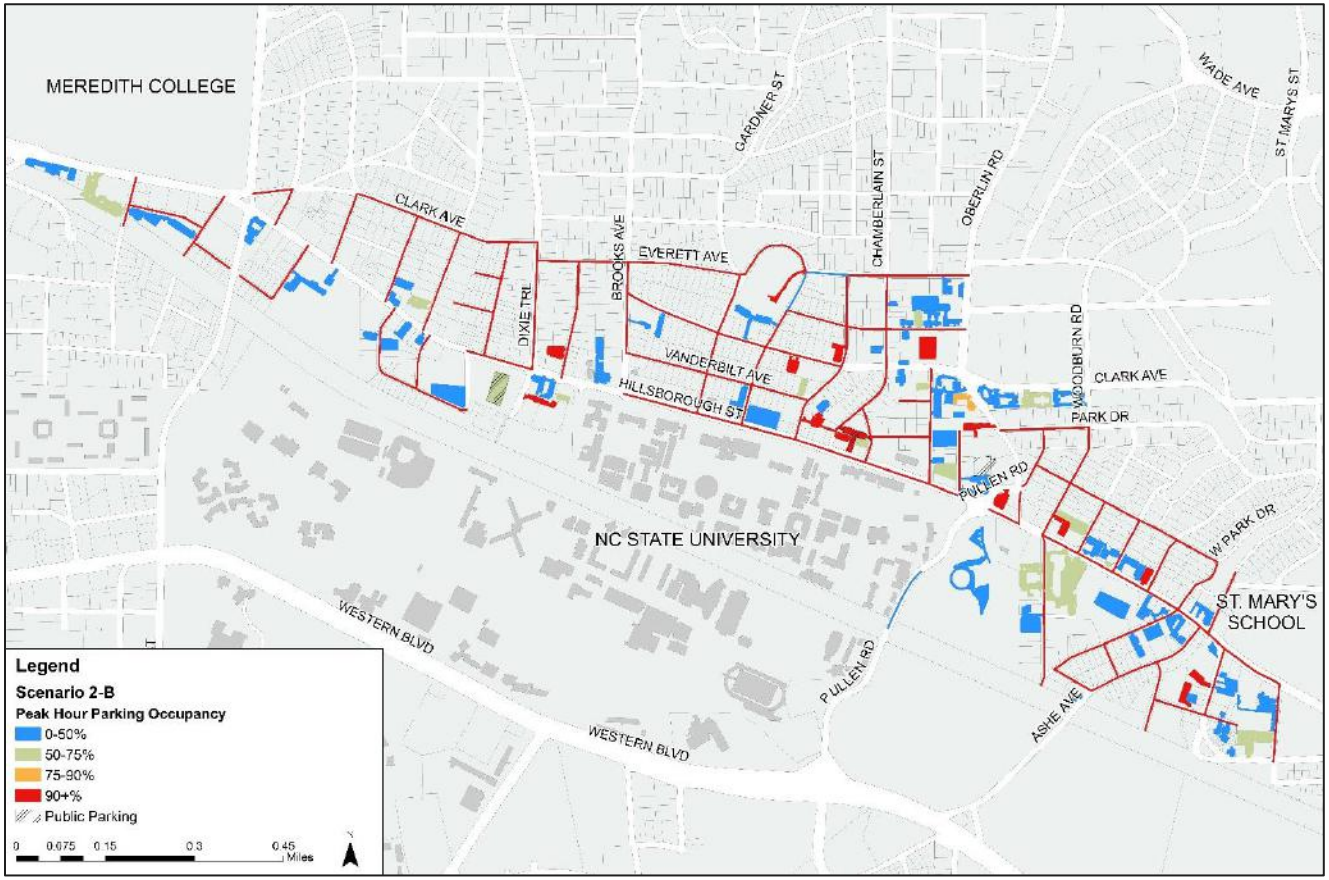
Table 27 - Scenario 2-A Project Land Uses Parking Demand

Parcel #	Midday Projected Demand	Evening Projected Demand
1	252 Spaces	577 Spaces
2	214 Spaces	517 Spaces
3	62 Spaces	151 Spaces
4	248 Spaces	601 Spaces
5	154 Spaces	375 Spaces
6	101 Spaces	246 Spaces
7	24 Spaces	58 Spaces
8	153 Spaces	371 Spaces
9	33 Spaces	79 Spaces
10	94 Spaces	228 Spaces
11	45 Spaces	110 Spaces
12	57 Spaces	138 Spaces
13	80 Spaces	195 Spaces
14	133 Spaces	323 Spaces
15	512 Spaces	1,246 Spaces
16	43 Spaces	104 Spaces
17	381 Spaces	925 Spaces
18	17 Spaces	41 Spaces
19	34 Spaces	84 Spaces
20	26 Spaces	62 Spaces
21	56 Spaces	129 Spaces
22	56 Spaces	443 Spaces
23	22 Spaces	53 Spaces
24	44 Spaces	108 Spaces
25	9 Spaces	22 Spaces
26	67 Spaces	163 Spaces

Scenario 2-B. Office and Ground Floor Retail

In the second potential mix of land uses for Parcels 1 through 26, the buildings were assumed to contain ground floor retail space with office space above. A breakdown of each of the identified parcels can be found on page 52 in **Table 24**. A total of 1,864,701 SF of retail space and 7,458,804 SF of office space were projected for this scenario. **Figure 33** shows the peak hour occupancy of Scenario 2-B while **Table 28** supplies a summary of projected parking by type and zone.

Figure 33 - Scenario 2-B Peak Hour Occupancy



The above results indicate that the study area is operating at approximately 56% of total supply, compared with 44% during the base year. With no new parking added, the increase in occupancy is fully created by the new vision developments and borne by the public parking system. The biggest jumps are in on-street supply, which is supporting the retail components of the mixed-use developments.

- On-street demands went up considerably in each scenario.
- Off-street demands are also maximized around new developments as office parking demands use all available public and non-restricted capacity.

Table 28 - Scenario 2-B Parking Supply and Occupancy Summary by Subarea, Peak Hour

	Type of Facility	Supply	Demand	Surplus	Existing Occupancy	Occupancy
East	On-Street	428	428	-	54%	100%
	Off-Street, Public	0	-	-	-	-
	Off-Street, Private	1,326	469	857	45%	35%
	TOTAL	1,754	897	857	47%	51%
West	On-Street	221	221	-	19%	100%
	Off-Street, Public	0	-	-	-	-
	Off-Street, Private	404	127	277	27%	31%
	TOTAL	625	348	277	25%	56%
Central-A	On-Street	864	833	31	42%	96%
	Off-Street, Public	669	448	221	67%	67%
	Off-Street, Private	1,378	422	956	38%	31%
	TOTAL	2,911	1,703	1,208	46%	59%
Central-B	On-Street	427	427	-	61%	100%
	Off-Street, Public	63	63	-	72%	100%
	Off-Street, Private	907	328	579	34%	36%
	TOTAL	1,397	818	579	48%	59%
Study Area	On-Street	1,940	1,909	31	68%	98%
	Off-Street, Public	732	511	221	68%	70%
	Off-Street, Private	4,015	1,346	2,669	38%	34%
	TOTAL	6,687	3,766	2,921	44%	56%

Table 29 - Scenario 2-B Projected Parking Supply and Occupancy Summary by Subarea, Evening Peak Hour

	Type of Facility	Supply	Demand	Surplus	Existing Occupancy	Future Occupancy
East	On-Street	428	318	110	45%	74%
	Off-Street, Public	0	-	-	-	-
	Off-Street, Private	1,326	468	858	35%	35%
	TOTAL	1,754	786	968	38%	45%
West	On-Street	221	293	-72	7%	133%
	Off-Street, Public	0	-	-	-	-
	Off-Street, Private	404	174	230	43%	43%
	TOTAL	625	467	158	30%	75%
Central-A	On-Street	864	506	358	34%	59%
	Off-Street, Public	669	349	320	52%	52%
	Off-Street, Private	1,378	331	1,047	24%	24%
	TOTAL	2,911	1,186	1,725	34%	41%
Central-B	On-Street	427	393	34	54%	92%
	Off-Street, Public	63	13	50	21%	21%
	Off-Street, Private	907	172	735	19%	19%
	TOTAL	1,397	578	819	30%	41%
Study Area	On-Street	1,940	1,510	430	38%	78%
	Off-Street, Public	732	362	370	49%	49%
	Off-Street, Private	4,015	1,145	2,870	29%	29%
	TOTAL	6,687	3,017	3,670	34%	45%

The evening peak conditions indicated a slight increase in overall occupancy, which is attributed to the retail components of the mixed-use developments. The West zone is projected to operate above capacity in the public parking realm, primarily because of the lack of available public parking in that area. **Table 30** shows the projected demand of the projected developments during both the midday and evening peak hours.

Table 30 - Scenario 2-B Project Land Uses Parking Demand

Parcel #	Midday Projected Demand	Evening Projected Demand
1	766 Spaces	67 Spaces
2	686 Spaces	60 Spaces
3	201 Spaces	18 Spaces
4	796 Spaces	70 Spaces
5	497 Spaces	44 Spaces
6	325 Spaces	29 Spaces
7	80 Spaces	7 Spaces
8	444 Spaces	43 Spaces
9	110 Spaces	9 Spaces
10	302 Spaces	27 Spaces
11	163 Spaces	13 Spaces
12	182 Spaces	16 Spaces
13	259 Spaces	23 Spaces
14	428 Spaces	38 Spaces
15	1,651 Spaces	145 Spaces
16	139 Spaces	12 Spaces
17	1,226 Spaces	108 Spaces
18	53 Spaces	5 Spaces
19	111 Spaces	10 Spaces
20	82 Spaces	7 Spaces
21	171 Spaces	15 Spaces
22	586 Spaces	52 Spaces
23	70 Spaces	6 Spaces
24	142 Spaces	13 Spaces
25	29 Spaces	3 Spaces
26	216 Spaces	19 Spaces

Scenario 2-C. Multifamily, Office, and Ground Floor Retail

In the third potential mix of land uses for Parcels 1 through 26, the buildings were assumed to contain ground floor retail space, office space on the second and third floors, and multifamily residential units on the top two floors. A breakdown of each of the identified parcels can be found on page 52 in **Table 24**. A total of 1,864,701 SF of retail space, 3,729,402 SF of office space, and 3,729 apartment units were projected for this scenario. **Figure 34** shows the peak hour occupancy of Scenario 2-C while **Table 31** supplies a summary of projected parking by type and zone.

Figure 34 - Scenario 2-C Peak Hour Occupancy

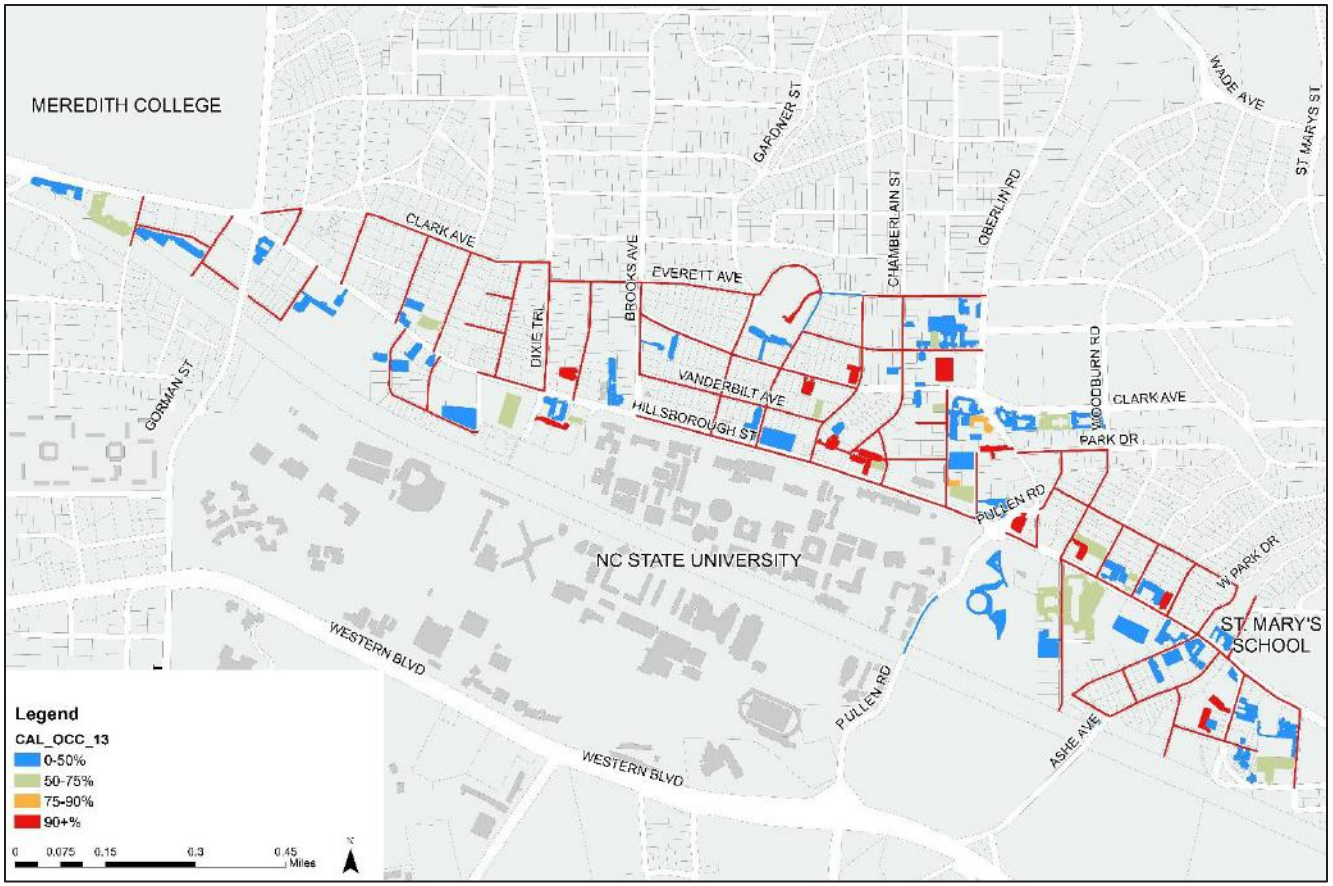


Table 31 - Scenario 2-C Parking Supply and Occupancy Summary by Subarea, Peak Hour

The above results indicate that the study area is operating at approximately 57% of total supply, compared with 44% during the base year. With no new parking added, the increase in occupancy is fully created by the new vision developments and borne by the public parking system. The biggest jumps are in on-street supply, which is supporting the retail components of the mixed-use developments.

- On-street demands went up considerably in each scenario.
- Off-street demands are not adversely affected during midday conditions (but evening, as shown in the next chart are quite dramatic)
- Off-street demands in Central-B went up considerably.

	Type of Facility	Supply	Demand	Surplus	Existing Occupancy	Occupancy
East	On-Street	428	428	-	54%	100%
	Off-Street, Public	0	-	-	-	-
	Off-Street, Private	1,326	474	852	45%	36%
	TOTAL	1,754	902	852	47%	51%
West	On-Street	221	221	-	19%	100%
	Off-Street, Public	0	-	-	-	-
	Off-Street, Private	404	127	277	27%	31%
	TOTAL	625	348	277	25%	56%
Central-A	On-Street	864	833	31	42%	96%
	Off-Street, Public	669	448	221	67%	67%
	Off-Street, Private	1,378	425	953	38%	31%
	TOTAL	2,911	1,706	1,205	46%	59%
Central-B	On-Street	427	427	-	61%	100%
	Off-Street, Public	63	63	-	72%	100%
	Off-Street, Private	907	344	563	34%	38%
	TOTAL	1,397	834	563	48%	60%
Study Area	On-Street	1,940	1,909	31	68%	98%
	Off-Street, Public	732	511	221	68%	70%
	Off-Street, Private	4,015	1,370	2,645	38%	34%
	TOTAL	6,687	3,790	2,897	44%	57%

Table 32 - Scenario 2-C Projected Parking Supply and Occupancy Summary by Subarea, Evening Peak Hour

	Type of Facility	Supply	Demand	Surplus	Existing Occupancy	Future Occupancy
East	On-Street	428	1,441	-1,013	45%	337%
	Off-Street, Public	0	-	-	-	-
	Off-Street, Private	1,326	468	858	35%	35%
	TOTAL	1,754	1,909	-155	38%	109%
West	On-Street	221	1,345	-1,124	7%	609%
	Off-Street, Public	0	-	-	-	-
	Off-Street, Private	404	174	230	43%	43%
	TOTAL	625	1,519	-894	30%	243%
Central-A	On-Street	864	896	-32	34%	104%
	Off-Street, Public	669	841	-172	52%	126%
	Off-Street, Private	1,378	331	1,047	24%	24%
	TOTAL	2,911	2,068	843	34%	71%
Central-B	On-Street	427	438	-11	54%	103%
	Off-Street, Public	63	548	-485	21%	870%
	Off-Street, Private	907	172	735	19%	19%
	TOTAL	1,397	1,158	239	30%	83%
Study Area	On-Street	1,940	4,120	-2,180	38%	212%
	Off-Street, Public	732	1,389	-657	49%	190%
	Off-Street, Private	4,015	1,145	2,870	29%	29%
	TOTAL	6,687	6,654	33	34%	100%

The evening peak conditions indicate a dramatic increase in overall occupancy, which is expected with 50% investment in new residential uses in the vision parcels. The east and west zones are operating well over capacity, with the public parking system well over because of the reliance of the new developments on these spaces. The new residential units will require dedicated on-site parking. **Table 33** shows the projected demand of the projected developments during both the midday and evening peak hours.

Table 33 - Scenario 2-C Project Land Uses Parking Demand

Parcel #	Midday Projected Demand	Evening Projected Demand
1	505 Spaces	67 Spaces
2	449 Spaces	60 Spaces
3	135 Spaces	18 Spaces
4	522 Spaces	70 Spaces
5	325 Spaces	44 Spaces
6	213 Spaces	29 Spaces
7	51 Spaces	7 Spaces
8	240 Spaces	43 Spaces
9	70 Spaces	9 Spaces
10	198 Spaces	27 Spaces
11	96 Spaces	13 Spaces
12	119 Spaces	16 Spaces
13	169 Spaces	23 Spaces
14	281 Spaces	38 Spaces
15	1,081 Spaces	145 Spaces
16	120 Spaces	12 Spaces
17	803 Spaces	108 Spaces
18	35 Spaces	5 Spaces
19	73 Spaces	10 Spaces
20	54 Spaces	7 Spaces
21	112 Spaces	15 Spaces
22	384 Spaces	52 Spaces
23	46 Spaces	6 Spaces
24	94 Spaces	13 Spaces
25	19 Spaces	3 Spaces
26	142 Spaces	19 Spaces

RECOMMENDATIONS AND STRATEGIES

Based on the findings from the near- and long-term demand analysis, as well as input from the project steering committee and the public outreach component of the project, the following recommendations and strategies should be considered for implementation along the Hillsborough Street corridor. Specifically, these recommendations are aimed at better utilizing existing supply along the corridor, creating a system of parking that supports existing and new businesses, and delays or minimizes the need to build new parking facilities until they are ultimately needed.

In reality, the provision of a singular new large scale public parking facilities along the corridor is likely not the most ideal solution, primarily because the linear nature of the corridor would not allow a singular facility to serve more than small areas of the corridor. Instead, the primary solution along the corridor should consider a coordinated approach to management of shared spaces that helps to serve multiple businesses and promote better utilization of parking during peak and non-peak conditions.

The following recommendations, ordered by phasing, are intended to support continued growth along the Hillsborough Street corridor.

IMMEDIATE AND ONGOING

Private Development Parking

As seen in the Scenario 2 results, the development opportunities along the Hillsborough Street corridor have the potential to generate a large amount of new parking demand along the corridor. The residential parking demand is a potential cause for concern as it relates to the provision of parking demand along the corridor. Today, there are development incentives that allow for smaller scale multifamily housing developments to be constructed without parking. While that has been successful at generating infill projects along the corridor, there needs to be some consideration in the future about how much residential development is allowed to be constructed without some level of on-site parking. In reality, medium- and large-scale residential developments will likely require parking at the behest of the financier of each project. But the Hillsborough Street Community Service Corporation and City of Raleigh should actively monitor the demands associated with multifamily residential housing and consider removing the variance that reduces the amount of parking required if it becomes detrimental to the vitality of the corridor. This recommendation is suggested for all zones.

Table 34 provides a comparison of current parking requirements for the area with the actual calibrated generation conditions from the Park+ model. These ratios are representative of the demand patterns observed during the study process and more closely resemble how land uses along the corridor operate.

Table 34 - Parking Generation Rate Comparison

Land Use Category	City Code*	Urban land Institute**	Park+***
Residential	1 parking space per dwelling unit (no more than 2 per du allowed) *No vehicle parking is required for the first 16 dwelling units*	1.65 – 1.85 spaces per dwelling unit *(depending on whether the unit is rented or owned)*	1.44 spaces per dwelling unit
Commercial	1 parking space per 500 square feet *No vehicle parking is required for the first 10,000 sf* *No vehicle parking is required for the first 30,000 sf when at least 25% of the ground floor of the building is devoted to retail or restaurant*	1.13 – 2.13 spaces per 1,000 square feet *(depending on weekday versus weekend demands)*	0.46 per 1,000 square feet
Office	1 parking space per 500 square feet *No vehicle parking is required for the first 10,000 sf*	2.8 – 3.8 spaces per 1,000 square feet *(depending on the size of the office complex)*	1.18 per 1,000 square feet

**** Based on Downtown District zoning from Raleigh Unified Development Ordinance***
***** Based on ULI's Shared Parking Handbook***
****** Based on calibrated rates from the Hillsborough Street Park+ model***

SHORT TERM (1-2 YEARS)

Wayfinding & Signage

The data identified earlier in this report indicates that there is available parking along the corridor. That fact was echoed in public outreach efforts, indicating that there was available parking, but it was difficult to find. Much of this is due to lack of knowledge of the location and availability of this parking. While there are wayfinding and signage aspects along the corridor, there is a lack of a coordinated effort to streamline that information and provide it in a meaningful way to the patron.

The Hillsborough Street Community Service Corporation, in conjunction with the partnership described in the previous section, should develop a coordinated wayfinding and signage plan that both brands the parking system and provides consistent information related to the parking system. The plan should include the following elements.

Consistent branding for publicly available facilities

The partnership should consider a branding strategy that clearly identifies parking facilities that are available for public use and navigates people from the primary street network to available parking. In most cases, this branding is done through static signage and coordinated marketing and education campaigns. Static signage would include facility signage with consistent theming. This theming could be simply a colored “P” (with the same color used at every lot to distinguish the public parking) to a graphic theme that stands out amongst competing parking areas. In coordination with these static lot signs, there should be a moderate amount of trailblazer signage that helps to get people from Hillsborough Street to parking facilities.

Ideally, before the partnership implements branded signage, they would conduct an audit of parking signage within the study area. This audit should inventory existing signage types, location, branding style, degree of legibility, condition of signage, as well as where signage is lacking. Following the audit, the HSCSC should work with the City of Raleigh to create a standard for consistent location of information and overall branding and ensure all parking signage within the corridor is up to date. This recommendation is suggested for all zones.

Distinguish between day and night availability

If much of the parking supply is shared (as defined in the previous recommendation), the spaces will not be available during all times of day. In that case, it will be necessary for the partnership to define signage that identifies availability by time of day. This type of signage is often complicated with multi-tiered messaging that convey time restrictions, policies, and potential impacts of parking illegally. While all of that information is important, it does not convey the immediate information a patron needs – can I park here? That information should be provided within the lot, either at the point of payment or near primary pedestrian ingress/egress.

At the street level, the information provided to the patron should be simplistic and convey whether parking is available during daytime or nighttime periods. This is often best conveyed with simplistic graphics and color schemes. For example, nighttime parking could be color-coded different than daytime parking and could include a symbol denoting nighttime parking. The example to the right is a graphic used by the City of Seattle to convey such a system. This recommendation is suggested for all zones.

Neighborhood Parking Demand Management

There are several active residential communities adjacent to the Hillsborough Street corridor. They range from family-style neighborhoods to student housing driven rental units. As the demands along Hillsborough Street continue to grow, there is a likelihood that spillover public parking demands will creep into these residential areas. The City of Raleigh currently has neighborhood permit parking areas that govern some of these streets, and it is likely that additional permit areas will need to be instituted to manage demands in the area.

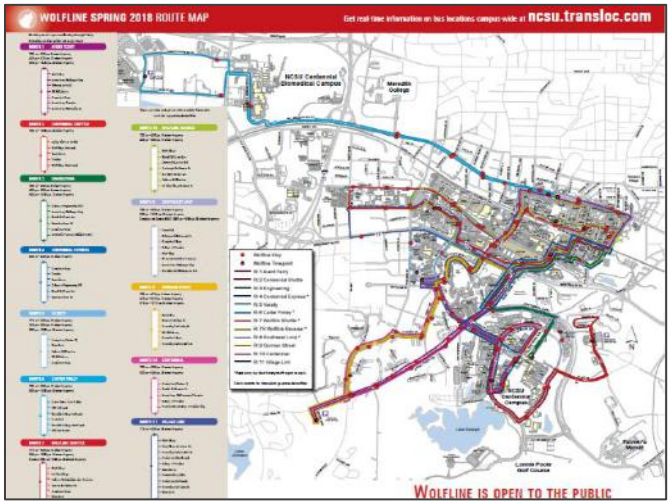
There is an alternative to neighborhood permit areas that should be considered in this area. The concept of a parking benefit district could be enacted, especially in areas that are heavier in rental based units. The benefit district is a common concept in residential areas adjacent to commercial districts where the application of paid parking on neighborhood streets is used to manage spillover demand while allowing for some expansion of peak hour parking capacity on the neighborhood street network. The benefit district will collect revenues – either through the implementation of parking meters or overlay of a pay-by-cell zone – and use the excess revenue (after covering operating costs) to reinvest into the neighborhood area in the form of streetscape, transportation enhancements, and neighborhood beautification. These districts can still have restricted evening parking to allow for resident parking on-streets, but allows for usage of the street network for parking demands generated from the commercial district during the day.

The implementation of a district like this will require coordination with area residents and property owners to design a system that is cohesive for all parties. Through transparent application and management, benefit districts have proven to be a win-win for residents and commercial owners alike. This recommendation is suggested for the Central-A and East zones.

Actions for Consideration

- Establish new neighborhood parking permit areas
- Implement parking meters in street areas adjacent to Hillsborough Street
- Create parking benefit districts, especially for Central A and East zones

Employee Parking Permit Program



Employee parking within the Central-A and B zones was a challenge mentioned at public meetings by various merchants, and by members of the steering committee. Currently, many employees and employers park for long stretches on-street directly in front of or adjacent to their business. While this is convenient, it has created a turnover issue that restrict patrons from parking in those spaces and potentially from visiting the business. One way to help combat this issue is to transform an underutilized parking lot into an employee parking lot that would be shared by businesses along the corridor. Employees would be issued a permit which would allow them to park in the lot during their shift hours. Anyone without a permit would be fined. Likewise, those with an employee parking permit who are found to be parking on-street would be fined to discourage this practice.

Additionally, employees should be encouraged to use park and rides located further from the corridor and take the NC State Wolfline to Hillsborough Street. The Wolfline is free to the public as well as NC State students and faculty and offers 12 total routes. The Carter Finley Park & Ride allows those without parking permits to park and take the Route 6 bus to the center of Hillsborough Street directly along the Central-B Zone. The route operates from 7:00 AM – 6:00 PM with 15-minute headways, and from 6:00 PM – 10:00 PM with 30-minute headways during the Fall/Spring semesters. During the summer semester, this route does not serve the park and ride. While this solution does not cover all hours employees would potentially need to get to and from their vehicle, it does help to provide alternative transportation for a large portion of the day. This recommendation is suggested for the Central-B zone.

Shared Parking Pilot Program

The introduction of a shared parking system between public and private entities is not expected to be an easy implementation. There will likely be hesitation on the part of private property and business owners whose primary objective is serving their clientele and maintaining strong on-site business. With this in mind, the partners in this process should consider a pilot of shared parking within the study area to evaluate and communicate the benefits of a shared parking arrangement. If this smaller pilot is successful, it will make a wider-scale implementation more feasible.

MEDIUM TERM (2-4 YEARS)

Dynamic information/communication

The availability and location of parking can also be communicated electronically, primarily through smartphone communications. In years past, the communication of availability was often developed in a standalone app. Those applications were often underutilized, because the patron was unaware of the application until after it was needed (e.g. after the trip was complete). Nowadays, the information is more readily available in traditional mapping applications (GoogleMaps, Waze, etc.) and online parking repositories (Parkopedia, ParkMe, etc.). The partnership needs to focus on compiling that information in online mapping formats that can be consumed by these platforms. That reduces the need to develop a standalone application and increases the likelihood that the information reaches a mass audience. In addition, if the system includes a smartphone application for payment, the wayfinding and location information should be included in that application as well. This recommendation is suggested for all zones.

Implement dynamic or demand based pricing at parking meters

Dynamic pricing is the process of changing parking pricing based on the day of the week or time of day to better manage parking demand ebbs and flows. This type of system can be implemented geographically or temporally. In a geographic system, the parking pricing would be lower in low demand areas and higher in high demand areas. This typically aims to balance fringe parking assets with core parking demands through value-based pricing. Temporal systems will utilize different rates during different times of day to promote better decision making during peak conditions. For example, heavy lunchtime periods would experience higher prices, with the intention of pushing some patrons into off-street parking facilities.

The decision on which method to choose will largely lie in two elements – available data and ability to communicate. The data needed to run a dynamic pricing system can be quite robust. To manage effectively and change rates often, there needs to be a real-time supply of data to feed policy management and decision-making. If the data-feed is less than real-time, it will limit the ability to adjust rates and will reduce the demand management impacts of the program. That's not to say it can't be effective, but it won't provide responsive management.

The ability to communicate is largely rooted in how you tell your patrons the price and regulation of parking. If this is changing geographically or temporally, there needs to be a mechanism to communicate that to effectively manage and change behaviors. This is often completed online or through smartphone applications. It is difficult and time-consuming to communicate this through signage, especially if there are

Cursory evaluations of dynamic pricing during peak periods in Central-B zone in Park+ indicated that as much as 20-25% of the on-street demand generated in that area would park in a different location (further away or in off-street parking). This shift could free up an additional 50-75 spaces in and around the Hillsborough Street area to support short duration commercial parking trips.

consistent changes to the program. This recommendation is suggested for the Central-B zone.

Implement extended enforcement hours

In areas or districts that heavily restaurant or entertainment driven, the application of standard enforcement hours (8am to 5pm) often misses the mark in managing parking demands. Demands for these uses extend into the evening and parking at the curbside is often abused immediately after the final enforcement hour passes. This can be difficult for patrons looking to access businesses for dinner or entertainment uses, as well as impactful for businesses who rely on access to support business vitality. In many locations, these areas are often managed with different time restrictions and configurations. For example, communities like Austin, TX and Tempe, AZ have enforcement hours that run up to and past 10pm. The City should consider adopting similar policies in this area to support better management of the limited curbside assets. This policy might require dedicated enforcement staff along the Hillsborough Street corridor, but that could pair well with the desire to implement a shared parking system, which would require dedicated enforcement oversight. This recommendation is suggested for the Central-A and Central-B zones.

LONG TERM (GREATER THAN 4 YEARS

Shared Parking

One of the primary initial and long-term considerations for the corridor should be the creation of a shared pool of parking resources to serve area demands. Based on observations of mid-day and evening peak conditions, there are several areas that have private parking supply that is underutilized during non-peak conditions. For example, most banks don't have nighttime or weekend demands, but under current conditions they are largely unavailable for use by patrons in those conditions. This unavailability is due to a number of reasons – liability concerns on the part of the owner, desire to maintain parking space availability during peak conditions, and lack of parking management capability. These reasons often lead to underutilized supply that is not available when it is most needed.

Shared parking is the process by which two land uses utilize the same parking facility without conflict, allowing for more optimal use of parking supply so that parking is better utilized. This process works best when nearby land uses have different peaking conditions, such as a restaurant and a church, or office and residential.

Many communities are beginning to see opportunities to better manage that supply through a coordinated approach between public and private entities. In a recent successful example, the City of Sacramento, CA recently implemented a city-wide shared parking program wherein the City manages many of the private parking assets as a public parking facility. This includes standalone parking facilities and smaller business-level parking facilities. The facilities are signed as a singular public parking entity and marketed as public parking (including pre-trip parking reservations that help patrons demystify the parking process before starting their trip). The intent of the program is to provide a more cohesive public parking system that supports multiple users and better utilizes the overall parking supply. The shared parking program is a completely voluntary program, and would only include businesses and property owners that wish to opt in. These business owners would need to be approached and

coordinated with to define parameters of the program. There should also be a revenue sharing component to help incentivize involvement in the program.

For the Hillsborough Street corridor, a partnership between the Hillsborough Street Community Service Corporation, the City of Raleigh, NC State, and the private sector could yield existing and long-term benefits towards better balancing parking demands. Specifically, the partnership could provide the following benefits:

1. Coordination of available supply – using the results of this study and continued evaluations of parking supply and availability, the partnership could identify and help arrange spaces for use by businesses and their patrons. Based on the location and availability (day vs night, short-duration vs long-duration), the partnership could help define users and management of spaces. For example, parking that may not be within a comfortable walking distance (more than a couple blocks) might be best suited for employee parking, but would help to better support short-term use in high demand areas by removing this demand around business areas.

2. Management of available supply – the partnership could manage available supply through a third-party management agreement with area parking operators. This would alleviate some of the concerns of participating property and business owners, allowing for both enforcement and removal of vehicles that might conflict with peak-business needs. The management of parking could also collect revenue that helps fund the shared parking system and return revenue to the property and business owners.

3. Coverage of liability – one of the primary concerns for private shared parking participation is the liability related to incidents that could occur on the private property. The partnership can often assume the risk associated with these incidents and provide a blanket liability coverage that reduces or removes impacts to participating private sector entities. The costs of these liability coverages would be covered by parking revenues collected through the shared parking program.

4. Brokering shared parking agreements – the partnership could be responsible for actively brokering shared parking agreements for existing businesses and new development using the known inventory of parking spaces, occupancy data from this study, and subsequent updates based on annual data collection efforts to help define areas of opportunity. For shared parking to be successfully implemented, the HSCSC and the City need to play an active role in both identifying shared parking opportunities in high-demand areas and negotiating agreements for the shared use of the parking facility.

5. Marketing the shared parking program – once the coordinated shared parking program is in place, the partnership should be the primary arbiter of information related to availability and use of the parking system. The HSCSC is a unique position to be able to leverage good community information and its partnerships along the corridor to spread information about the location and use of the program. Combined with improved branding and wayfinding (discussed in the next section), this effort should help to promote efficient use of the parking elements.

6. Collection of parking revenues – the parking in these shared facilities should require payment for parking. This payment will help reduce abuse of parking availability, promote turnover of spaces, and help support the shared management of the spaces. Revenue collection could occur from a number of methods, including:
    a. On-site parking attendants – most costly approach to management, but most likely to promote secure use of facilities and clearing of spaces for business activities.
    b. Parking meters/paystations – less costly on an ongoing basis for program management, but will require capital investment and provides less personalized management of spaces.
    c. Pay by phone – least costly implementation and promotes better use of personal technology to access parking. Provides the least amount of personalized management.

7. Enforcement of parking spaces – the partnership will need to be able to enforce parking violations, which could be done in conjunction with City of Raleigh enforcement practices. Enforcement would include a combination of ticketing, citation collection, and vehicle removal. While the last element is not highly recommended from a customer service perspective, it may be necessary to support business access for participating businesses.

Additionally, the concept of shared parking should not be limited to public-private partnerships. If existing businesses can find opportunities to share parking between their clients and employees, the same benefits of a larger shared parking system could be realized (albeit, at a smaller scale). If the intent of implementing shared parking is better utilization of existing underutilized spaces, any approach to sharing should be a positive step in that direction.

While these efforts will require time and investment on the members of the partnership, the costs will be considerably lower than the cost to invest in and manage new parking supply. If implemented effectively, the shared parking system should alleviate the need for new public parking in the short-term and provide a more efficient use of assets along the corridor. It should be noted that there is nothing stopping individual businesses from implementing their own shared parking policy outside of the network if they so wish. This recommendation is suggested for all zones.

Tempe, Arizona Case Study

In Tempe, Arizona, the downtown business improvement district has been actively engaged in the management and provision of district-wide shared parking for over two decades. The Downtown Tempe Authority (previously the Downtown Tempe Community, Inc.) has a component of its organization that manages parking supply in the area to help support business access and community growth. The program started as a partnership with the City of Tempe to manage public off-street parking assets. Over time it grew to include on-street parking (revenue collection and enforcement) and a large majority of the private sector parking supply in the Downtown Tempe area. The intent of the program was to simplify the parking process for patrons by using one branded strategy for public parking. As the on-street and private off-street elements have been folded in, the programs intentions have grown beyond public parking and also now focus on creating a shared parking system throughout the community that helps support new business development without the need to build standalone parking supply. The Downtown Tempe Authority parking

management program has been wildly successful, generating revenue that has been reinvested into the Downtown Tempe area, promoting a mixture of access and mobility options, and creating an environment of partnership and sharing amongst many private sector entities.

Additional Parking Supply

Based on the results of this study, a singular new standalone parking structure will likely not be the perfect solution for existing and future parking problems along Hillsborough Street. In this situation, new standalone public parking is defined as a parking structure that is built and managed by one entity (City of Raleigh, HSCSC, etc.) for the express purpose of serving one customer (transient parkers). As stated previously, the long linear nature of the corridor does not lend itself to a singular location that would optimally serve many land uses along the corridor. For this reason, the construction of a new standalone public parking structure would likely not yield optimal results.

With that said, there are a few options or opportunities to add parking supply in a meaningful way that would contribute to the success and vibrancy of Hillsborough Street and the surrounding area. The first is a partnership with other entities in the area. The most common partnership would be of the public-private variety. In this case, a new development that is intending to build off-street supply might be a good partner candidate to add some public-facing spaces at a lowered cost. For example, if a new mixed-use development intends to build 200 private spaces as part of the development, the City or partners adding 100 spaces of public demand might help to alleviate demand constraints in areas with high intensity of activity. This sharing of spaces would also reduce the burden on the public entity paying for parking and likely help create more activity at the mixed-use development.

Another option would be to partner with another public entity in the area. An example of this might be the City of Raleigh and NC State partnering on an off-street parking facility. In this hypothetical situation, the university would benefit from the creation of new daytime academic spaces to serve North Campus, while the City and the Hillsborough Street area would benefit from the activation of additional nighttime and weekend spaces to serve growth.

Finally, new developments that overbuild parking capacity might be good candidates for leasing or sharing unused spaces. The projections from Scenario 1 indicate that many of the proposed developments could see excess spaces in their proposed parking facilities. If this is truly the case, these are opportunities to add to the shared parking supply defined in the very first recommendation of this study. This recommendation is suggested for the Central-A and Central-B zones.

A few potential sites for shared parking supply include the North Hall lot, the Brooks lot, and any of the designated new developments identified in the future analysis component of this study.

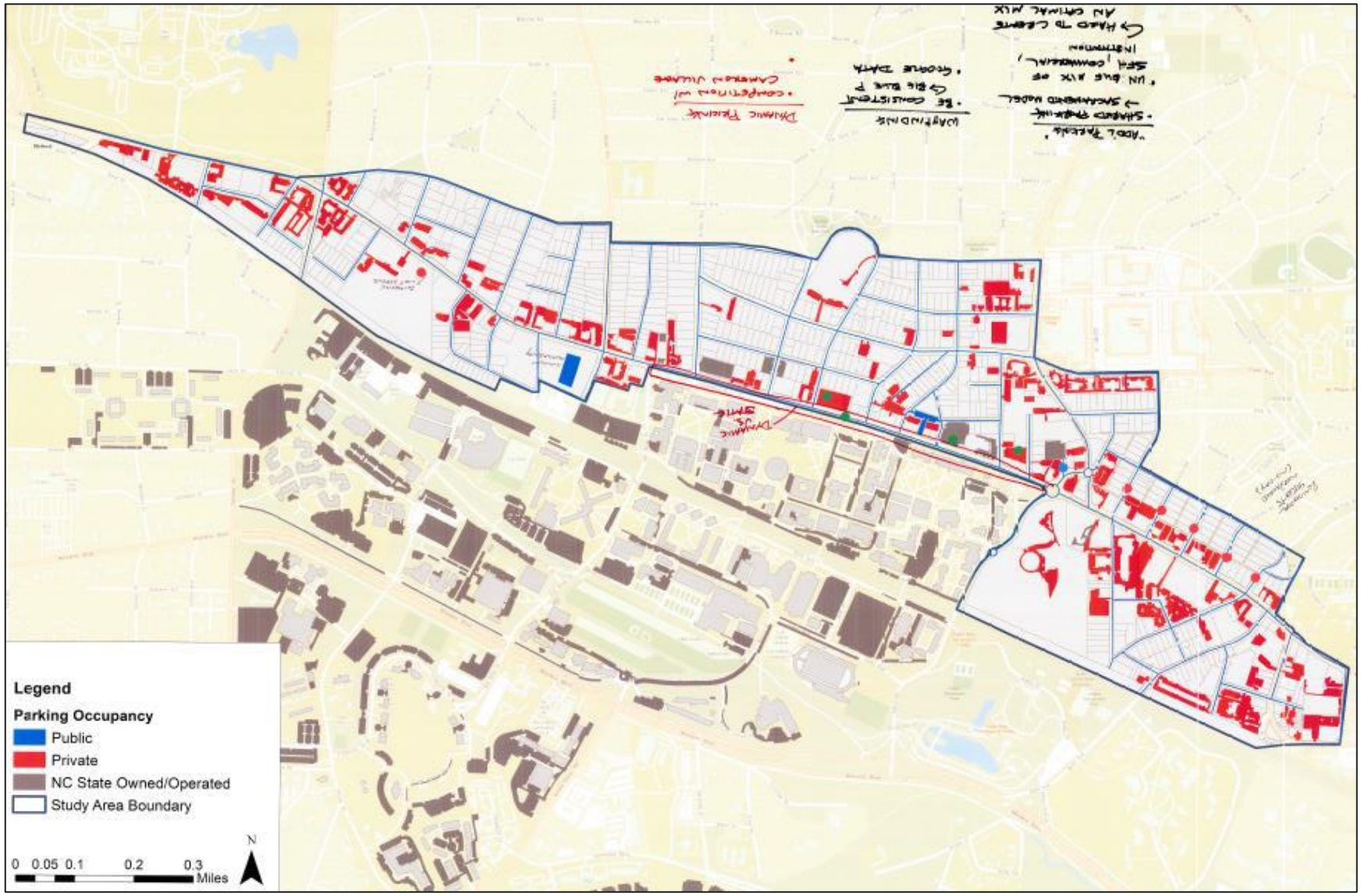
RECOMMENDATIONS PHASING

Table 35 provides phasing for each of the recommendations as well as some of the steps within the recommendation, the corresponding zone, responsible entity, cost estimates, and general return on investment. Recommendations are listed from short term to long term to help guide the steering committee following this study.

Table 35 - Recommendations Phasing

Recommendation	Zone	Responsible Entity	Cost Estimate	Return on Investment
Immediate and Ongoing				
Private development parking code	All Zones	HSCSC & City of Raleigh	City staff review/evaluation	If codes are right-sized to mimic actual need, an efficient and usable amount of parking could be developed in the area
Hillsborough Parking Task Force	All Zones	HSCSC, City of Raleigh, & NCSU	Staff time	Ongoing evaluation and review of parking issues and opportunities along the corridor
Short Term (1-2 Years)				
Improve wayfinding and signage	All Zones	HSCSC, City of Raleigh, & NCSU	*See below*	
Consistent branding for public parking	All Zones	HSCSC, City of Raleigh, & NCSU	$500-$1,000 per trailblazer sign $2,500 - $10,000 for branded signage	More efficient use of existing underutilized parking assets, less need to build or lease private parking
Distinguish between day and night parking	All Zones	HSCSC, City of Raleigh, & NCSU	$250 - $750 per sign installation	More efficient use of nighttime parking
Expand neighborhood permit program	Central-A & East	HSCSC & City of Raleigh	City staff time to evaluate	Improved protection of residential spaces from spillover parking demands
Installation and enforcement of metered parking	Central-A	HSCSC & City of Raleigh	$5,000 - $10,000 per	Balance of parking demands to allow commercial patrons to park in neighborhood areas with revenue returned to neighborhoods
Employee parking permit program	Central-B	HSCSC & City of Raleigh	Cost to lease spaces in private facilities or use of NCSU lots	Move employee parking demands from high demand areas and provide a consistent and reasonable place for employees to park
Shared parking pilot program	All Zones	HSCSC, City of Raleigh, & NCSU	Cost to lease and operate spaces (likely passed on to a private parking management company)	Ability to test the effectiveness of shared parking, with the opportunity to communicate successes and benefits

Medium Term (2-4 Years)				
Dynamic information/communication	All Zones	HSCSC, City of Raleigh, & NCSU	$5,000 - $10,000 for parking technologies to support database of static information	More efficient use and navigation to available existing parking, less need to build or lease new parking
Pricing/regulations to influence behavior	Central-A & Central-B	HSCSC & City of Raleigh		
Implement dynamic or demand based pricing	Central-B	HSCSC & City of Raleigh	$40,000 - $70,000 to evaluate parameters of a dynamic pricing system and establish rates and policies Potential need to invest in new meter technology	Balance of parking demand distribution between high demand and low demand areas Creation of available spaces and turnover in high demand areas
Implement extended enforcement hours	Central-A & Central-B	HSCSC & City of Raleigh	Additional enforcement staffing for Hillsborough Street area	Improved turnover and availability in early evening hours for restaurants and retail uses
Long Term (Greater than 4 years)				
Shared parking program	All Zones	HSCSC, City of Raleigh, & NCSU	Cost to lease and operate spaces (likely passed on to a private parking management company)	Better use of underutilized private parking spaces, less need to build parking spaces
Additional parking supply	Central-A & Central-B	HSCSC & City of Raleigh	$15,000-30,000 per parking space	Likely not cost effective without public-private partnerships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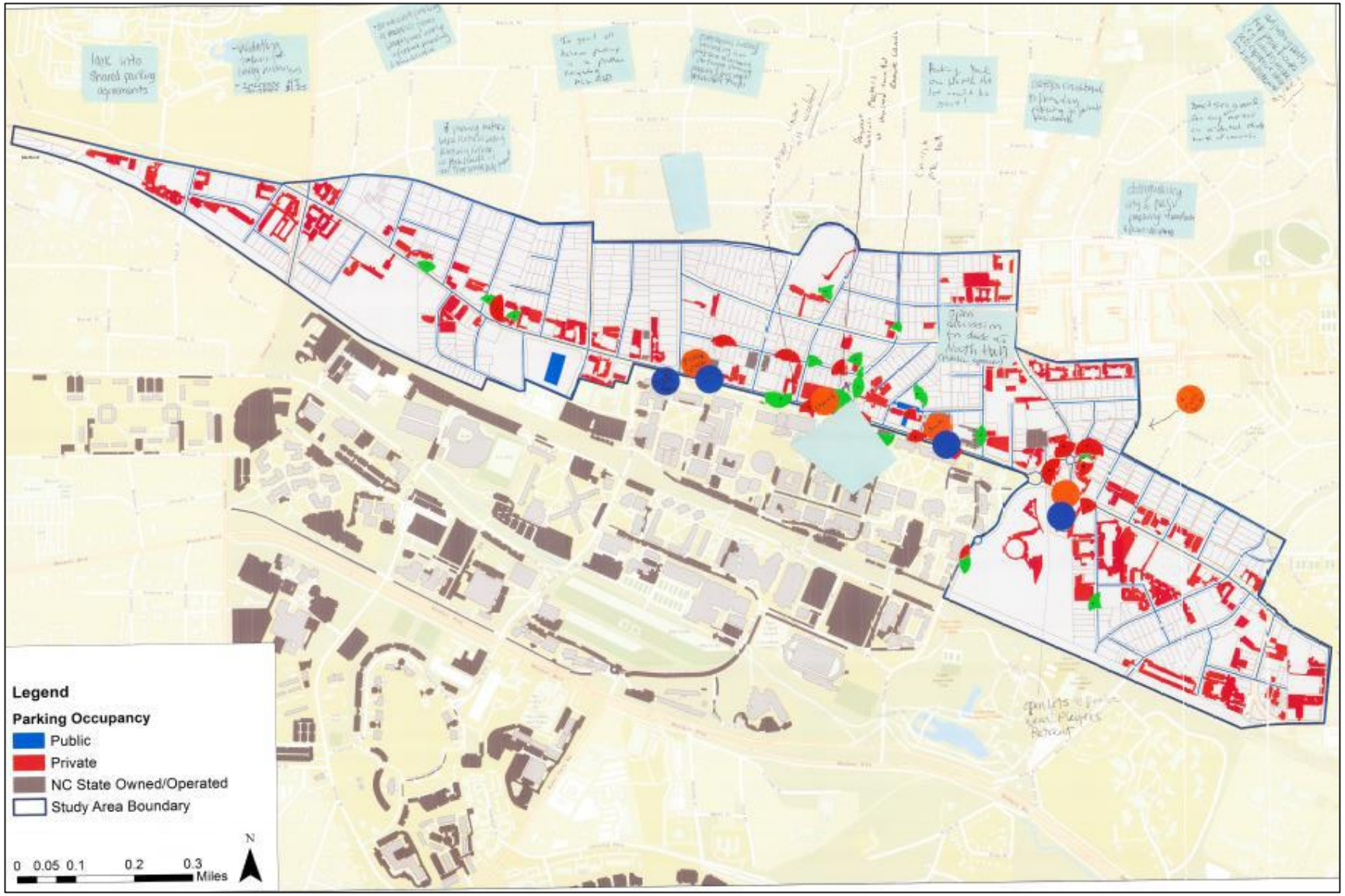
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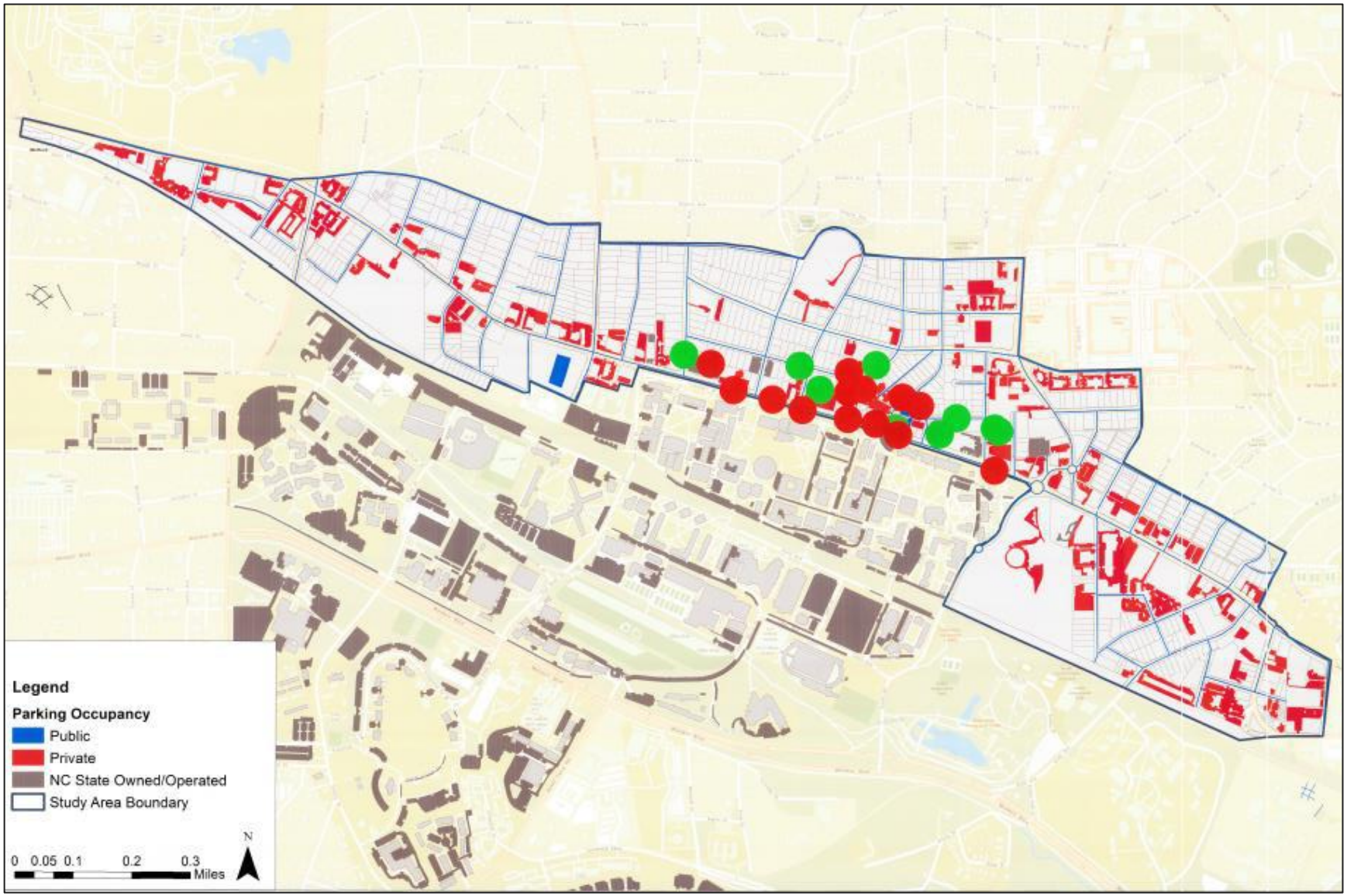
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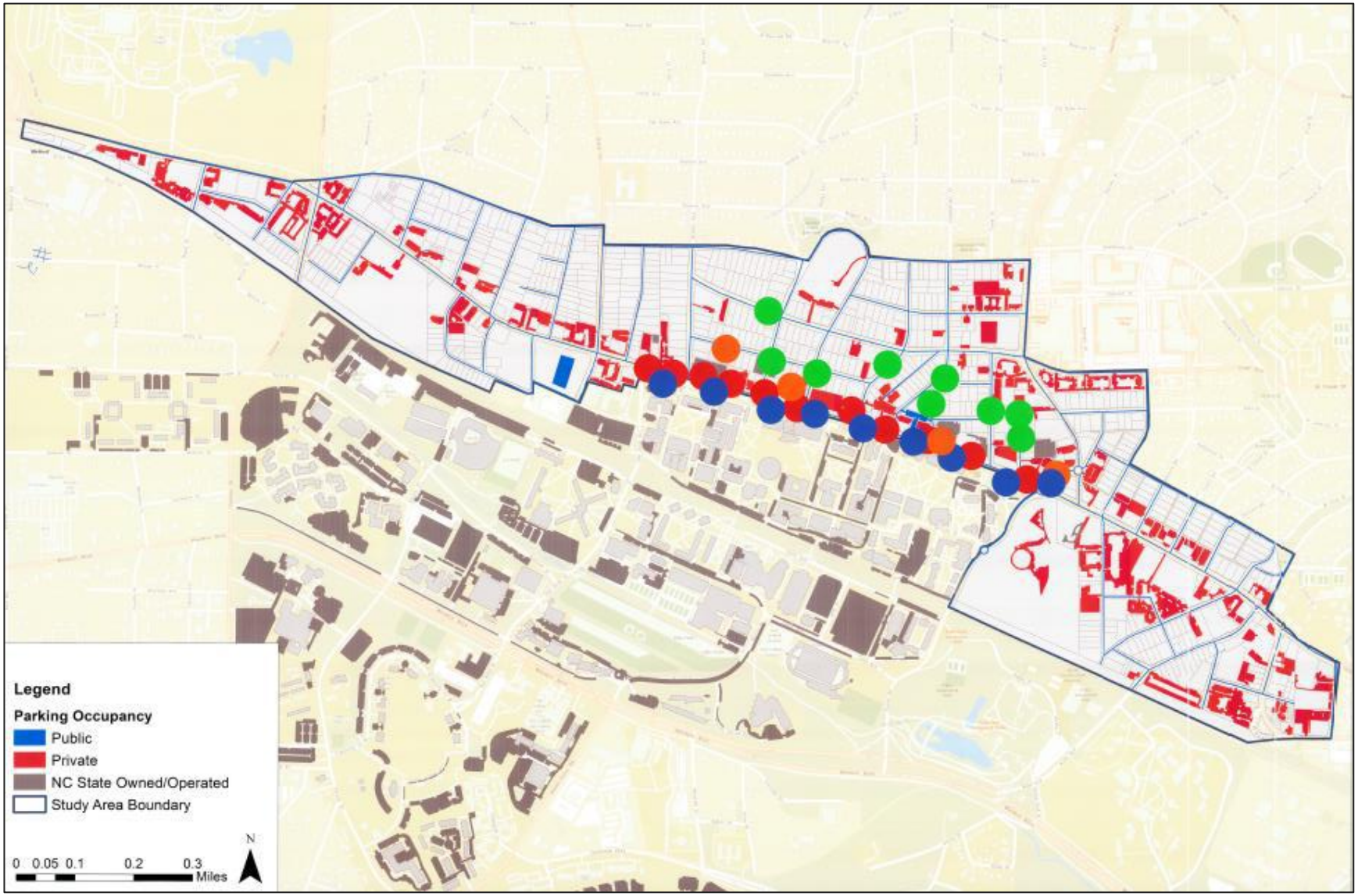
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